



3100FT Series Planters



JOHN DEERE

OPERATOR'S MANUAL

3100FT Series Planters

OMKK147745 ISSUE D6 (ENGLISH)



CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:



WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

John Deere Horizontina

Worldwide Edition
Printed in U.S.A.



Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. See www.techpubs.deere.com (Ag&Turf/JDPS), www.johndeeretechnico.com (C&F), or your John Deere dealer to order.

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (PIN) in the Specification or Machine Numbers section. Accurately record all the numbers to help in tracing the machine should it be stolen. PIN information is helpful when ordering parts. File the identification numbers in a secure place off the machine.

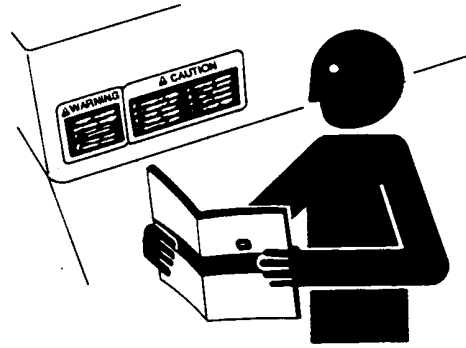
WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received at time of purchase.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

DX,IFC1-19-03APR09

John Deere Is at Your Service



TS201—UN—15APR13

Customer satisfaction is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts, and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.
- **John Deere replacement parts, repair services, and information for maintenance or repair are available. For more information, please visit deere.com or deere.ca.**

DX,IFC,JDS-19-30SEP25

Company Info



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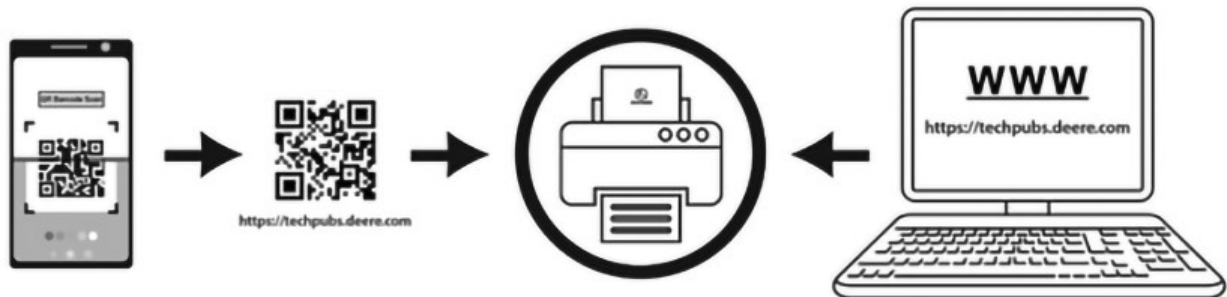
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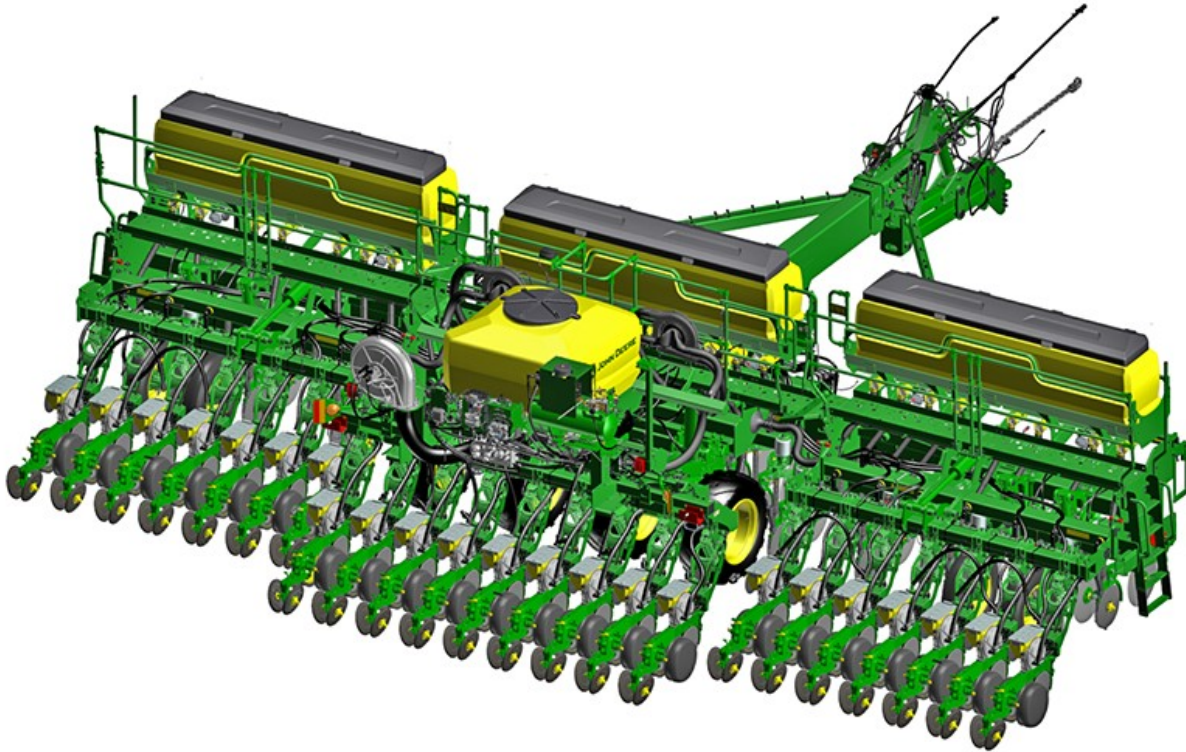
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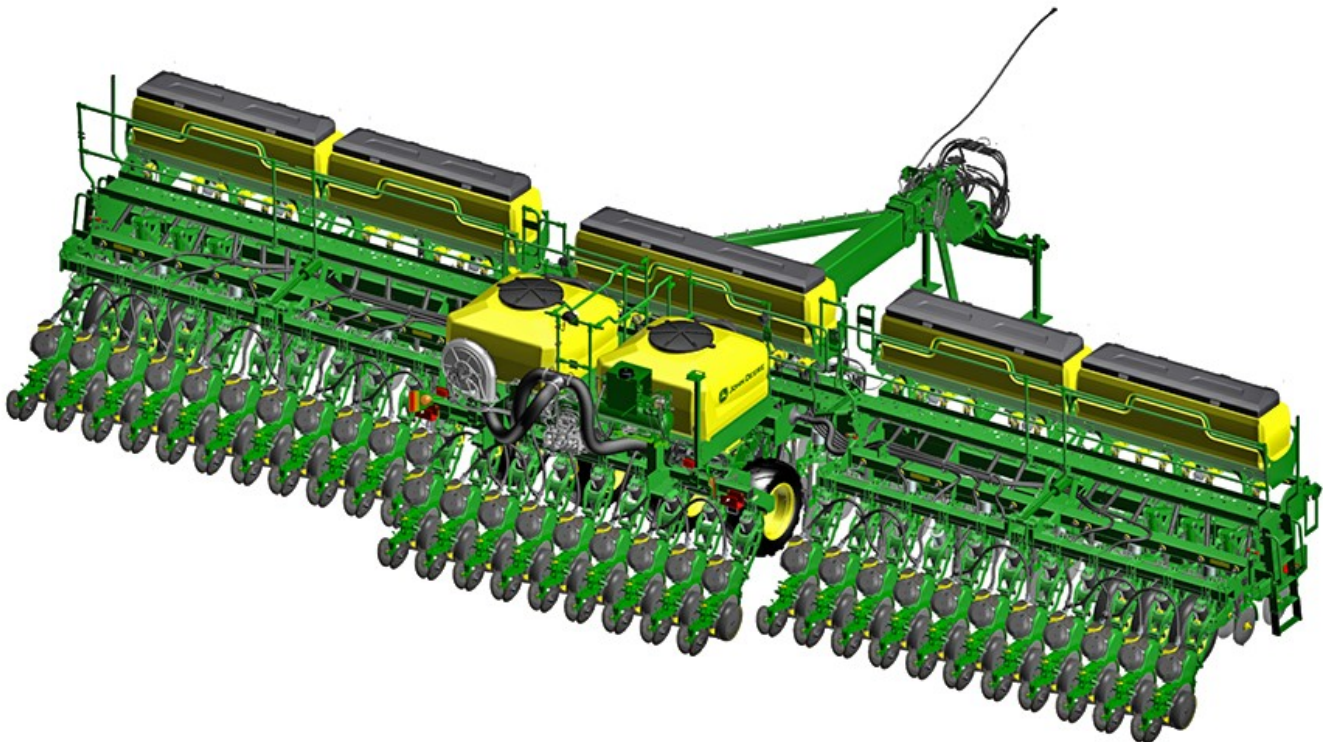
General View

General View



3100FT Series—MaxEmerge 5e

CQ1373348—UN—25JUL24



3100FT Series—ExactEmerge

CQ1373349—UN—25JUL24

a3rfgg,1702557535047-19-25JUL24

Safety

Recognize Safety Information



T81389—UN—28JUN13

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words



▲ WARNING

▲ CAUTION

TS187—19—30SEP88

DANGER; The signal word DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION; The signal word CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. CAUTION may also be used to alert against unsafe practices associated with events which could lead to personal injury.

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition, clean, and visible. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from a John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this Operator's Manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact a John Deere dealer.

DX,READ-19-16MAR26

Replace Safety Signs



TS201—UN—15APR13

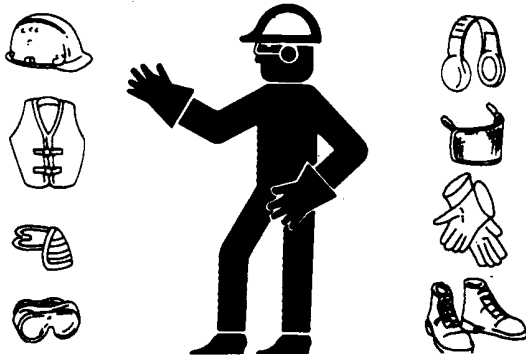
Replace missing or damaged safety signs. Use this Operator's Manual for correct safety sign placement. Keep safety signs clean and visible.

There can be additional safety information contained on

parts and components sourced from suppliers that is not reproduced in this Operator's Manual.

DX,SIGNS-19-19MAR26

Wear Protective Clothing



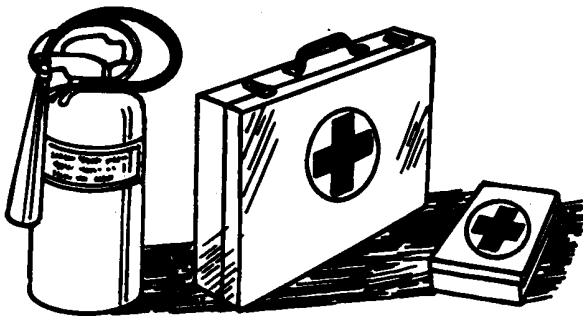
TS206—UN—15APR13

Wear close fitting clothing and safety equipment appropriate to the job.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.

DX,WEAR2-19-03MAR93

Prepare for Emergencies



TS291—UN—15APR13

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

DX,FIRE2-19-03MAR93

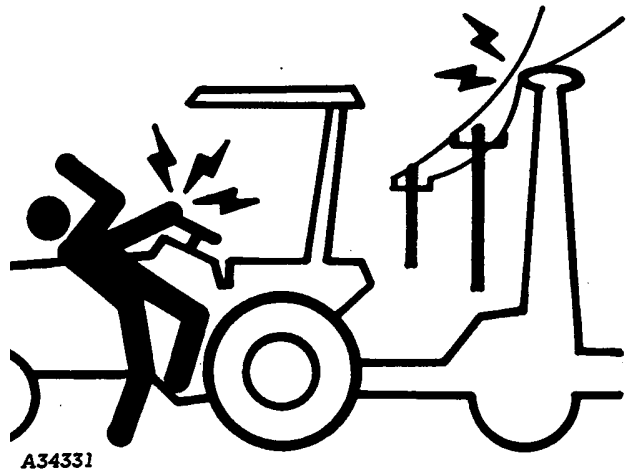
Operator Ability

- Machine owners must make sure that operators are responsible, trained, have read the operating instructions and warnings, and know how to operate the machine properly and safely.

- Age, physical ability, and mental capacity can be factors in machine-related injuries. Operators must be mentally and physically capable of accessing the operator station and/or controls, and operating the machine properly and safely.
- Never allow a child or an untrained person to operate the machine. Instruct all operators not to give children a ride on the machine or an attachment.
- Never operate machine when distracted, fatigued, or impaired. Proper machine operation requires the operator's full attention and awareness.

DX,ABILITY-19-07DEC18

Operate the Machine Safely



A34331

A34331—UN—13OCT88

Be careful when operating machine to avoid injury.

If the machine must be in a raised position while working on or near it, be certain service locks are installed or machine is adequately supported. Anytime hydraulic work must be done, lower the machine.

Serious injury or death can result from contact with electric lines. Use care when moving or operating this machine near electric lines to avoid contact.

Stand clear of machine when hydraulic components are being used. Mechanical or hydraulic failure can allow machine components to move rapidly.

Be sure cylinder and attaching hoses are fully charged with oil before operating system.

Be careful when operating system on hillsides; tractor can tip sideways if it strikes a hole, ditch or other irregularity.

Permit only one person, the operator, on tractor platform while tractor and machine are in operation.

AG,OUG06074,1162-19-04AUG00

Keep Riders Off Machine



CQ1412098—UN—03JUL25

Keep riders off.

Riders on machine are subject to injury such as being struck by foreign objects and being thrown off of the machine. Riders also obstruct the operator's view resulting in the machine being operated in an unsafe manner.

E443CH7,1750688297771-19-04JUL25

Prevent falls by facing the machine when getting on and off. Maintain 3-point contact with steps, handholds, and handrails.

Use extra care when mud, snow, or moisture present slippery conditions. Keep steps clean and free of grease or oil. Never jump when exiting machine. Never mount or dismount a moving machine.

DX,WW,MOUNT-19-12OCT11

Avoid Backover Accidents



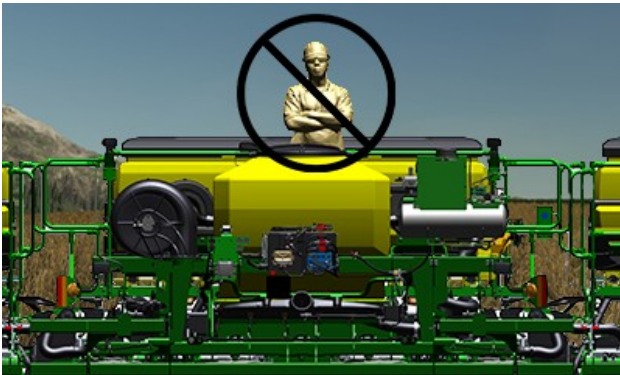
PC10857XW—UN—15APR13

Before moving machine, be sure that all persons are clear of machine path. Turn around and look directly for best visibility. Use a signal person when backing if view is obstructed or when in close quarters.

Do not rely on a camera to determine if personnel or obstacles are behind the machine. The system can be limited by many factors including maintenance practices, environmental conditions, and operating range.

DX,AVOID,BACKOVER,ACCIDENTS-19-30AUG10

Keep People Distant from Planter



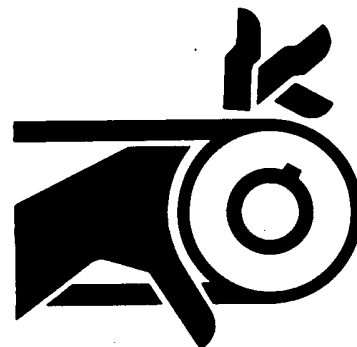
CQ1355150—UN—12JUL24

Do not allow people to remain on planter when it is moving or planting. Riders are subject to injuries.

It is not allowed to walk over the seed box as this may cause accidents and damage these items.

a3rfgg,1702561935097-19-31JUL24

Guards and Shields

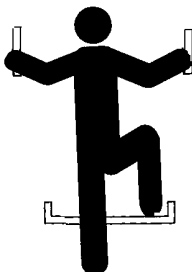


TS285—UN—23AUG88

Keep guards and shields in place at all times. Ensure that they are serviceable and installed correctly.

Always shut off engine and remove key before removing any guards or shields.

Use Steps and Handholds Correctly



T133468—UN—15APR13

Keep hands, feet and clothing away from moving parts.

uqtm1iv,1706613901322-19-30JAN24

Avoid Contact With Moving Parts



TS256—UN—23AUG88

Keep hands, feet, and clothing away from power driven parts. Never carry out any cleaning, lubrication or adjustment operation when engine is running.

uqtm1iv,1706618087677-19-30JAN24

Use Electronic Display Properly

Electronic displays are secondary devices intended to aid the operator in performing field operations, increase comfort and provide entertainment. Displays offer a wide range of functionality, are used in many different machine system applications and can be used with other secondary devices such as handheld electronic devices.

A secondary device is any device that is not required to operate your machine for its primary use. The operator is always responsible for safe operation and control of the machine.

To prevent injury while operating the machine:

- Position the display according to the installation instructions. Ensure that the device is secured and does not obstruct the driver's view or interfere with the machine operating controls.
- Do not become distracted by the display. Stay alert. Pay attention to the machine and surrounding environment.
- Do not change settings or access any functions that require prolonged use of the display controls while machine is moving. Stop the machine in a safe location and place in park position before attempting such operations.
- Never set the volume so high that you cannot hear outside traffic and emergency vehicles.

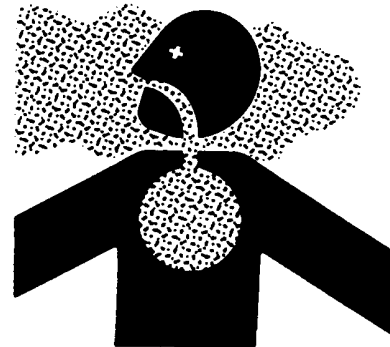
To promote safe operation, certain functions of displays may be disabled unless the machine movement is restricted and/or has been placed in the park position.

Overriding this safety feature may violate applicable law and can result in damage, serious injury, or death.

Only use available display functionality when conditions permit you to do so safely and in accordance with instructions provided. Always observe safe driving rules, state, or local laws and traffic regulations when using any secondary device.

DX,ELEC,DISPLAY-19-13JAN15

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471

A34471—UN—11OCT88

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

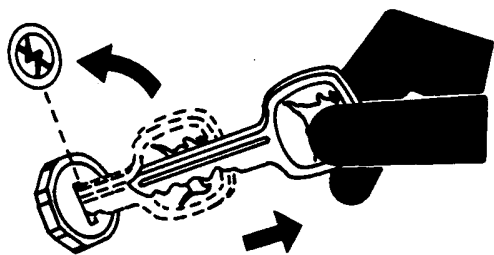
- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled **'Caution'**: Least toxic.

Generally require use of gloves and skin protection.

- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10

Park Machine Safely



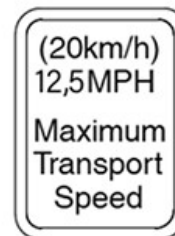
TS230—UN—24MAY89

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and secure the machine. If equipped, remove the key before leaving the machine unattended.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.

DX,PARK-19-25NOV25

Observe the Maximum Transport Speed



BML019381—UN—04APR22

Maximum Transport Speed—3100FT

The maximum transport speed for this implement is 20 km/h (12.5 mph).

Some tractors are capable of operating at speeds that exceed the maximum transport speed of the implement. Regardless of the maximum speed capability of the tractor being used to tow this implement, do not exceed the maximum transport speed of the implement.

Exceeding the maximum transport speed of the implement results in:

- Loss of control of the tractor/implement combination.
- Reduced or no ability to stop during braking.
- Implement tire failures.
- Damage to the implement structure or its components.

Use additional caution and reduce the speed when towing under adverse surface conditions, when turning, and when on inclines.

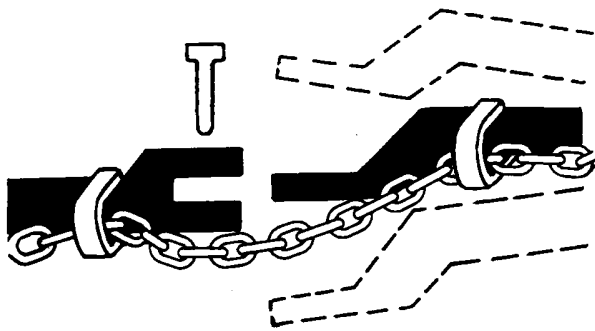
NOTE: Do not transport implement with fertilizer and seed exceeding 1/3 of capacity.

Do not attempt to transport the implement if the implement weighs more than 1.5 times the weight of the tractor.

Never tow the implement with a motor vehicle. Tow only with a properly ballasted tractor.

a3rfgg,1702562093524-19-31JUL24

Use a Safety Chain



TS217—UN—23AUG88

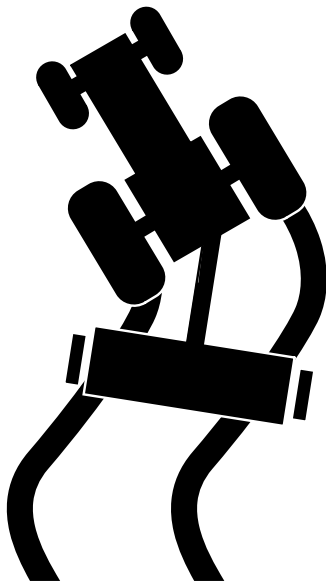
A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location. Provide only enough slack in the chain to permit turning.

Use chain with a strength rating equal to or greater than the gross weight of the towed machine. Do not use safety chain for towing.

DX,CHAIN-19-03MAR93

Transport Safely



TS1686—UN—27SEP06

During field transport, do not transport planter with fertilizer and seed exceeding 1/3 of capacity.

For road transport with a truck, never transport the planter with commodities in tanks.

Always travel at a reasonable and safe speed. Observe Maximum Transport Speed.

For stability and operator safety, the tractor must be properly ballasted.

Know the transport height and width of the planter.

Tractor brakes must be latched together.

Shift the tractor into a lower gear when transporting down steep slopes or hills.

Always use tractor's flashing warning lights, both day and night, when transporting.

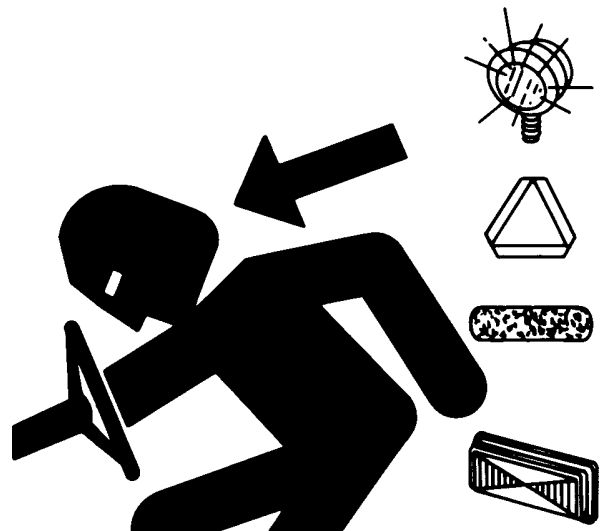
Keep all the reflective material clean and visible.

Do not transport this planter on a public roadway.

The construction of this planter may not meet all local or national requirements for transport on a public roadway. The customer is responsible for understanding and complying with all local, regional, and national requirements regarding roadway transport.

a3rfggt,1726754660985-19-09OCT24

Use Safety Lights and Devices



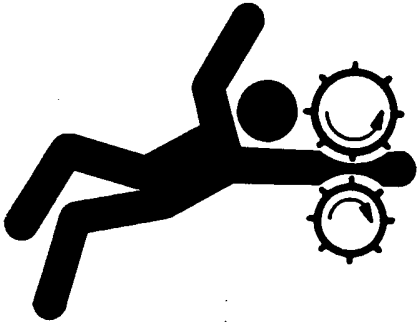
TS951—UN—12APR90

Prevent collisions between other road users, slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn signal lights.

Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost.

DX,FLASH-19-07JUL99

Service Machines Safely



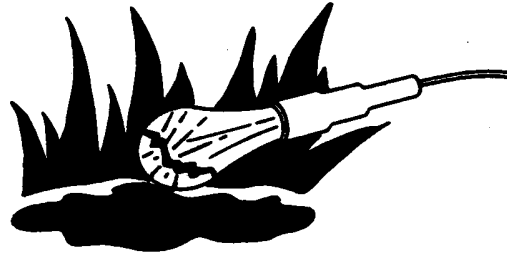
TS228—UN—23AUG88

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.

DX, LOOSE-19-04JUN90

Illuminate Work Area Safely

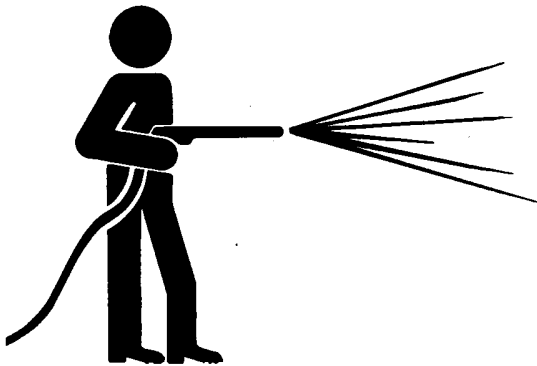


TS223—UN—23AUG88

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

DX, LIGHT-19-04JUN90

Work in Clean Area



T6642EJ—UN—18OCT88

Before starting a job:

- Clean work area and machine.
- Make sure you have all necessary tools to do your job.
- Have the right parts on hand.
- Read all instructions thoroughly; do not attempt shortcuts.

DX, CLEAN-19-04JUN90

Use Proper Tools



TS779—UN—08NOV89

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

DX, REPAIR-19-17FEB99

Practice Safe Maintenance



TS218—UN—23AUG88

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing away from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine and secure the machine. If equipped, remove the key, disconnect the battery, and allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

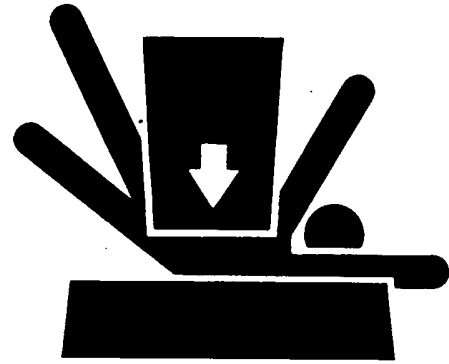
On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX,SERV-19-20JAN26

Support Machine Properly



TS229—UN—23AUG88

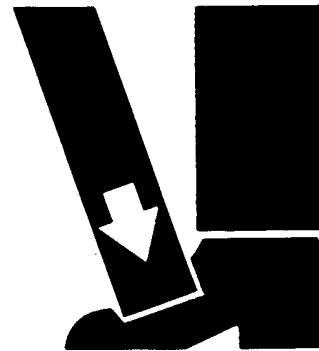
Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack. Follow recommended procedures in this manual.

When implements or attachments are used with a machine, always follow safety precautions listed in the implement or attachment operator's manual.

DX,LOWER-19-24FEB00

Use Proper Lifting Equipment



TS226—UN—23AUG88

Lifting heavy components incorrectly can cause severe injury or machine damage.

Follow recommended procedure for removal and installation of components in the manual.

DX,LIFT-19-20DEC24

Store Attachments Safely



TS219—UN—23AUG88

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death.

Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.

DX,STORE-19-03MAR93

Remove Paint Before Welding or Heating



TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Remove paint before heating:

- Remove paint a minimum of 100 mm (4 in.) from area to be affected by heating. If paint cannot be removed, wear an approved respirator before heating or welding.
- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.

Do not use a chlorinated solvent in areas where welding will take place.

Do all work in an area that is well ventilated to carry toxic fumes and dust away.

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

Avoid Heating Near Pressurized Fluid Lines

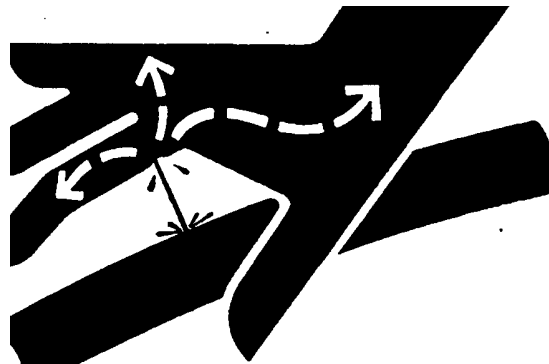


TS953—UN—15MAY90

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

DX,TORCH-19-10DEC04

Avoid High-Pressure Fluids



X9811—UN—23AUG88

Inspect hydraulic hoses and steel piping periodically—at least once per year—for leakage, kinking, cuts, cracks, abrasion, blisters, corrosion, exposed wire braid, or any other signs of wear or damage.

Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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

Avoid the hazard by relieving pressure before

disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

In case of accidental skin injection, seek immediate surgical treatment.

DX,FLUID-19-16MAR26

Service Accumulator Systems Safely



TS281—UN—15APR13

Escaping fluid or gas from systems with pressurized accumulators that are used in air conditioning, hydraulic, and air brake systems can cause serious injury. Extreme heat can cause the accumulator to burst, and pressurized lines can be accidentally cut. Do not weld or use a torch near a pressurized accumulator or pressurized line.

Relieve pressure from the pressurized system before removing accumulator.

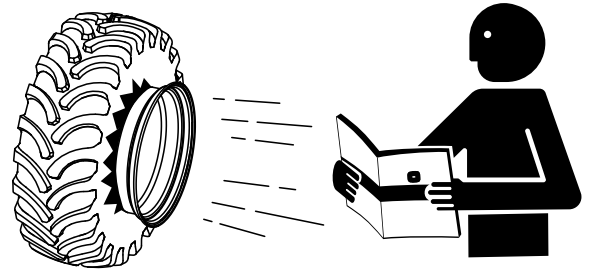
Relieve pressure from the hydraulic system before removing accumulator. Never attempt to relieve hydraulic system or accumulator pressure by loosening a fitting.

Refer to the Technical Manual for information specific to the system being serviced.

Accumulators cannot be repaired.

DX,WW,ACCLA2-19-08APR26

Follow Tire Recommendations



H111235—UN—13MAY14

Keep your machine in proper working order.

Use only prescribed tire sizes with correct ratings and inflate to the pressure specified in this manual.

Use of other than prescribed tires may decrease stability, affect steering, result in premature tire failure, or cause other durability or safety issues.

DX,TIRE,INFO-19-19MAY14

Service Tires Safely



TS952—UN—15APR13

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

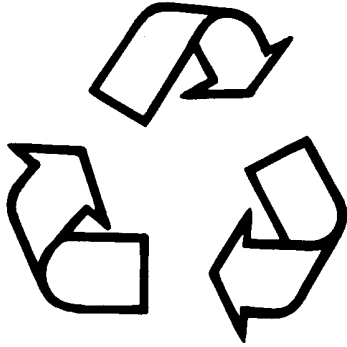
Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

DX,TIRECP-19-24AUG90

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

Safety and environmental stewardship measures must be taken into account when decommissioning a machine and/or component. These measures include the following:

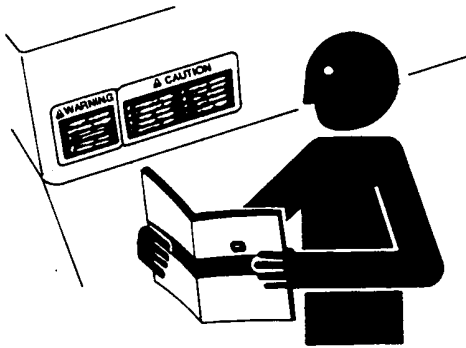
- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting the battery or other electrical power, and releasing pressure in hydraulic components, accumulators, and other similar systems.
- Minimize exposure to components which may have residue from agricultural chemicals, such as fertilizers and pesticides. Handle and dispose of these components appropriately.
- Carefully drain engines, fuel tanks, radiators, hydraulic cylinders, reservoirs, and lines before recycling components. Use leak-proof containers when draining fluids. Do not use food or beverage containers.
- Do not pour waste fluids onto the ground, down a drain, or into any water source.
- Observe all national, state, and local laws, regulations, or ordinances governing the handling or disposal of waste fluids (example: oil, fuel, coolant, brake fluid); filters; batteries; and, other substances or parts. Burning of flammable fluids or components in other than specially designed incinerators may be prohibited by law and could result in exposure to harmful fumes or ashes.
- Service and dispose of air conditioning systems appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.
- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.

- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

Safety Signs

Replace Safety Signs



TS201—UN—15APR13

Replace missing or damaged safety signs. Use this Operator's Manual for correct safety sign placement. Keep safety signs clean and visible.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this Operator's Manual.

DX,SIGNS-19-19MAR26

Pictorial Safety Signs

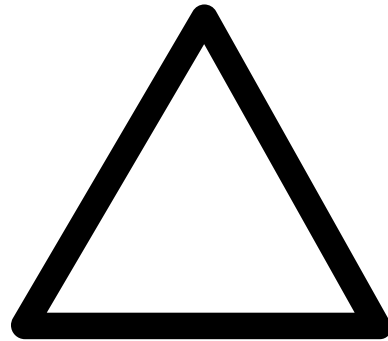


TS231—19—07OCT88

At several important places on this machine safety signs are affixed intended to signify potential hazards. The hazard is identified by a pictorial in a warning triangle. An adjacent pictorial provides information how to avoid personal injury. These safety signs, their placement on the machine and a brief explanatory text are shown below.

ph5u3bx,1729183826641-19-17OCT24

Recognize Safety Information



T8130000497—UN—14FEB13

Figure A



T8130000498—UN—14FEB13

Figure B

Figure A: This symbol is used for a specific hazard as shown with a picture in the center of the triangle.

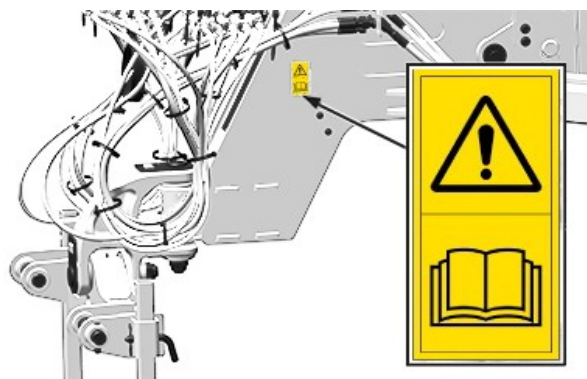
Figure B: This symbol is used for a general alert.

The additional blocks of the safety sign are pictures of action to take to avoid the hazard.

ER40675,0001038-19-05MAR20

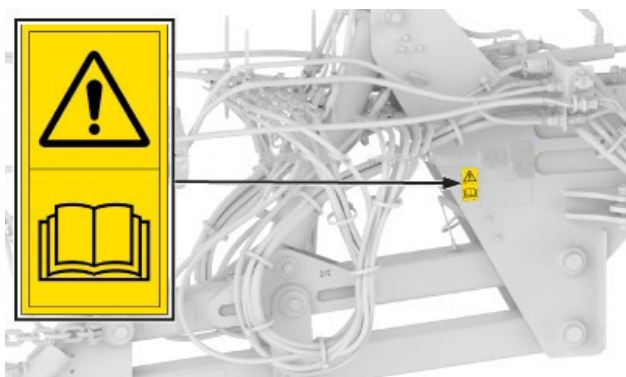
Safety Signs Location

Operator's Manual



CQ1379344—UN—17OCT24

Two-point Hitch Option



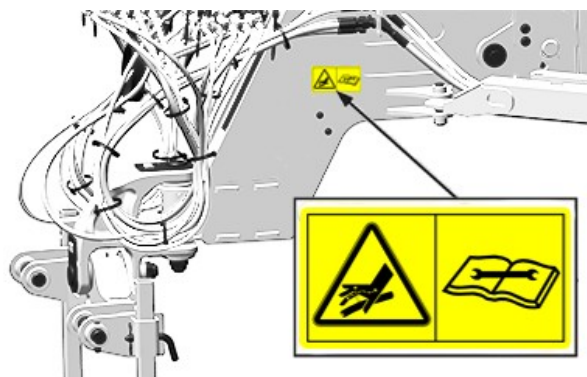
CQ1379345—UN—10OCT24

Drawbar Option

This Operator's Manual contains important information necessary for safe machine operation.

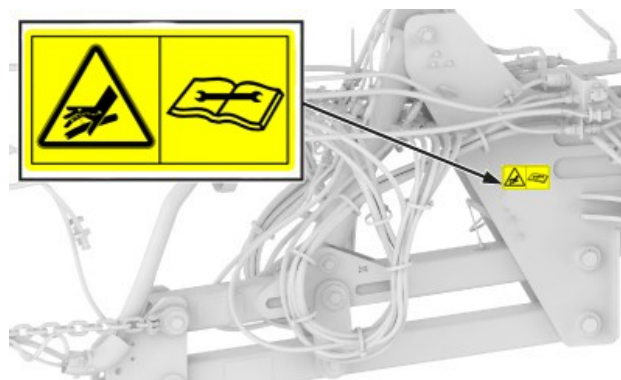
Carefully observe all safety rules to avoid accidents.

High-Pressure Fluids



CQ1380628—UN—23OCT24

Two-point Hitch Option



CQ1380629—UN—23OCT24

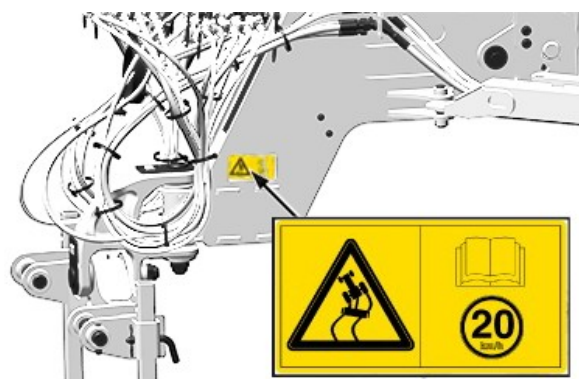
Drawbar Option

Avoid serious injury from injection of pressurized hydraulic fluid.

Always relieve pressure before performing service or maintenance on any hydraulic components. Refer to tractor and implement Operator's Manuals.

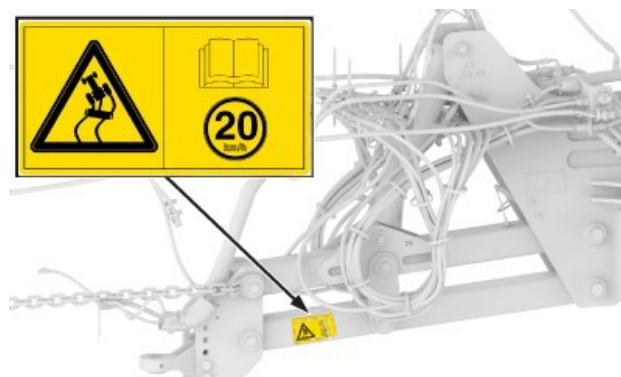
Do not use hand to search for leaks. Use cardboard or similar material.

Transport Guidelines



CQ1379349—UN—17OCT24

Two-point Hitch Option



CQ1379350—UN—10OCT24

Drawbar Option

Do not exceed maximum transport speed of 20 km/h (12.5 mph). Exceeding this speed may result in loss of control during transport or braking and serious injury or death.

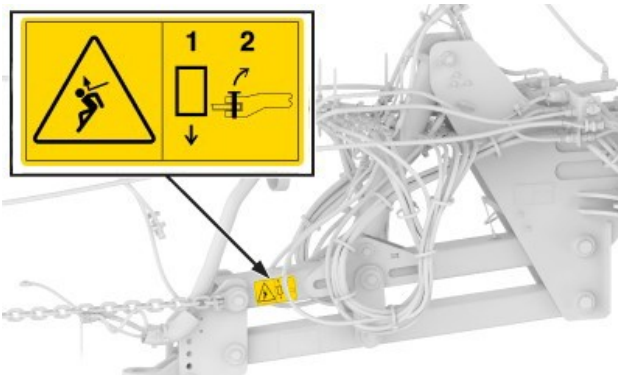
Do not transport implement with fertilizer and seed exceeding 1/3 of capacity.

Transport only with a properly ballasted tractor and a properly attached safety tow chain.

Do not transport with a motor vehicle.

Reduce speed and use extra caution when driving on inclines, towing under adverse surface conditions, and turning.

Sudden Hitch Movement



CQ1379348—UN—10OCT24

NOTE: If equipped with Drawbar option.

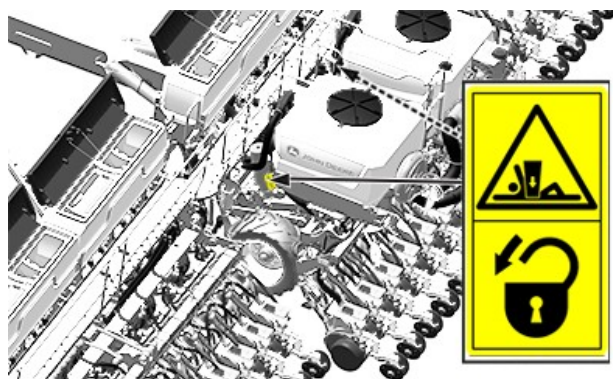
Tongue can whip upward when hitch pin is removed.

To avoid injury, always lower the planter and relieve load on hitch before removing pin.

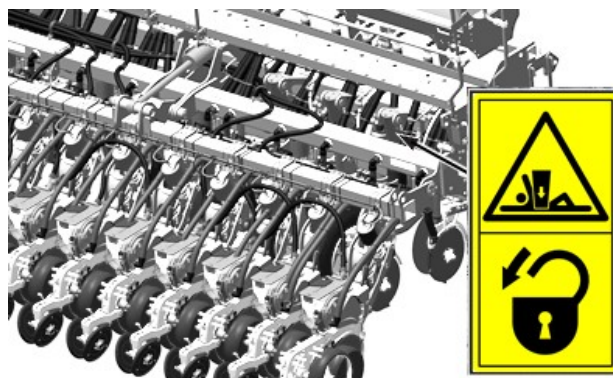
Pin may come out of hitch if not locked.

Be sure the pin is correctly placed and locked.

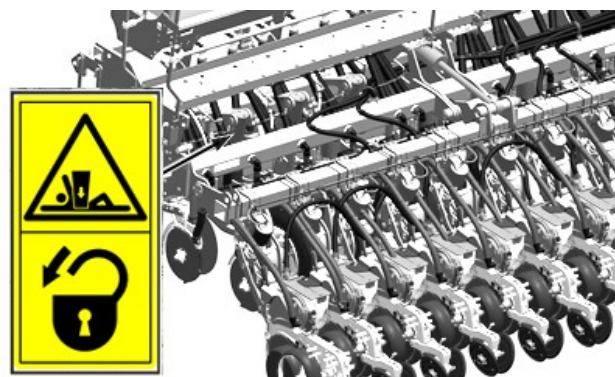
Service Locks



CQ1380630—UN—23OCT24



CQ1380631—UN—23OCT24



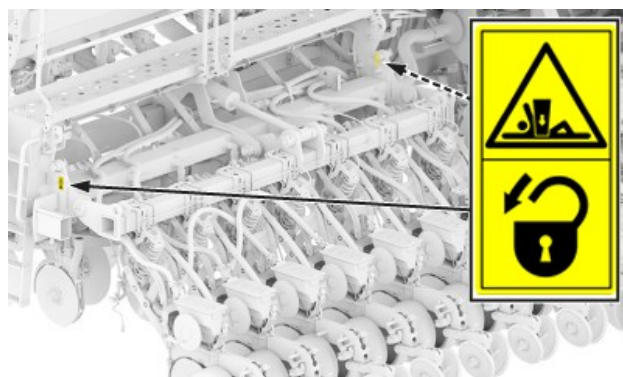
CQ1380634—UN—23OCT24

Avoid risk of injury from crushing.

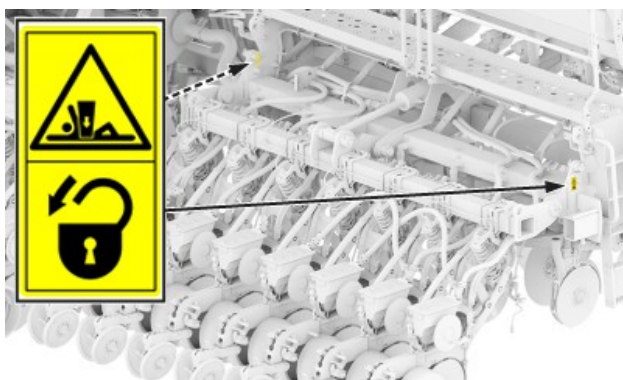
Always install service locks before accessing under the machine.

To install service locks, see Install the Service Locks in Maintenance and Service Intervals section.

Rockshaft Lockout Pins



CQ1380825—UN—24OCT24



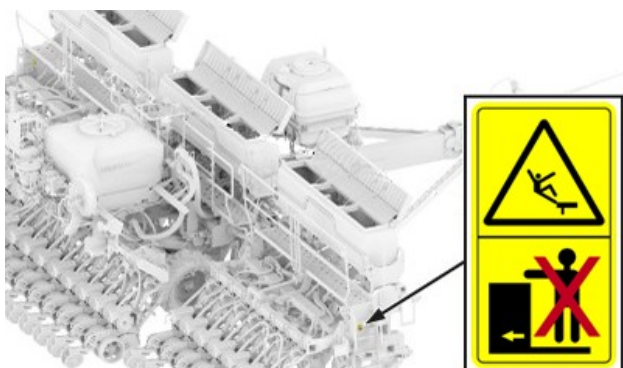
CQ1380826—UN—24OCT24

Avoid crushing injuries from fall or lowering of raised row units.

Always install rockshaft lock-out pins before performing any service under the machine.

Also install rockshaft lock-out pins when storing machine with raised row-units.

Keep Riders Off the Machine



CQ1380635—UN—23OCT24



Avoid serious injury or death from falling.

Do not ride on machine.

CQ1380636—UN—23OCT24

Transition Platform and Handrails



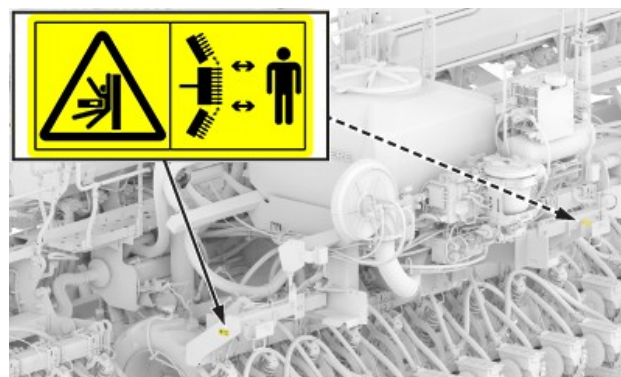
CQ1379359—UN—10OCT24

Avoid crushing injuries due to movement of transition platform and handrails.

Only access this area when planter is stopped.

Do not ride on platform while machine is moving.

Pivoting and Center Wheel Access Areas



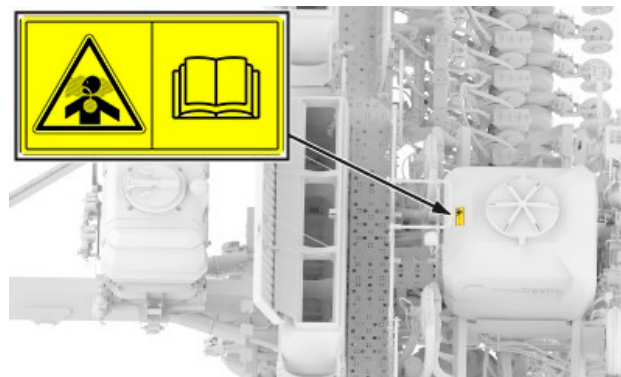
CQ1379360—UN—10OCT24

Avoid crushing injuries.

Stay away of pivoting zone while tractor's engine is running.

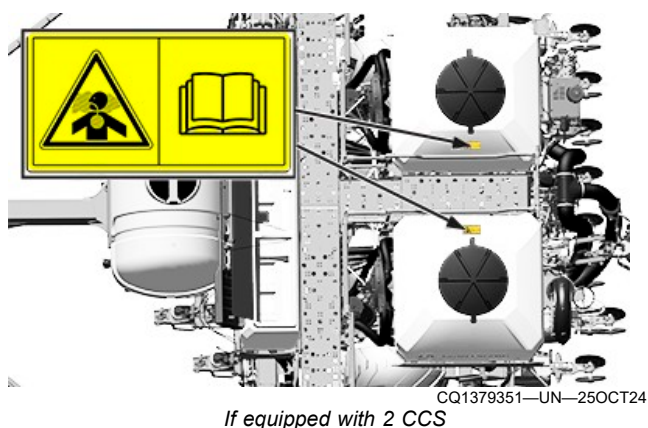
Key off tractor and set park brake before accessing pivoting or center wheel areas.

Exposure to Airborne Chemicals



CQ1370996—UN—25OCT24

If equipped with 1 CCS

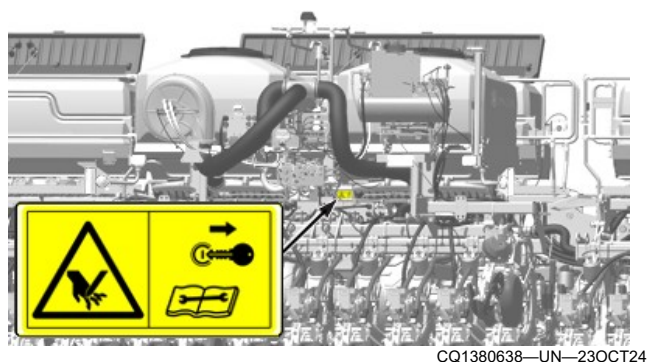


Avoid exposure to chemicals used in seed treatment.

Stop Central Commodity System (CCS) fan before opening lid. This tank may be pressurized. Lid may fly upward if lid is opened while fan is operating. Dust and fumes will be exhausted if tank lid is opened.

Use appropriate personal protection equipment (PPE).

Central Commodity System Agitator

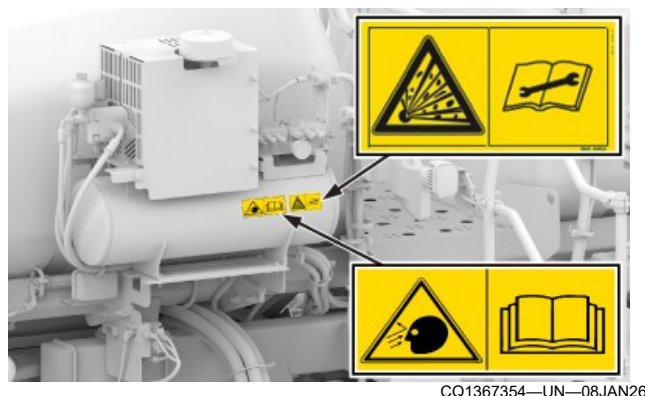


Avoid risk of injury from moving components of CCS agitator.

Turn off CCS agitator, turn off tractor and remove the ignition key before opening or removing guards.

NOTE: Decal is installed on CCS Agitator. If equipped with two CCS units, two decals are installed.

Pneumatic Downforce (PDF) Pressurized System (If Equipped)



This is a high-pressurized system. Protective eye wear should be worn while servicing.

Avoid serious injury from exploding parts due to over pressurization or operating the system without all the components in place.

Relieve the pressure before performing any maintenance or repair.

Do not inflate the single bag system above 827 kPa (8.27 bar) (120 psi). This applies to the fertilizer, coulter, and seed systems.

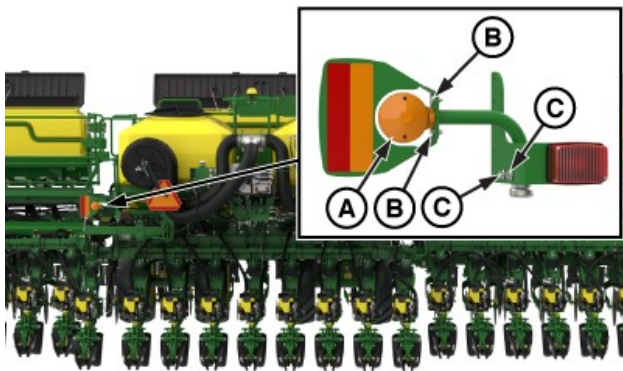
Do not remove the pressure valve.

Do not pressurize the system unless all the row unit components are in place.

PS9EIDU,1772629740616-19-04MAR26

Lights

Amber Warning Light

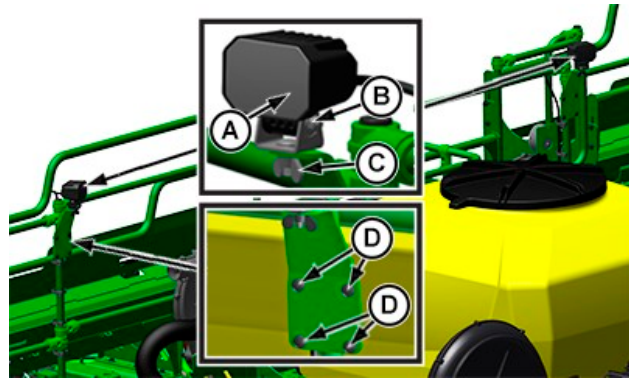


CQ1451600—UN—23MAR26

The planter is equipped with amber warning lights (A).

To replace them, remove the screws (B) and (C), disconnect the connector and replace the entire assembly.

a3rfggt,1702563159693-19-20MAR26



CQ1379215—UN—09OCT24

The planter is equipped with LED lights (A) on the platform handrails.

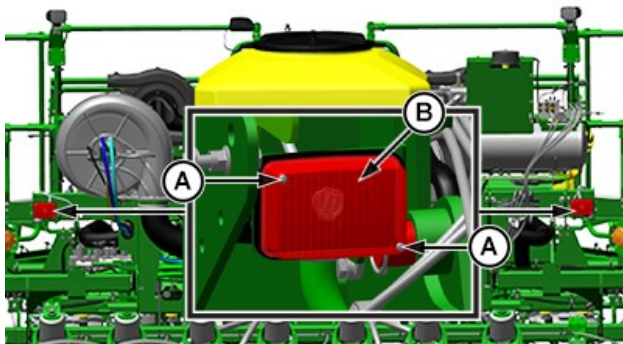
To adjust the lights up or down, loosen the nuts (B). To turn the lights to the left or right-hand sides, loosen the wing screws (C). To adjust the lights position, remove the screws (D).

a3rfggt,1702563159867-19-09OCT24

Rear Lights

NOTE: The functioning of the rear lights varies depending on tractor 7-pin connector model:

- *For tractors equipped with a SAE standard 7-pin connector, the planter rear lights work independently of the brake lights of the tractor.*



CQ1355121—UN—12JUL24

The planter is equipped with rear lights on the frame of the central commodity system (CCS).

To access the bulb, remove the screws (A) and the lens (B).

a3rfggt,1702563159798-19-24JAN24

Worklights

CAUTION: Avoid death or injuries. Do not transport the machine with the worklights on.

NOTE: The tractor worklights must be on for the planter worklights to function.

SeedStar 5

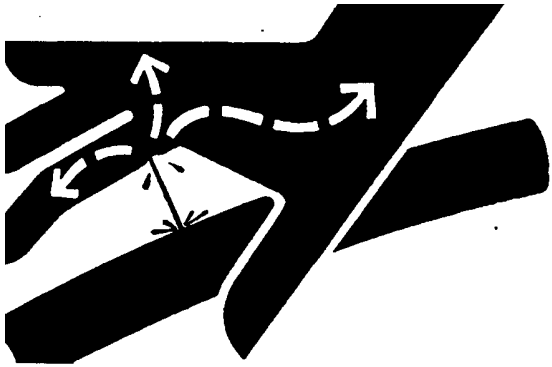
The SeedStar 5 monitoring system works with your display to provide all vital planting information in just one location.

For MaxEmerge 5e and ExactEmerge planters, refer to the SeedStar 5 Operator's Manual for more information.

a3rfggt,1702563475447-19-18DEC23

Attaching and Detaching

Check the Hydraulic System



X9811—UN—23AUG88

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

Relieve the pressure before disconnecting the hydraulic or other lines to avoid this hazard. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect your hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be removed within a few hours or gangrene can occur. Doctors unfamiliar with this type of injury must reference a knowledgeable medical source. Such information is available from Deere & Company Medical Department in Moline, Illinois, U.S.A.

Hydraulic hoses can fail due to physical damage, kinks, age, and exposure. Check your hoses regularly. Replace any damaged hoses.

After applying pressure to the system, check the hydraulic connections and hoses for leaks.

ER40675,0001041-19-05MAR20

Central Commodity System (CCS) Blower, VacuMeter, and PDF Compressor (If Equipped) Hydraulic Motor (Case) Drain Requirements

IMPORTANT: Avoid hydraulic motors damage.

Ensure that tractor case drain has less than 172 kPa (1.72 bar) (25 psi).

Central commodity system (CCS) blower, VacuMeter, and PDF Compressor (if equipped) Hydraulic case drain hose (A) must be attached to low-pressure drain connection prior to any other hose connection.



A53393—UN—25NOV03

The hydraulic motors used on the CCS blower, VacuMeter, and PDF Compressor (if equipped) are low flow, high-pressure motors. The motors are designed to operate on a closed center hydraulic system. Connecting the CCS blower or the VacuMeter to an open center system is not recommended. For more information, contact a John Deere dealer or other service provider.

a3rfggt,1702564245046-19-17JUL25

Central Commodity System (CCS) Blower, VacuMeter, and PDF Compressor (If Equipped) Hydraulic Motor Return Coupler



A53457—UN—02MAR04

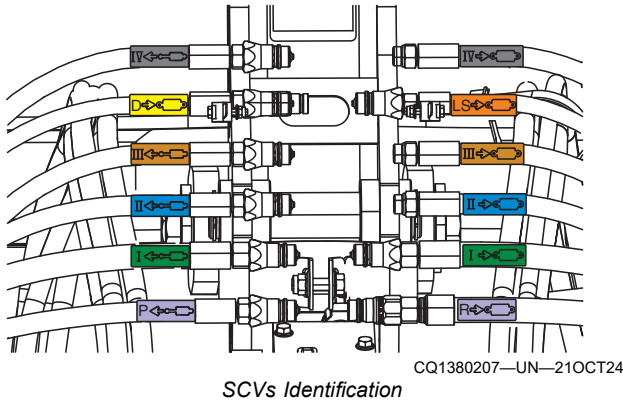
All machines are equipped with a special return coupler on the CCS blower, PDF compressor (If Equipped), and vacuum motor return hoses.

Return couplers are equipped with check valves to eliminate the possibility of turning the motors backwards.

Relieve pressure when shutting off hydraulic motors. Place selective control valve (SCV) in Float position and allow the motors to stop gradually.

a3rfggt,1702564244912-19-01JUL24

Hydraulic Connection Recommendations



For hoses connection, verify markings on the hoses, which indicates the system function activated by the SCV. As well, indicates the hoses connection position recommendation on the tractor SCVs, according to cylinder direction of travel.

Extend and retract symbols are on tractor SCVs dust caps. Refer to the tractor Operator's Manual for specific hydraulic operational details.

IMPORTANT: Case drain hose must be attached prior to any hose being connected.

IMPORTANT: Prevent system malfunction. Connecting the hoses to the wrong connectors causes damage to the hydraulic system.



A64361—UN—11MAR09
Extend Symbol



A64362—UN—11MAR09
Retract Symbol

Hose Connections—3100FT		Function Settings For John Deere Tractors				
SCV	Hose Function	Pressure	Return	Flow ^a	Detent (Time)	Color
I	Wing folding cylinders, wing lift cylinders, central frame lift cylinders, and rockshaft cylinders	Extend	Retract	10 maximum	10 seconds	Green
II	Central Commodity System (CCS)	Retract	Extend	Start at 4 and adjust as necessary	Constant C	Blue
III	Vacuum	Retract	Extend	Start at 2 and adjust as necessary	Constant C	Brown
IV	Hitch lock cylinder, and drawbar cylinder (if equipped)	Extend	Retract	Start at 7 and adjust as necessary	10 seconds	Black
V ^b or Power Beyond	Inoculant tank (if equipped)	Extend P	Retract R	10 maximum NA ^c	Constant C NA ^c	Purple
Power Beyond ^d	PDF compressor (if equipped)	P	R	NA ^c	NA ^c	—
Case Drain	Central commodity system (CCS), vacuum, PDF compressor (if equipped) case drain					
Load Sense (LS)	Planter equipped with pneumatic downforce compressor (PDF), inoculant tank (if equipped)					
Pneumatic Connection	Planter without pneumatic downforce (PDF) compressor					

^aHydraulic system flow on CommandCenter of the tractor: on a scale of 0—10, where 0 is the minimum flow and 10 is the maximum flow.

^bCheck the compatibility between tractor hydraulic system and inoculant tank hydraulic system. For more information, consult the inoculant tank manufacturer.

^cNot applicable.

^dWith Load Sense/See you John DeereDealer for more information.

CAUTION: Hydraulic hoses can fail due to physical damage, kinks, age, and exposure. Check hoses regularly. Replace damaged hoses.

IMPORTANT: Vacuum and Central Commodity System (CCS) RETURN hoses, with special tip, must be connected to the tractor EXTEND port. Avoid damaging pressure spikes. Shut off the vacuum motor by placing SCV lever in float position.



CQ1355386—UN—29DEC23

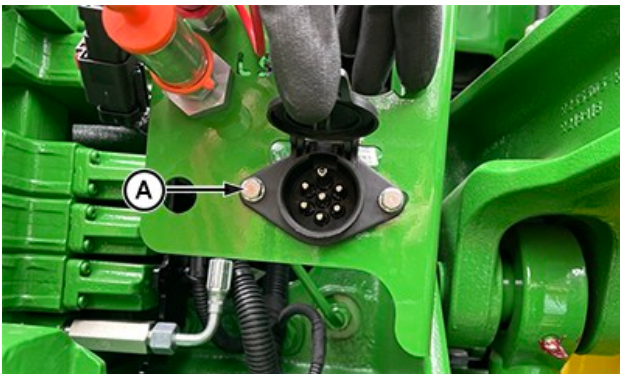
After making the connections between the planter and the tractor, install the spiral tube (A) to fasten the hoses together.

a3rfgg,1702564244403-19-25OCT24

Connect Warning Light Harness

NOTE: Before connecting the 7-pin connector, verify that the pins and connectors are clean and in good condition.

NOTE: Harness locations vary from tractor to tractor.



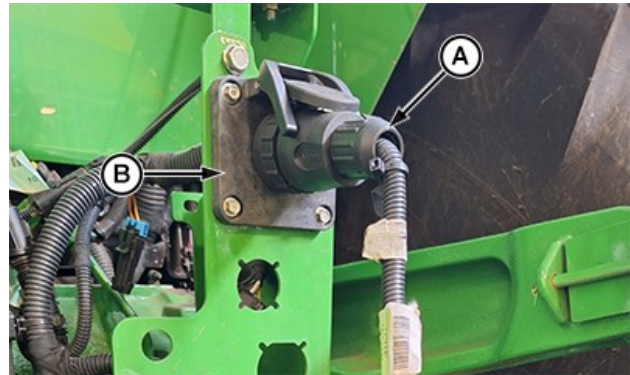
CQ1355387—UN—29DEC23

Attach the light harness to the 7-pin connector (A).

a3rfgg,1702564243658-19-26DEC23

Connect SeedStar Monitor Harness

NOTE: Harness locations vary from tractor to tractor.



CQ1355388—UN—29DEC23

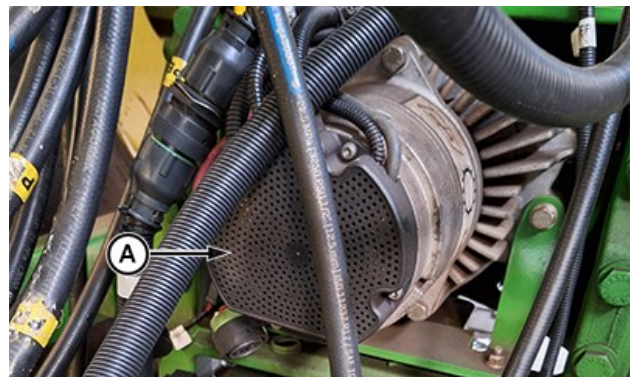
Connect SeedStar monitoring harness (A) to connector (B).

a3rfgg,1702564243455-19-18SEP24

Connect Power Generation Harness

NOTE: Harness locations vary from tractor to tractor.

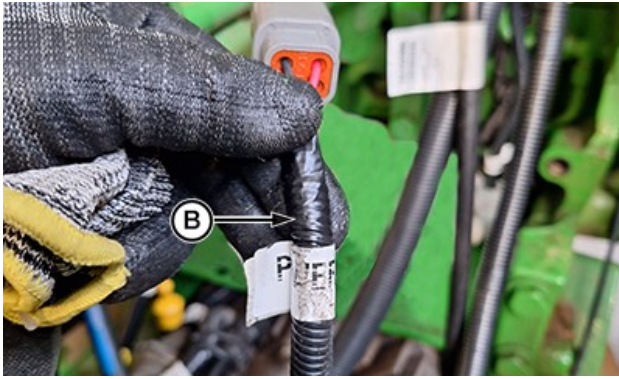
NOTE: Power generation (A) is compatible only with John Deere tractors.



CQ1355390—UN—29DEC23

Power Generation

Connect power generation harness (B).



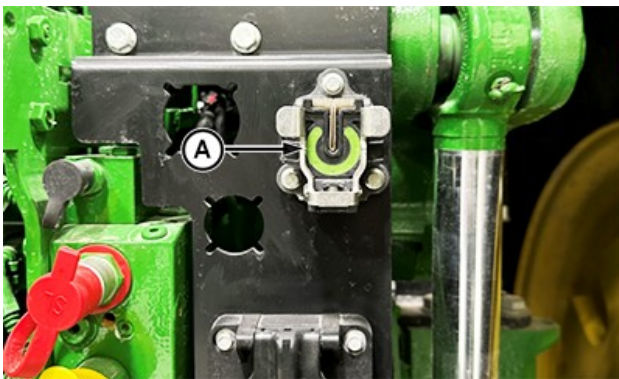
CQ1355393—UN—29DEC23

Power Generation Harness

a3rfgg,1702564510476-19-26DEC23

Connect Ethernet Harness (If Equipped)

NOTE: Harness locations vary from tractor to tractor.



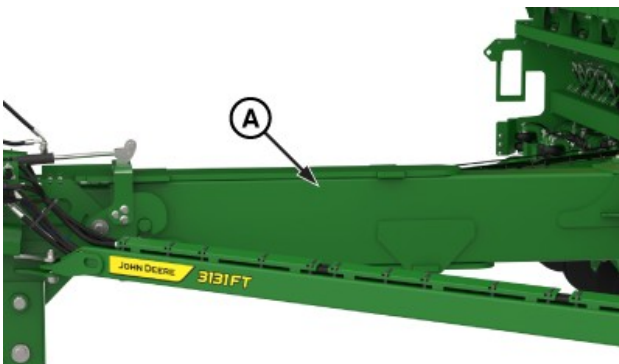
CQ1368675—UN—06JUN24

Attach the ethernet harness to ethernet connector (A).

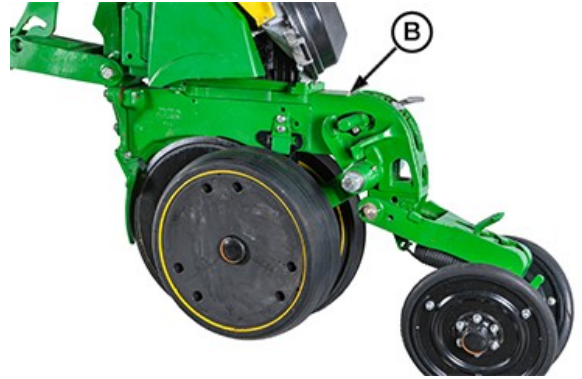
PS9EIDU,1772630309895-19-04MAR26

Level Hitch Tube

Periodically check that hitch tube (A) and planting unit frames (B) are parallel to the ground during operation. If not proceed with following steps.



CQ1451598—UN—23MAR26



CQ1355395—UN—29DEC23

IMPORTANT: Do not lower the machine with zero pressure in the system.

To avoid air springs deformation, maintain a pressure of 0.35—0.56 bar (5—8 psi), which corresponds to 76—120N (17—27 lbf) of downward force on the system.

NOTE: Adjustments are more accurate when performed in field conditions.

1. Verify that planting chocks are installed and in the same quantity. See Adjust the Lift Cylinders Planting Chocks in this manual.
2. Lower machine completely on level ground for 5 seconds to equalize hydraulic system.
3. If equipped with drawbar option retract the drawbar cylinder completely.
4. If equipped with two-point hitch option, refer to the tractor Operator's Manual for procedure to adjust lifting arms.
5. Check if height sensor is calibrated.



CQ1380681—UN—23OCT24

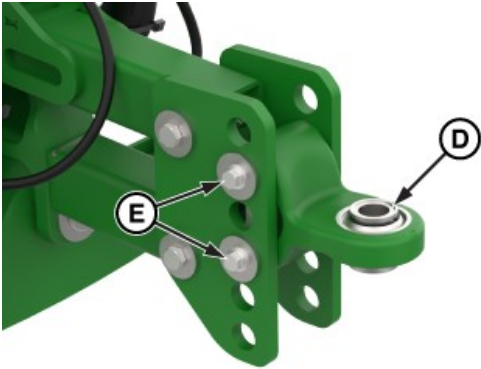
Planter Properly Leveled

6. Verify that hitch tube (A) and parallel arms (B) of the planting rows are 15° inclined to ground (C).
7. If the hitch still is not parallel:
 - a. If equipped with two-point hitch, repeat the previous procedure.

- b. If equipped with drawbar, proceed with remaining steps.

8. Disconnect clevis from tractor.

NOTE: Turn clevis over for minor adjustment. Move clevis to a new hole for major adjustment.



CQ1451599—UN—23MAR26

9. Remove bolts and nuts (E) and reposition clevis (D) so hitch is parallel to the ground when reattached to the tractor.

IMPORTANT: The bolts must be tightened before load is placed on hitch to obtain accurate torque values.

NOTE: To improve the planter cutting efficiency, clevis (D) should be installed in the upper holes, causing the front of the planter to be lower and increasing the pressure of the discs against the soil.

10. Tighten bolts and nuts (E) to specification.

Bolt — Specification

Hitch Clevis Attaching Bolt and
Nut (E)—Torque. 680 N·m
(501.5 lb·ft)

11. Attach tractor to drawbar, unfold the planter, and put in plant position.
12. Retract the drawbar cylinder completely.
13. Verify that the entire length of hitch tube is parallel with the ground. If the hitch is not parallel, reposition and tighten the clevis until the hitch tube is parallel.
14. If center frame of machine becomes higher or lower than wings during operation, repeat the procedure.

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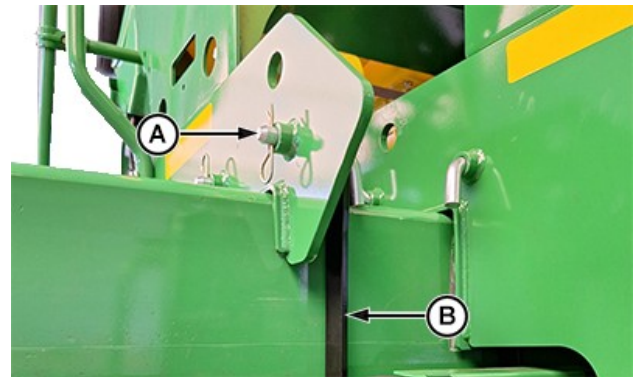
Detach Machine

Drawbar (If Equipped)

CAUTION: Tongue can whip upward when hitch pin is removed. To avoid bodily injury, always fold machine and relieve load on hitch before removing pin.

CAUTION: The machine must be attached and detached on flat terrain. In case of detaching on hilly terrain, the wheels chocks shall be installed to center wheels, and wing wheels.

2. Fold machine. (See Unfold and Fold Planters in Transport section.)
3. Install the U-bracket (B) as shown and secure with pins (A) after locking the wing on hitch tube.



CQ1355509—UN—12JUL24

4. Install lift cylinder service locks. (See Install the Service Locks in Maintenance and Service Intervals section.)
5. Use hydraulic remote control to facilitate detaching.
6. Unlock and remove the hitch pin.
7. Disengage safety chain.
8. Disconnect all wiring harnesses, hydraulic hoses, and pneumatic hoses.

Two-point Hitch (If Equipped)

1. Fold machine. (See Unfold and Fold Planters in Transport section.)
2. Install lift cylinder service locks. (See Install the Service Locks in Maintenance and Service Intervals section.)
3. Disconnect all wiring harnesses, hydraulic hoses, and pneumatic hoses.
4. Place the planter support stand in the lower position.
5. Lower the tractor lifting arms, and check if the hook was unlocked correctly from the pins.

a3rfggt,1702564243286-19-24OCT24

Attach Machine

IMPORTANT: The machine must be attached and detached on flat terrain.

Drawbar (If Equipped)

1. Position the tractor drawbar close to the planter hitch.
2. Connect all wiring harnesses, hydraulic hoses, and pneumatic hoses.
3. Adjust hitch height, using hydraulic remote control.
4. Align drawbar and hitch holes.
5. Install and lock the hitch pin.
6. Engage safety chain.
7. Raise planter.
8. Remove lift cylinder service locks. (See Install the Service Locks in Maintenance and Service Intervals section.)

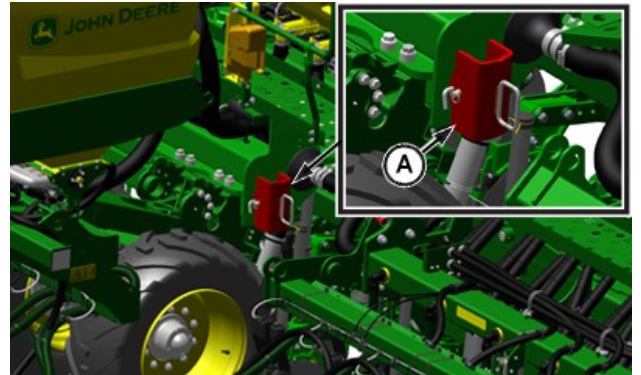
Two-point Hitch (If Equipped)

1. Position the lifting arms of the tractor below the hitch pins of the planter.
2. Ensure that the hooks of the tractor's lifting arms match the diameter of the planter's pins.
3. Slowly reverse the tractor until aligned with the planter.
4. Raise the tractor's lifting arms to connect with the planter. Make sure the hook has properly locked onto the pins.
5. Place the planter support stand in the upper position.
6. Connect the wiring harnesses, hydraulic hoses, and pneumatic hoses.
7. Fully raise the planter.
8. Remove lift cylinder service locks. (See Install the Service Locks in Maintenance and Service Intervals section.)

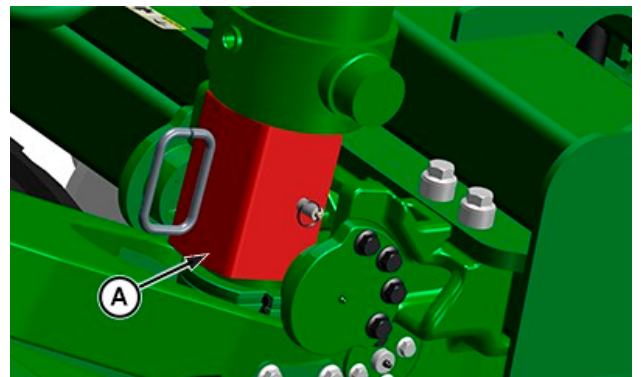
NOTE: If using 9R Tractors, verify the necessity of detaching quick-coupler to avoid problems with hoses.

PS9EIDU,1772630362279-19-16APR26

Lift Cylinders Service Locks Operation



CQ1379936—UN—16OCT24
Service Lock in Center Wheel Support



CQ1371506—UN—03JUL24
Service Lock in Center Wheel Cylinder

The service locks (A) are available on the machine and support the lift cylinders for transportation and servicing.

For removal or installation procedures, see Adjust the Lift Cylinders Chocks in Preparing the Planter section.

a3rfggt,1719425454190-19-24OCT24

Preparing the Tractor

Use Tractor Operator's Manual



TS190—UN—17JAN89

Always refer to the tractor Operator's Manual for specific detailed information regarding the operation of your equipment.

The following tractor-related information uses John Deere tractors to illustrate preparation, attachment, and operational procedures. Use the tractor Operator's Manual for detailed information, as procedures vary by equipment.

a3rfgg,1702570564862-19-14DEC23

Calculate the Minimum Tractor Weight for Safe Transport

CAUTION: Using a tractor ballasted to less than the minimum planter weight can result in loss of control and serious injury or death.

CAUTION: Do not transport planter with fertilizer and seed above 1/3 capacity.

CAUTION: Always refer to the tractor Operator's Manual for further safe transport information.

If a towed load is attached to the rear of the implement, add the weight of the towed load to the total weight of the implement before dividing by 1.5.

Formula: Total Weight of Implement ÷ 1.5 = Minimum Tractor Weight for Safe Transport

a3rfgg,1702570793829-19-23OCT24

Tractor Ballasting Recommendation

NOTE: See the tractor Operator's Manual for more information about ballasting.



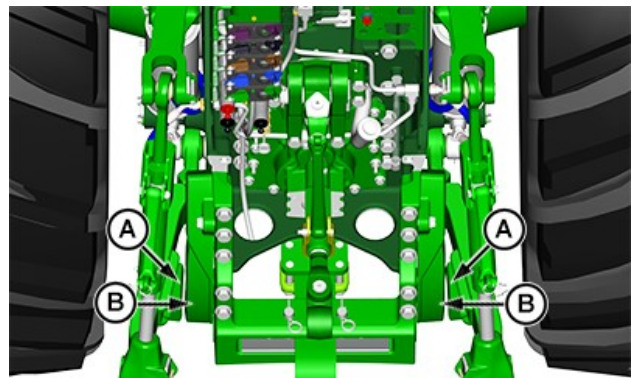
CQ1355661—UN—12JUL24

Properly ballast the tractor to improve stability.

a3rfgg,1702570806034-19-16JAN24

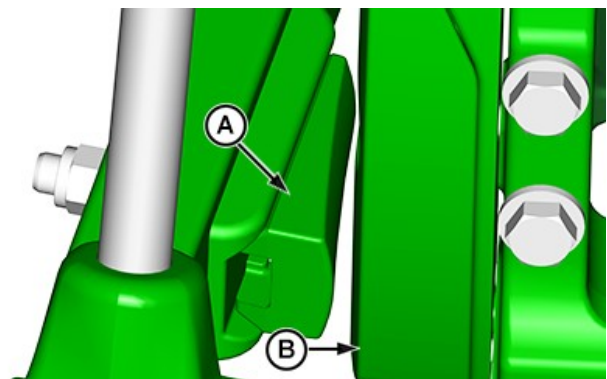
Lifting Arms Adjustments

On planters equipped with two-point hitch, it can be necessary some adjustments on tractor lifting arms to maintain the planter stabilized.



CQ1356817—UN—25JAN24

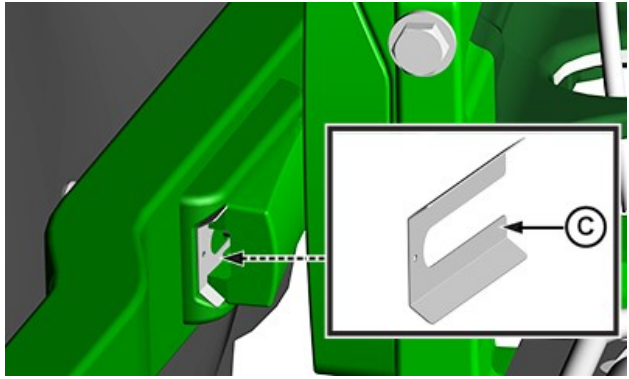
Bumper Location



CQ1356818—UN—25JAN24

Bumper Detail

In lower position, check if bumper (A) and sway block (B) shows wear signs or gap. If they shows, it is recommended to adjust.



Shim Installed

CQ1356820—UN—25JAN24

If necessary, install shim (C) next to bumper (A).

Shim (C) helps to minimize the guess row side effects. (See Guess Row Adjustment in Operating the Planter section.)

NOTE: The number of shim (C) that must be installed may vary according to tractor conditions. For more information, contact a John Deere dealer or other service provider.

NOTE: When transporting the tractor and planter assembly, keep the tractor's hydraulic arms at a minimum level to prevent the tools from coming into contact with the ground, as this contributes to the planter's stability.

PS9EIDU,1773084314701-19-16APR26

Check Tractor Hydraulic System

Planter hydraulic systems are designed to be operated with closed center hydraulic systems. Tractors with load sensing or pressure on-demand hydraulics are classified as closed center systems. Open center hydraulic systems are NOT compatible with this system.

Minimum required hydraulic pressure to operate the planter is 197 bar (2800 psi). Minimum required hydraulic flow is 82.8 L/min (21.9 gpm).

IMPORTANT: Do not use a tractor with open center hydraulic system to operate machine. Permanent damage to the tractor pump can result.

NOTE: Check transmission/hydraulic system oil level before coupling up the planter. After coupling up the planter the oil level may drop, so check oil level again and fill up if necessary. Follow checking and filling procedures in Tractor Operator's Manual.

a3rfggt,1702570846039-19-27DEC23

Installing Ethernet Kit (If Necessary)-Universal Ethernet Kit

For further information on how to install the ethernet kit, consult the installation manual specific according to machine model.

FHSSYU9,1774956671041-19-31MAR26

Tractor Tire Recommendation

Dual rear tractor tires are recommended for stability during operation and planter transport.

a3rfggt,1702570846169-19-18DEC23

Set Tractor Wheel Spacing Row-Crop Tractors

Set tires (center-to-center of tread) accordingly to row width specified in the tractor Operator's Manual, based on the row width of the purchased planter.

a3rfggt,1702570846112-19-23OCT24

Check Tire Inflation

Increasing rear tire pressure can be necessary for increased load carrying. After removing planter, return rear tire pressure to level recommended for optimum traction. Inflate tractor tires as recommended in tractor Operator's Manual.

ER40675,0001044-19-05MAR20

Adjust Efficiency Manager e23 Transmission

NOTE: Check tractor Operator's Manual.



CQ1356261—UN—12JAN24

Full AUTO Mode

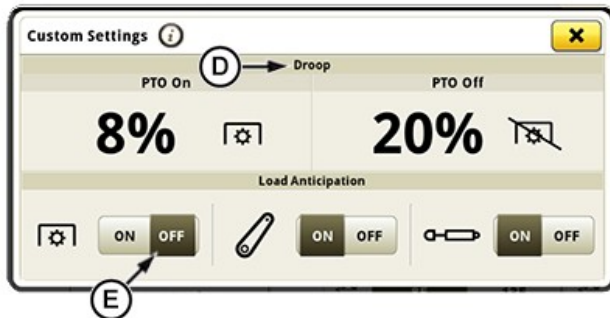
Full AUTO (A) mode is not recommended. On this mode, it is not possible to setting economy rotation and load anticipation. For this reason, the economy rotation can not be maintained when operating the planter. For example, when the PTO is engaged, the rotation

increases way above economy rotation. It becomes a serious problem on 3100 FT planters: because the planter needs that PTO always be engaged, the fuel consumption increases drastically.



Custom Mode

The Custom (B) mode is recommended. On this mode, it is possible to setting economy rotation. For tractors equipped with e23 transmission, it is recommended a 1400 rpm economy rotation. The load anticipation can be setting on Custom Settings (C).



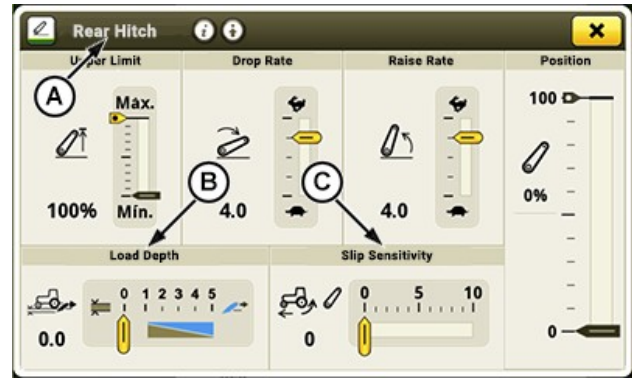
Load Anticipation

Set droop (D) rotation, and shut off the load anticipation (E). Because of that, the rotation do not increases drastically beyond economy rotation, resulting in a low fuel consumption.

a3rfggt.1702571089243-19-07OCT24

Adjust Load Depth and Slip Sensitivity

NOTE: For more informations, see tractor Operator's Manual.

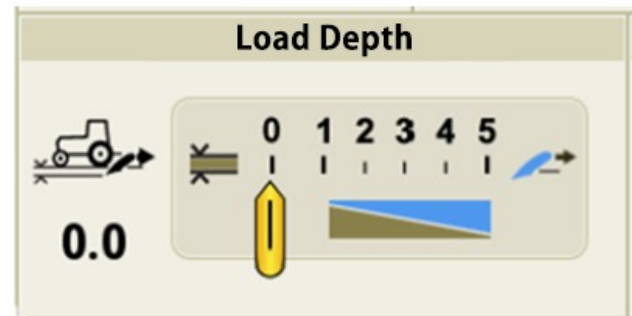


Hitch Screen

CQ1371138—UN—03JUL24

To access load depth (B) and slip sensitivity (C) options, go to rear hitch (A) screen.

Load Depth

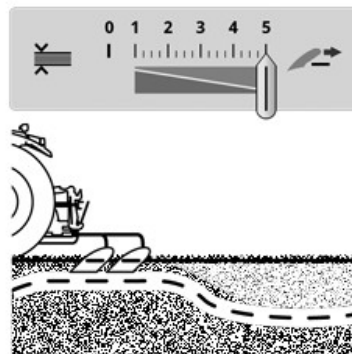


Load Depth

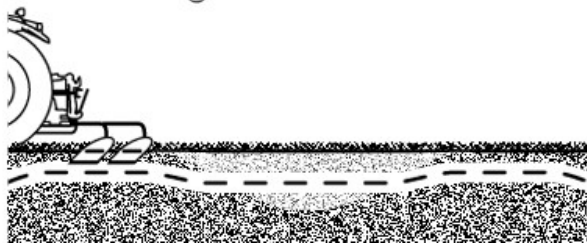
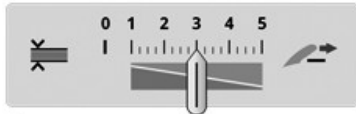
CQ1371139—UN—03JUL24

Load depth setting allows to control the movement of hitch while working. Correct adjustment provides better planter depth control, and more operating efficiency.

Higher load depth values respond better to rolling terrain, but are more sensitive to soil density variation. Lower values stay more consistent with field soil changes, but are less responsive to hills. Ideal setting depends on implement type and field conditions.

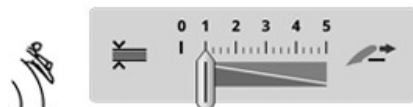


RXA0163993—UN—18JUL18

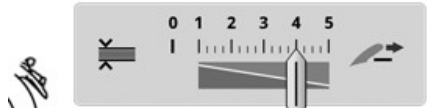


RXA0163994—UN—18JUL18

If Soil Varies, Middle Value Causes Less Depth Variation



RXA0163995—UN—18JUL18



RXA0163996—UN—18JUL18

In Rolling Terrain, High Value Causes Less Depth Variation

Slip sensitivity detects wheel slip, and adjusts hitch accordingly. The lower the setting, the less the hitch reacts to wheel slip. The higher the setting, the more the hitch reacts to wheel slip. Slip sensitivity setting only adjusts hitch up, and takes priority over draft control setting which adjusts hitch down. Appropriate setting depends on implement type, soil conditions, and tractor setup.

a3rfggt,1702571092407-19-17SEP24

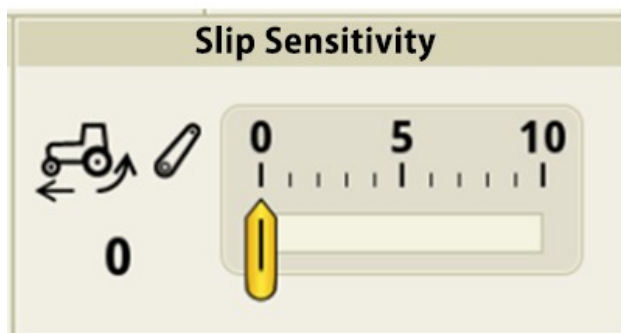
Recommended Tractor Settings

For the complete operating instructions, see Tractors Operator's Manual.

For recommended tractor and coupling settings, see Tractor Requirements in Specifications section.

a3rfggt,1702570934636-19-17SEP24

Slip Sensitivity



CQ1371140—UN—03JUL24

Slip Sensitivity

Preparing the Planter

Initial Use of Central Commodity System (CCS)

The first time the Central Commodity System is used, to coat the system and create a protective inner layer for the hoses, apply a thin layer of graphite powder to the tanks. Also apply a small amount to each line unit mini-reservoir, and turn on the system.

a3rfggt,1702572436511-19-28DEC23

Set Up Planter to a New Crop

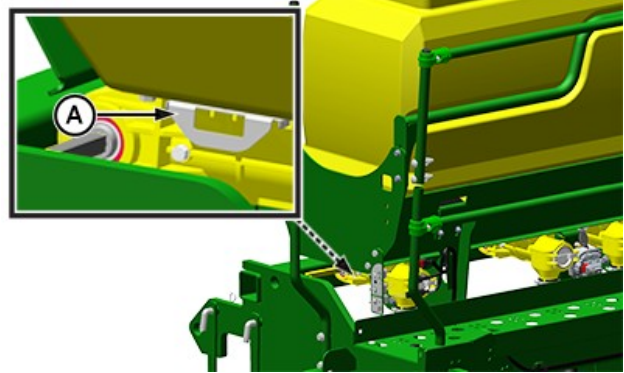
1. Prepare the mini-hopper:
 - a. If planting standard seed sizes, see Preparing Mini-Hopper When Planting Standard Seed Sizes in this section.
 - b. If planting small seed sizes, see Preparing Mini-Hopper When Planting Small Seed Sizes in this section.
2. Fill the central commodity system (CCS) tank. (See Fill the Central Commodity System (CCS) Tank in Operating the Central Commodity System (CCS) section.)
3. Set the pressure of the central commodity system (CCS) tank. (See Set Central Commodity System (CCS) Tank Pressure in Operating the Central Commodity System (CCS) section.)
4. For planters equipped with ExactEmerge seed meter:
 - a. Change the seed meter settings according to the type of crop. (See Seed Meter Settings in Operating the Seed Meter—ExactEmerge section.)
 - b. Adjust the double eliminator. (See Adjust the Double Eliminator in Operating the Seed Meter—ExactEmerge section.)
 - c. Adjust the seed meter hub height. (See Adjust the Seed Meter Hub Height in Operating the Seed Meter—ExactEmerge section.)
 - d. Set the vacuum level. (See Set Vacuum Level in Operating the Seed Meter—ExactEmerge section.)
5. For planters equipped with MaxEmerge 5e seed meter:
 - a. Change the seed meter settings according to the type of crop. (See Seed Meter Settings in Operating the Seed Meter—MaxEmerge 5e section.)
 - b. Adjust the double eliminator. (See Double Eliminator Operation in Operating the Seed Meter—MaxEmerge 5e section.)
 - c. Adjust the seed meter hub. (See Adjust

MaxEmerge 5e Meter Hub in Operating the Seed Meter—MaxEmerge 5e section.)

- d. Set the vacuum level. (See Set Vacuum Level in Operating the Seed Meter—MaxEmerge 5e section.)

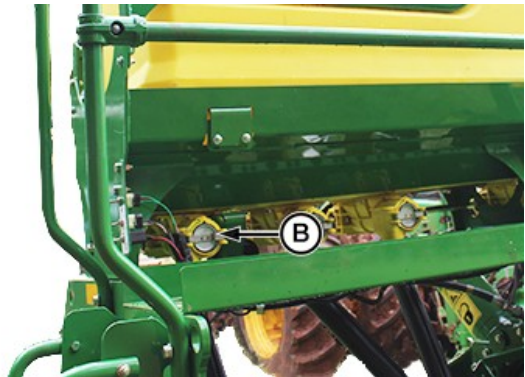
E443CH7,1750689281813-19-07JUL25

Closing the Fertilizer Meter



CQ1379520—UN—13OCT24

Closing the Fertilizer Meter



CQ1356676—UN—15JAN24

Front Cover

Whenever it is necessary to interrupt fertilizer metering in a fertilizer row unit, install cover (A) on the meter that needs to be blocked, as shown.

Remove the spring through front cover (B).

NOTE: Covers (A) are provided in sufficient quantity to enable all possible spacings for each planter model.

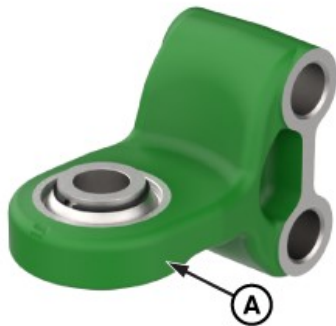
a3rfggt,1702572739802-19-13OCT24

Determine Compatibility of Tractor Drawbar and Implement Clevis

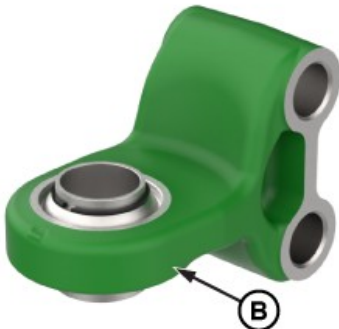
IMPORTANT: Avoid machine damage. Match the tractor drawbar and implement clevis. Refer to tractor Operator's Manual for specific drawbar information.

Do not exceed static vertical load capacity of tractor drawbar. See Specifications section for vertical load and see tractor Operator's Manual for drawbar limits and heavy-duty supports.

Match the tractor drawbar and the implement clevis with the proper category to work.



CQ1451602—UN—23MAR26



CQ1451603—UN—23MAR26

- For 3100FT equipped with two-point hitch or drawbar, it is possible to work with category 4 (A) or category 5 (B).

NOTE: For more informations about tractor drawbar compatibilities, see Specifications section.

PS9EIDU,1774030975174-19-20MAR26

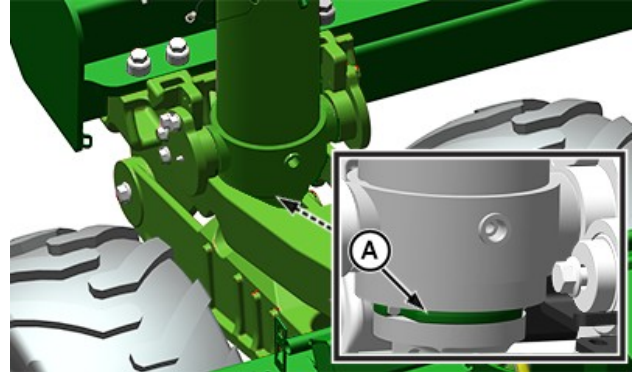
Check Frame Leveling

For more information about frame leveling, see Level Hitch Tube in Attaching and Detaching.

a3rfggt,1702572436661-19-13OCT24

Adjust the Lift Cylinders Planting Chocks

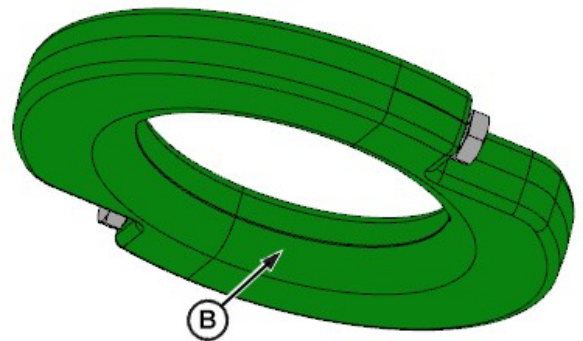
CAUTION: To prevent accidents, lower all row units to the ground before adding the chocks (A).



CQ1379521—UN—13OCT24

Center Lift Cylinder Chock

Add chocks (A) to adjust load on rows and furrow openers, thus transferring part of the machine weight to the wheels.



CQ1380761—UN—24OCT24

Cylinder Chock Mounting Position

Install planting chocks with chamfer face (B) down.

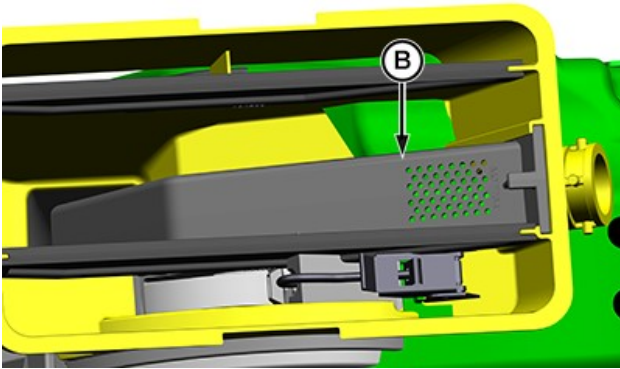
Obey to the following rules:

- The softer the soil the greater the number of chocks (A).
- The harder the soil, the smaller the number of chocks (A).

IMPORTANT: To prevent damage to the cylinder itself, always use one chock (A) at the cylinder. And never use more than two chocks (A) per cylinder.

a3rfggt,1702572436929-19-24OCT24

Preparing Mini-Hopper When Planting Standard Seed Sizes



CQ1355657—UN—12JUL24

Black Discharge Elbow—MaxEmerge 5e



CQ1355658—UN—12JUL24

Black Discharge Elbow—ExactEmerge

1. Install the black discharge elbow (with more holes) (B) on rows with a single inlet elbow.



CQ1355659—UN—12JUL24

Gray Discharge Elbow— MaxEmerge 5e



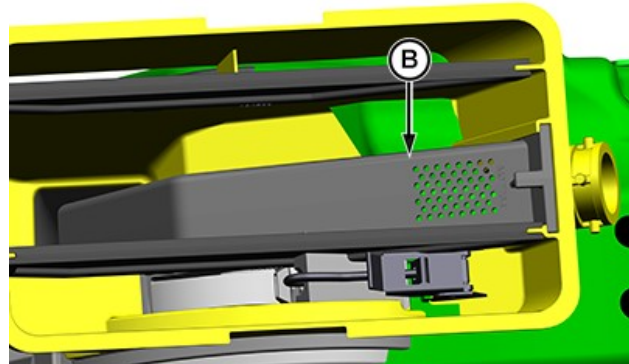
CQ1355660—UN—12JUL24

Gray Discharge Elbow—ExactEmerge

2. Install gray elbow (with lesser holes) (C) on seed rows that have a double input elbow. These rows are responsible for making the derivation of seed for the subsequent row.

E443CH7,1750689310788-19-26JUN25

Preparing Mini-Hopper When Planting Small Seed Sizes



CQ1355657—UN—12JUL24

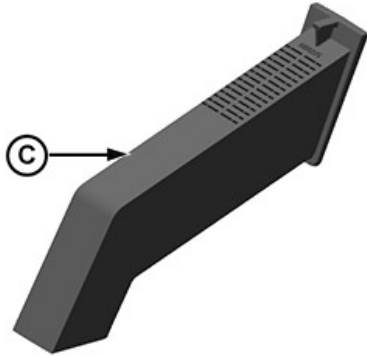
Elbow—Sorghum MaxEmerge 5e



CQ1355658—UN—12JUL24

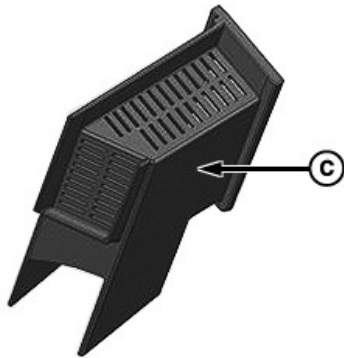
Elbow—Sorghum ExactEmerge

1. Remove the elbow (with small holes) (B) from the seed feeders.



CQ1356681—UN—15JAN24

Elbow—Sorghum MaxEmerge 5e



BM028818—UN—05NOV18

Elbow—Sorghum ExactEmerge

2. Install the elbow (with slotted holes) (C) in the seed feeders.

NOTE: Changing the elbows is optional for small popcorn seeds.

E443CH7,1750689327810-19-26JUN25

Center Wheels Position and Unlocking



CQ1379034—UN—08OCT24

Normal Tires



CQ1379036—UN—08OCT24

Flipped Tires

During planter operation, the position of the center wheels can be adjusted. There are two possible tire positions: normal (A) and flipped (B).

At 45 cm spacing, if necessary, the inner tire can be reversed.

All Flipped

NOTE: If wheels in normal (A) position is compacting the ground over the seed furrow, it is possible to change all wheels to flipped (B) position. To proceed with this procedure, see information in Flip Wheels.

All Normal

NOTE: When transport the machine on truck, it is necessary to flip the outer tires. To proceed with this procedure, see information in Flip Wheels.

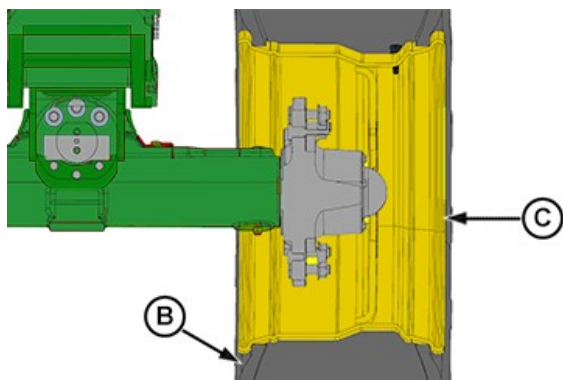
Flip Wheels

CAUTION: Avoid serious injury or death. Park the planter on a level ground, and properly support the machine.



CQ1373845—UN—01AUG24

1. Using a properly support, lift wheel (B).
2. Remove nuts (A).



CQ1380740—UN—23OCT24

3. Remove tire (B) and rim (C) from hub.
4. Flip wheel (B) and rim (C), and install it back to hub.
5. Install nuts (A).

Unlock

For planting operation is necessary to verify if center frame wheel articulation block is in planting position.
(See Transport Section.)

FHSSYU9,1773317501692-19-12MAR26

Tire Inflation Pressure

Tire Pressure			
Tire Size	kPa	bar	psi
Center Frame Tires 400/55 - 22.5 147/159 A8	551	5.5	80
Wing Frame Tires 7.00 - 16 10 PR	689	6.8	100

UZ9X5WJ,1744658346278-19-14APR25

Tractor Power Generation

Tractor Power Generation



A87733—UN—21SEP15

The alternator provides power for the seed meter motors.

The tractor power take-off (PTO) must be engaged and the engine speed must be over 1400 rpm for proper operation and response of the seed meters.

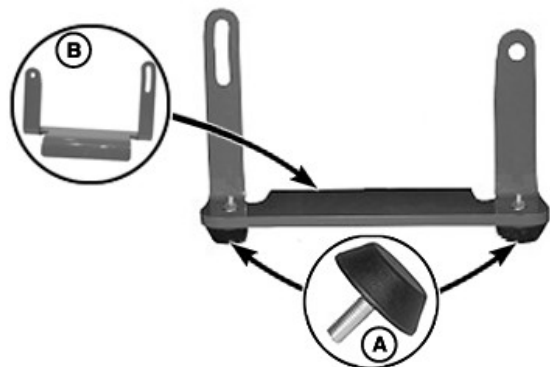
Verify that all the wiring harnesses are connected to the alternator and tractor. The harness on the alternator provides the primary power. The other harnesses connect the tractor monitoring and other functions. (See the SeedStar manual for system operation.)

a3rfggt,1702575061794-19-16JAN24

Install the Tractor Power Generation System on John Deere 8R Tractors

NOTE: The power generation system supports are part of the planter components.

1. Park the tractor on level ground, engage the park brake, stop the engine, and remove the ignition key.



BM018303—UN—19MAR19

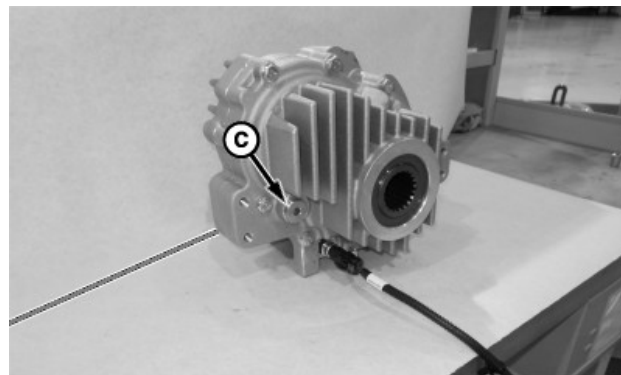
2. Within the kit, identify the support (B) that matches the tractor frame.

NOTE: Only one style of a support bracket is represented in the picture. Other support bracket installations are similar.

3. Install the rubber footings (A).

IMPORTANT: Avoid damage to the sensor. Do not rest the weight of the gear case on the sensor.

IMPORTANT: Avoid damage to the gear case when checking the oil level.



BM028612—UN—28NOV17

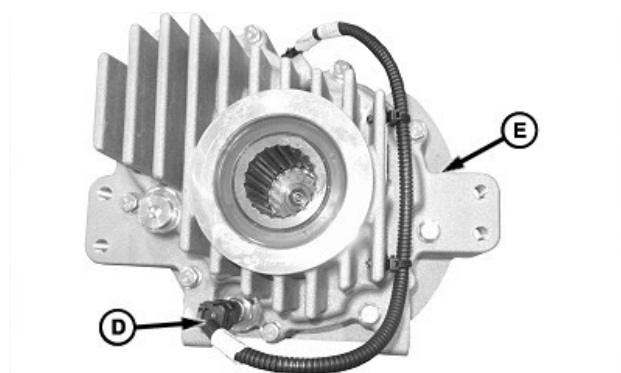
4. Place the gear case on a level surface with the vanes vertical (as shown). Remove the plug (C).
5. Check the oil level in the gear case.
6. Fill the gear case with required oil until it is leveled with the bottom of the fill hole. (See Lubrication section.)

Specification

Tractor Power Generation Gear

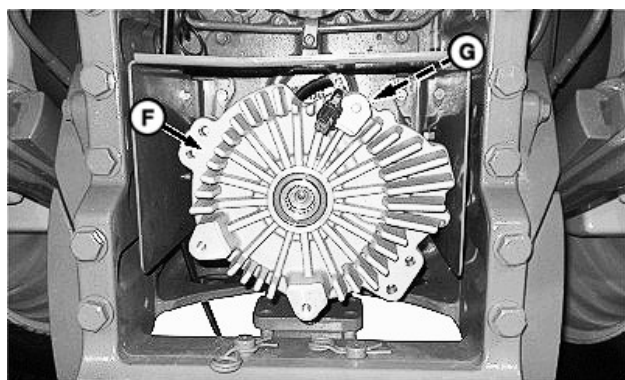
Case—Capacity. 0.5 L
(0.11 gal)

7. Install the plug (C).



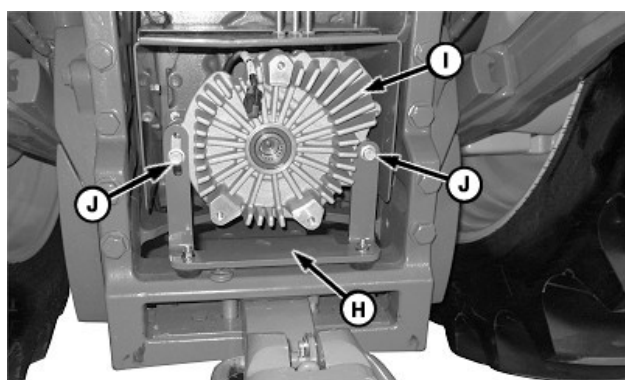
BM028615—UN—28NOV17

8. Install the temperature wiring harness (D) on the gear case (E).



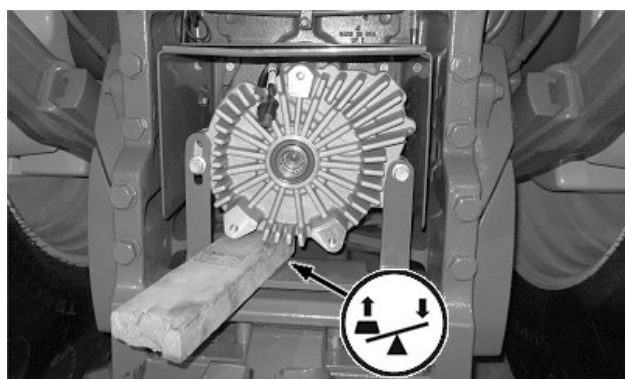
BM028616—UN—28NOV17

9. With the temperature wiring harness positioned behind the gear case as shown, install the gear case (F) onto the power take-off (PTO) shaft (G).



BM028617—UN—28NOV17

10. Align the support (H) with the gear case (I).
11. Install and slightly tighten screws (J). Let them loose enough for gear case adjustment.
12. Slightly pry up on the gear case, push down on the footing bracket, and then tighten the screws (J).



A87030—UN—27JUL16

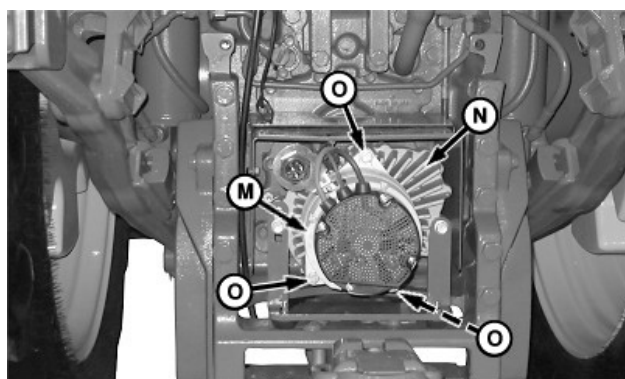
13. Remove the prying device.

IMPORTANT: Avoid damage to the gear and shaft. Lubricate the gear every beginning of season, when the alternator is installed or every 100 hours, whichever comes first.



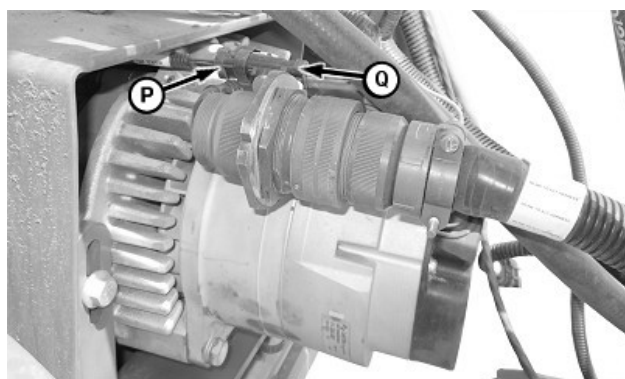
BM028618—UN—28NOV17

14. Lubricate the gear (L) from the alternator (K) with the specified lubricant every time the alternator is installed, or annually, whichever comes first. (See Lubrication section.)



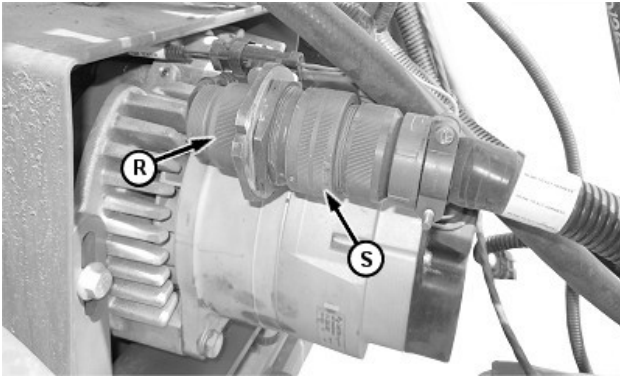
BM028619—UN—28NOV17

15. Install the alternator (M) onto the gear case (N) using the screws (O).



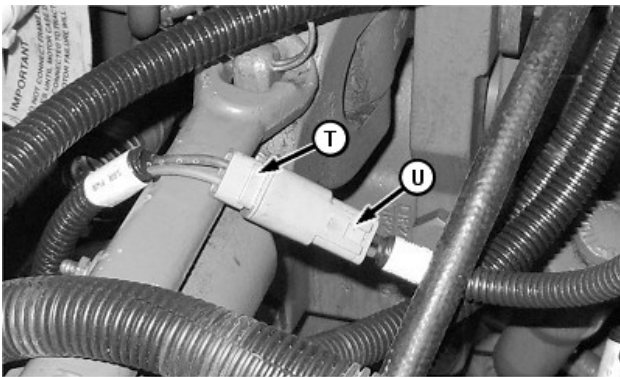
BM028620—UN—28NOV17

16. Connect the temperature wiring harness (Q) to the alternator connector (P).



BM028621—UN—28NOV17

17. Connect the power generation harness (S) to the alternator connector (R).



BM028622—UN—28NOV17

18. Connect the POWER IN wiring harness (T) from the generator to the planter wiring harness (U) from the planter bulkhead.

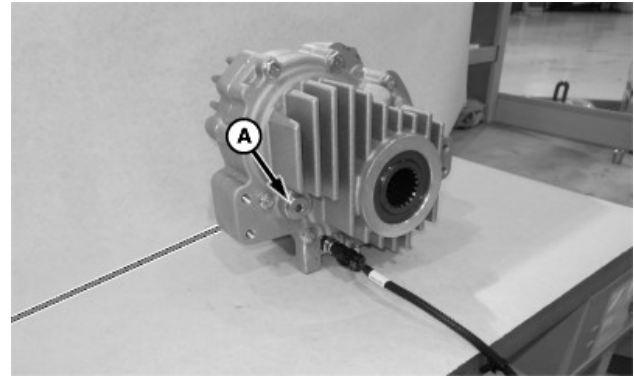
E443CH7,1750694973565-19-26JUN25

Install the Tractor Power Generation System on John Deere 9R and 9RX Tractors

1. Park the tractor on level ground, engage the park brake, stop the engine, and remove the ignition key.

IMPORTANT: Avoid damage to the sensor. Do not rest the weight of the gear case on the sensor.

IMPORTANT: Avoid damage to the gear case when checking the oil level.



A88356—UN—03NOV15

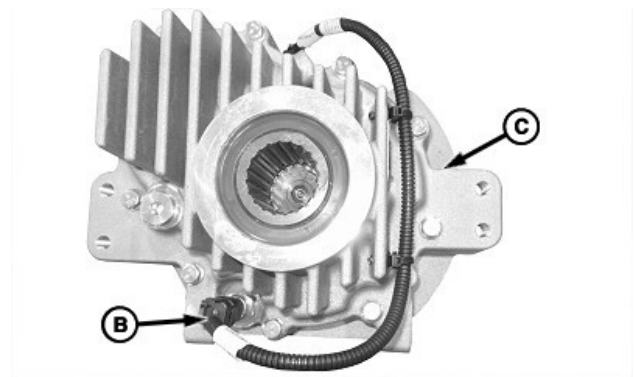
2. Place the gear case on a level surface with the vanes vertical (as shown). Remove the plug (A).
3. Check the oil level in the gear case.
4. Fill the gear case with required oil until it is leveled with the bottom of the fill hole. (See Lubrication section.)

Specification

Tractor Power Generation Gear

Case—Capacity. 0.5 L
(0.11 gal)

5. Install the plug (A).

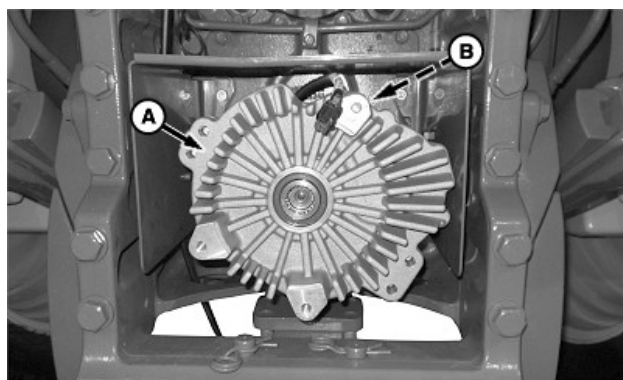


BM044776—UN—10SEP19

6. Connect the temperature harness (B) to the gear case (C).

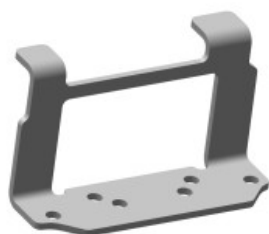
Installation on Tractors with Fixed Drawbar

NOTE: Graphics in this procedure have parts removed for clarity.



A87028—UN—31JUL15

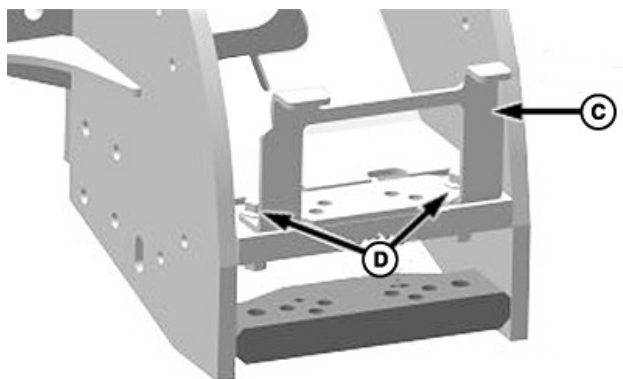
1. With the harness positioned behind the gear case, attach the gear case (A) to the power take-off (PTO) shaft (B).



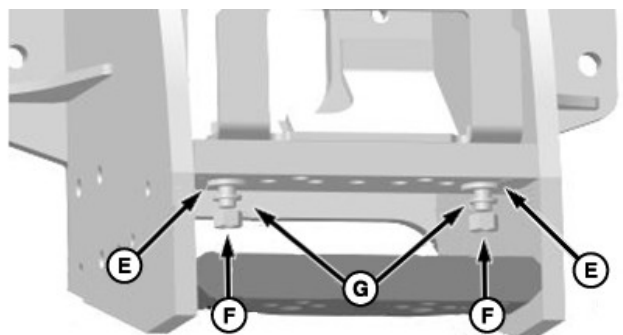
A99938—UN—15MAR18

Fixed Drawbar Support

2. Locate the supplied support.

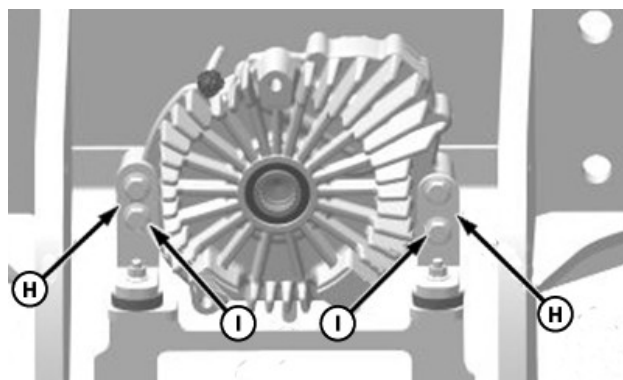


BM044773—UN—10SEP19



BM044778—UN—10SEP19

3. Install the fixed drawbar support (C) using the screws (D), the washers (E and G), and the nuts (F).



BM044779—UN—10SEP19

4. Install the support brackets (H) using the screws (I).

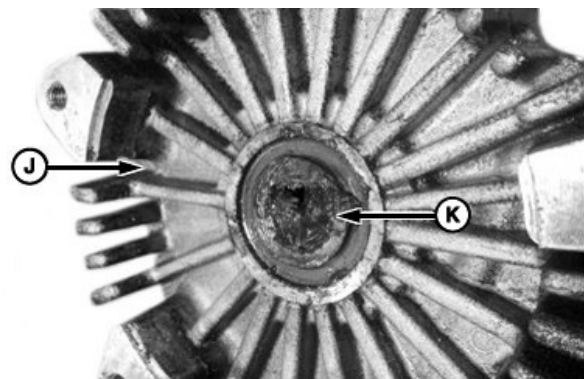
NOTE: Leave the support bracket screws (I) loose enough for gear case adjustment.

5. Slightly pry up on the gear case while pushing down on the support brackets (H). Tighten support bracket screws (I) to specification.

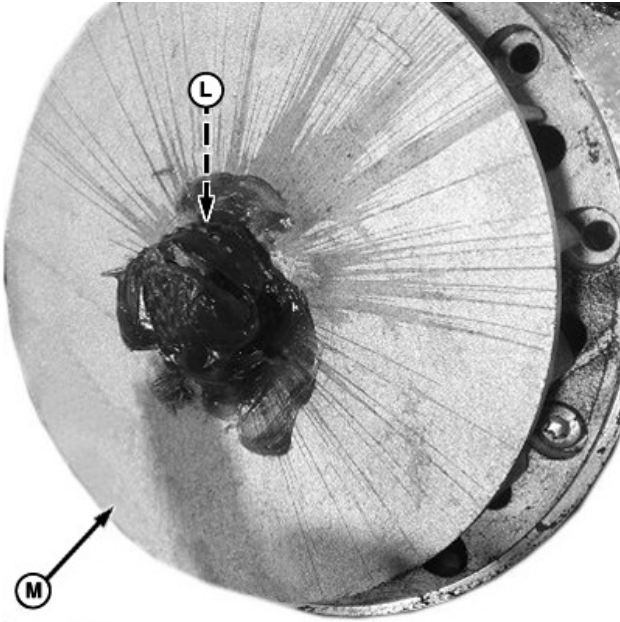
Specification

Support Bracket Screw—Torque
(dry) 70 N·m
(52 lb·ft)

IMPORTANT: Avoid damage to the gear and shaft. Lubricate the gear every time the alternator is installed or annually, whichever comes first.

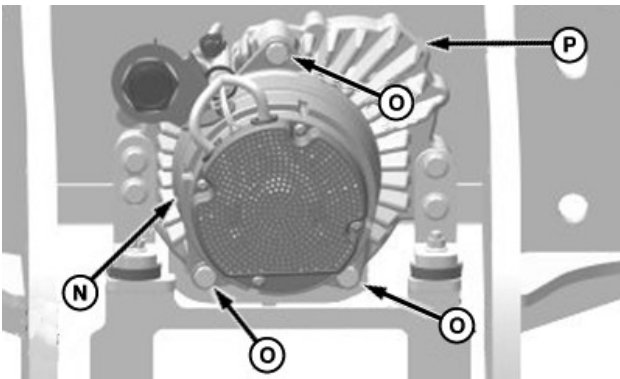


BM044780—UN—10SEP19



BM044781—UN—10SEP19

6. Apply lubricant to the cavity (K) on the gear case (J). Apply an equal amount to the gear (L) on alternator (M). (See Lubrication section for more information.)

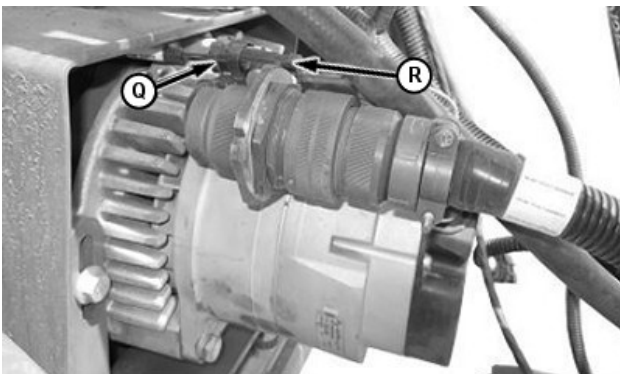


BM044782—UN—10SEP19

7. Attach the alternator (N) to the gear case (P) using screws (O). Tighten to specification.

Specification

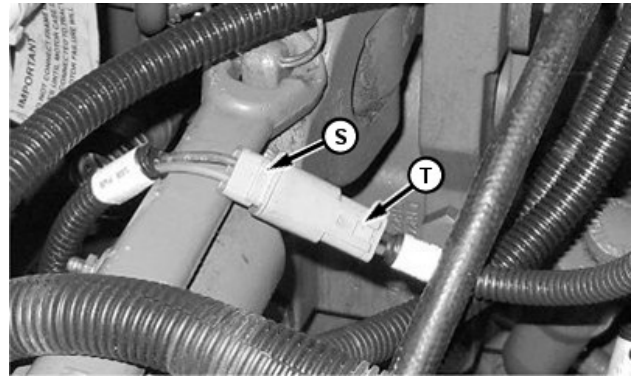
Alternator Screw—Torque (dry). 70 N·m
(52 lb·ft)



BM044783—UN—10SEP19

8. Connect the temperature harness (Q).

9. Connect the power generation harness (R).



BM044784—UN—10SEP19

10. Connect the POWER IN harness (S) from the generator to the implement AUX PWR harness (T) from the implement bulkhead.

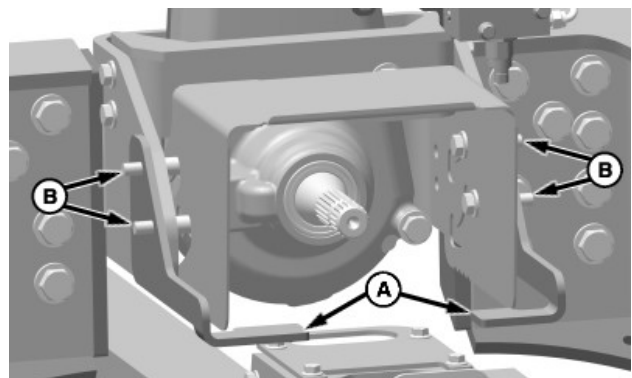
Installation on Tractors with Wide-Swing Drawbar



A99940—UN—15MAR18

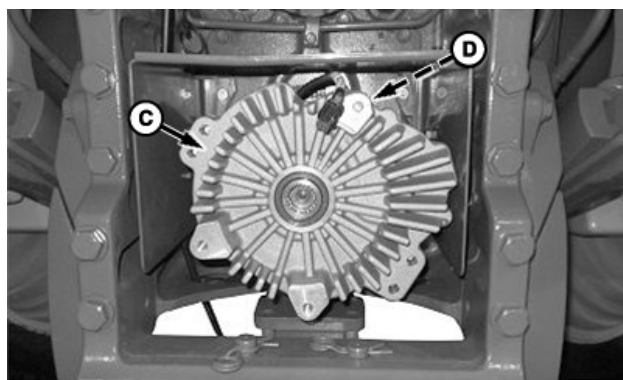
Wide-Swing Drawbar Brackets

1. Locate the supplied brackets.



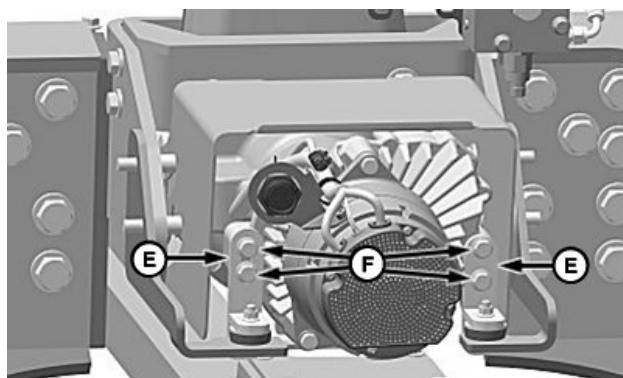
A100398—UN—19APR18

2. Install the brackets (A) using the longer screws (B).



BM044785—UN—10SEP19

3. With the harness positioned behind the gear case, attach the gear case (C) to the power take-off (PTO) shaft (D).



BM044786—UN—11SEP19

4. Install the support brackets (E) using the screws (F).

NOTE: Leave the screws (F) loose enough for gear case adjustment.

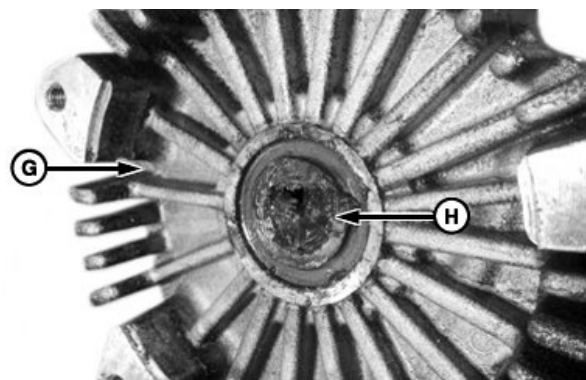
5. Slightly pry up on the gear case while pushing down on the support brackets (E). Tighten the support bracket screws (F) to specification.

Specification

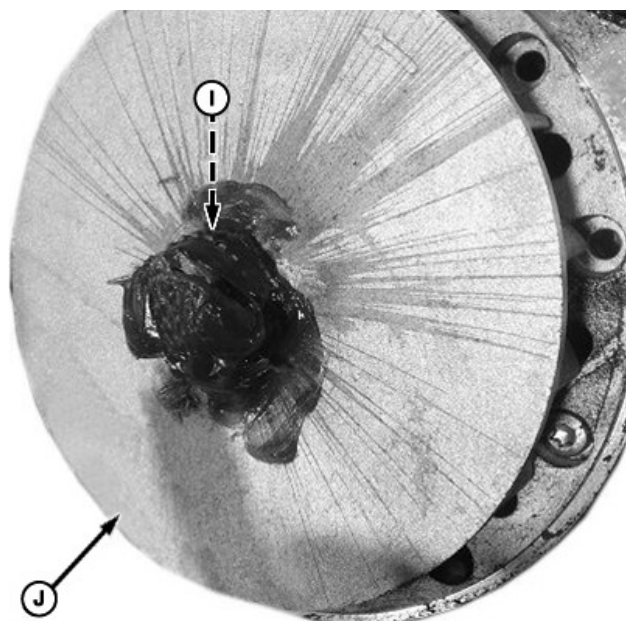
Support Bracket Screw—Torque

(dry). 70 N·m
(52 lb·ft)

IMPORTANT: Avoid damage to the gear and shaft. Lubricate the gear every time the alternator is installed or annually, whichever comes first.

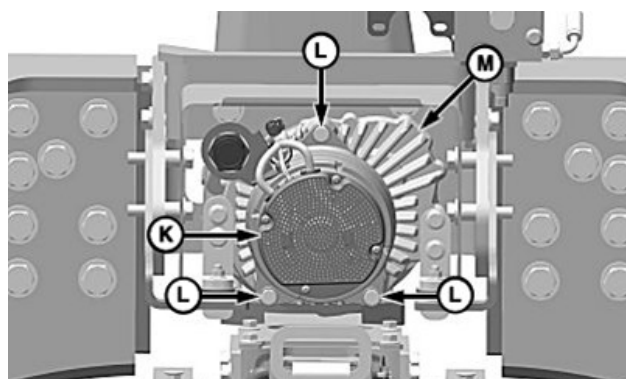


BM044787—UN—10SEP19



BM044788—UN—10SEP19

6. Apply lubricant to the cavity (H) on the gear case (G). Apply an equal amount to the gear (I) on alternator (J). (See Lubrication section for more information.)

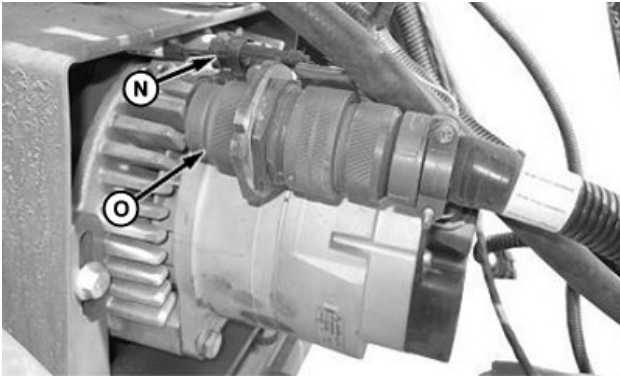


BM044789—UN—10SEP19

7. Attach the alternator (K) to the gear case (M) using the screws (L). Tighten to specification.

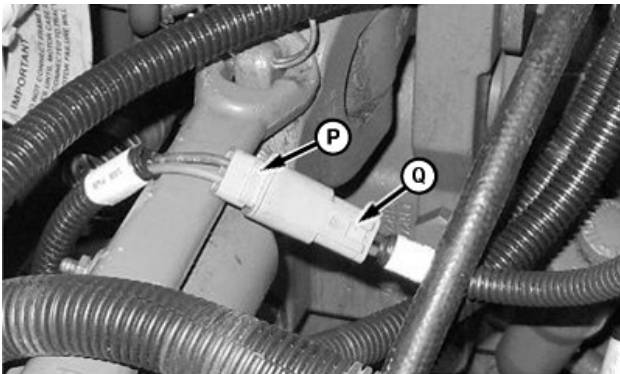
Specification

Alternator Screw—Torque (dry). 70 N·m
(52 lb·ft)



BM044790—UN—10SEP19

8. Connect the temperature harness (N).
9. Connect the power generation harness (O).

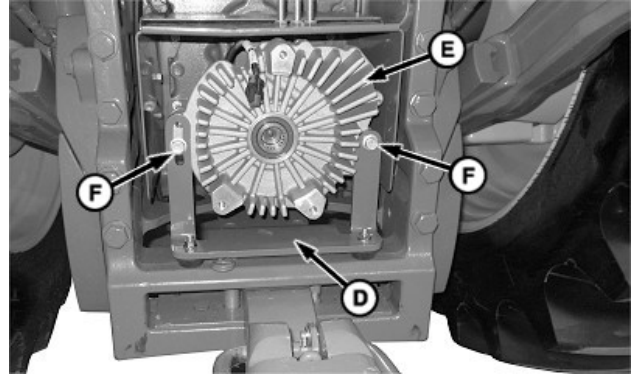


BM044791—UN—10SEP19

10. Connect the POWER IN harness (P) from the generator to the implement AUX PWR harness (Q) from the implement bulkhead.

E443CH7,1750694989756-19-26JUN25

IMPORTANT: Protect the temperature sensor from damage during removal or storage.



BM028623—UN—28NOV17

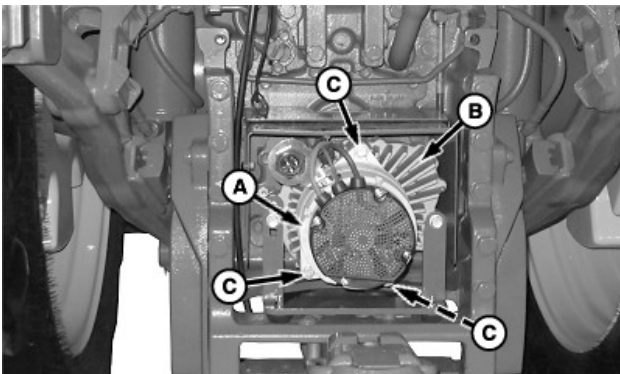
NOTE: Leave the support (D) attached unless there is interference with other attachments.

2. Loosen the screws (F) and remove the gear case (E) from the tractor.
3. Install any components removed earlier when installing the tractor power generation.

ER40675,000036D-19-24OCT24

Remove the Tractor Power Generation System

CAUTION: Avoid serious injury or death. Keep the tractor's Power Take Off shields in place.



A87032—UN—31JUL15

1. Remove the screws (C) and the alternator (A) from the gear case (B).

Operating the Planter

General

IMPORTANT: Do not put the selective control valve (SCV) lever in float position when raising and lowering the implement. The correct procedure is to move the SCV lever to raise or lower position.

To prevent plugging of seed tubes or seed openers, lower the machine when moving forward.

Do not back up with machine lowered.

For proper implement operation, it is important that frame is parallel on ground level, and downforce pressure is adjusted according to the soil condition. If the planter is equipped with ballasting, it is essential to adjust it, to guarantee stability during planting.

- Use recommended size tractor.
- Be sure that the tractor and machine have been properly prepared. (See Preparing the Tractor and Preparing the Planter sections.)
- Check the seed and fertilizer rates recommendations.
- Allow the tractor hydraulic oil to warm up thoroughly before seeding. Cold oil can cause fan to spin slowly.
- Run the central commodity system (CCS) fan at recommended speed. Excessive speed can cause wear on the air system and damage seed.
- If implement has been standing for an hour or more during a period of high humidity, or rainy days, or after sitting overnight, run CCS fan at recommended rotation, with machine stationary for 10 minutes.
- Use clean seed for best results.
- The speed operation must be proper to the ground conditions.

IMPORTANT: Precipitation or debris may enter wings row unit hoppers, meters, and seed tube components while in the folded position. Avoid prolonged storage or transport in conditions where precipitation or debris may enter outer wing row unit hoppers, meters, and seed tube components while in the folded position. Check outer wing row unit hoppers, meters, and seed tube components for any trapped precipitation or debris that may have entered while in folded position. Clean components as necessary before operation.

IMPORTANT: When the planter is stopped on field, it is recommended not to leave it in the transport position.

a3rfggt,1702576385277-19-25OCT24

VacuMeter Hydraulic System Operation

The vacuum motor hydraulic hoses must be connected to the selective control valve (SCV) coupler that corresponds to the retract position.

To engage the vacuum system, move the SCV lever to lower position, in order to retract the cylinder.

To stop the vacuum system, move the SCV lever to float position.

Once the hydraulic vacuum motors and blowers have stopped, place the SCV lever in neutral position.

a3rfggt,1702576385442-19-14DEC23

Frame Controls

See your SeedStar Application Help or the SeedStar Operator's Manual for additional information.

NOTE: Leave the frame in the Transport mode during transport. The Transport mode disables the independent row hydraulic downforce, reduces the downforce to a minimal setting, and avoids trouble codes during transport.

a3rfggt,1702576385681-19-19SEP24

Recommended Operating Speed

With MaxEmerge 5e	
Configuration	Ground Speed km/h (mph)
Chisel	8.0 (5.0)
Double Disk	10.0 (6.2)

With ExactEmerge	
Configuration	Ground Speed km/h (mph)
Chisel	10.0 (6.2)
Double Disk	12.0 (7.5)

IMPORTANT: Avoid adverse effects on seed placement. Do not operate the planter outside of these speed recommendations.

a3rfggt,1702576385793-19-28DEC23

Operate Through Wet Soil

Wet soil should be avoided. If planting in wet soil is necessary and the tractor loses traction, do not extend the wheel cylinders. Extending the wheel cylinders

pushes the wheels further down into the soil and transfers the weight off the rear of the tractor.

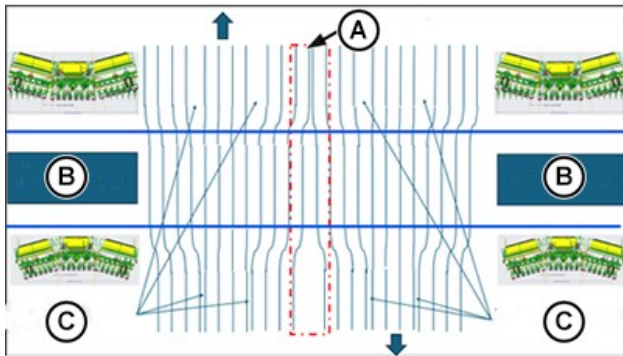
ER40675,0001045-19-06MAR20

Guess Row Adjustments

Guess row (A) is an effect that occurs when the spacing between planting rows varies, and is visible with each pass of the tractor.

This variation is the result of the behavior of the planter's articulated chassis when operating on undulating terrain.

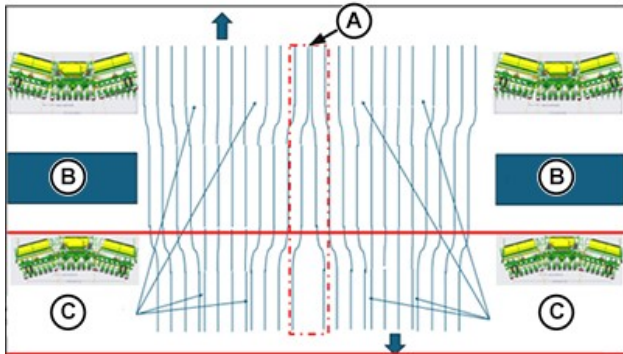
If the planter is leveled on flat ground, the expected behavior of the rows is like this, with no variations in spacing:



CQ1380713—UN—23OCT24

A—Guess Row
B—Leveling Planter
C—Variation Between Central and Wing Rows

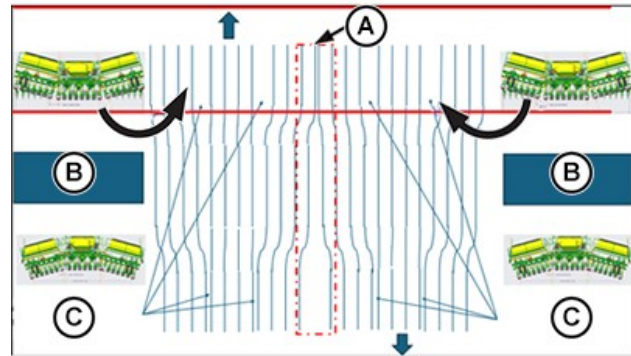
However, on undulating terrain, when the spacing between the center frame and wing lines is reduced, the width of the crazy line increases:



CQ1380714—UN—23OCT24

A—Guess Row
B—Leveling Planter
C—Variation Between Central and Wing Rows

On the other hand, when the spacing between the center frame and wing lines is increased, when the tractor makes a new pass, the width of the crazy line is reduced:



CQ1380715—UN—23OCT24

A—Guess Row
B—Leveling Planter
C—Variation Between Central and Wing Rows

To reduce the effects, follow the steps below:

1. If equipped with two-point hitch, adjust tractor lifting arms. (See Lifting Arms Adjustments in Preparing the Tractor section.)
2. Perform the calibration of the Terrain Compensation Module (TCM).
3. Ensure that the machine offset configuration is correct.
4. Ensure that the StarFire receiver is centered. If not, enter the lateral offset in the settings.
5. If equipped with passive implement guidance, ensure that the receiver is centered. If not, enter the lateral offset in the settings.
6. Ensure that the row spacing is configured correctly.

IMPORTANT: Guess row is an expected effect for plantings conducted on irregular terrain and can only be reduced.

ph5u3bx,1729253790911-19-23OCT24

Adjust Closing Wheel Downforce

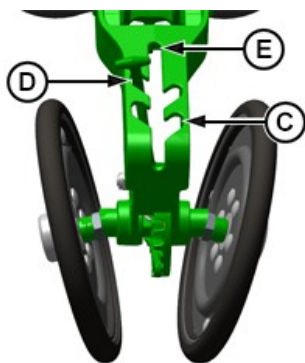
NOTE: The positions of levers must be the same on all closing wheels.



CQ1372787—UN—17JUL24

1. Based on the ground conditions, define the downforce pressure that closing wheels (B) must apply over the seed furrow.

NOTE: The proper amount of downforce closes and firms the seed furrow without compacting the area around the seed.



CQ1379891—UN—16OCT24

2. Pull pressure lever (A) rearward between low-pressure position (D) and high-pressure position (C) to apply the required downforce pressure to the ground. The further back it is moved, the greater the pressure applied.

IMPORTANT: It is necessary to remove the spring when pressure lever (A) is in neutral position (E). Unloaded springs may fall off during planting.

3. Verify that closing wheels (B) are centered over the seed furrow.

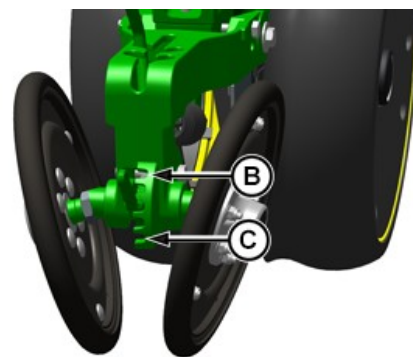
ph5u3bx,1729084126955-19-16OCT24

Adjust Closing Wheel Attack Angle

NOTE: The positions of levers must be the same on all closing wheels.



CQ1355788—UN—12JUL24



CQ1379953—UN—16OCT24

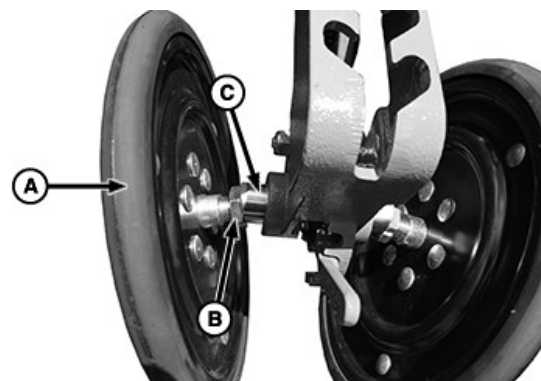
To adjust the wheel attack angle, move lever (A) between high-attack angle position (B) and low-attack angle position (C).

The greater the angle of attack, the more soil will accumulate on top of the furrow.

a3rfggt,1702578738317-19-16OCT24

Adjust the Distance Between Closing Wheels

CAUTION: Avoid serious injury or death. Raise the planter completely and install service locks on lifting cylinders.



BM028625—UN—31OCT18

1. Park machine on level ground.
2. Loosen nut (B).
3. Turn axle (C) to position wheel (A) in required distance.
4. Tighten nut (B).

NOTE: This adjustment must be applied on both sides. Greater spacing allows more straw to flow between the wheels.

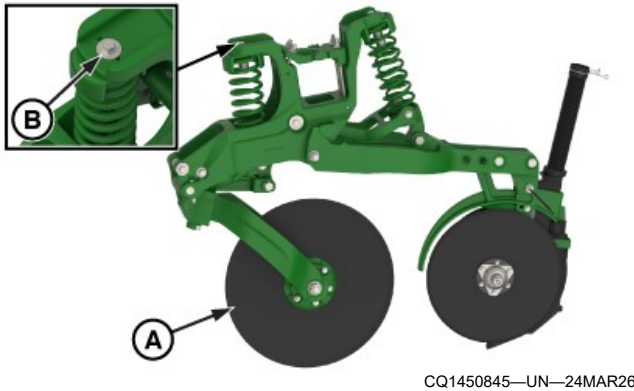
a3rfggt,1702576385981-19-24OCT24

Adjust Cutting Disk Downforce

Mechanical (only available for MaxEmerge 5e)

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustment, or checks on the planter.

NOTE: To facilitate the adjustment procedure, raise the planter.



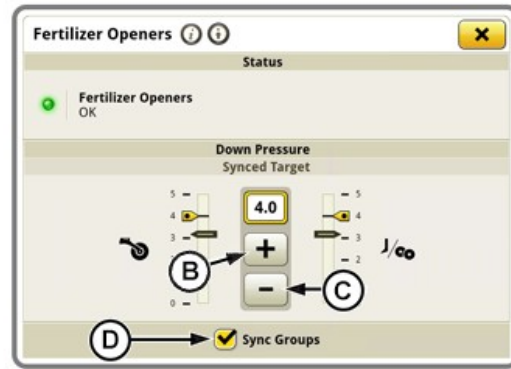
1. To increase cutting disk (A) pressure, turn nut (B) counterclockwise.

IMPORTANT: For the adjustment, consider that the maximum screw travel is 30 mm.

2. To decrease cutting disk (A) pressure, turn nut (B) clockwise.

NOTE: Pressure must be the same in all planting units.

Pneumatic (If Equipped)



Pressure adjustment in a pneumatic spring (A) system is set via SeedStar interface, and varies in levels ranging from 0 to 5.

CAUTION: Do not remove the pressure relief valve.

Do not pressurize the system unless all components from row units are installed.

1. To adjust pneumatic spring (A) pressure, it is possible to increase (B) or decrease (C) pneumatic spring (A) pressure.

NOTE: See your SeedStar Application Help or the SeedStar Operator's Manual for additional information.

2. The adjustment can be made synchronously, controlling the cutting disk and fertilizer opener, by enabling the Sync Groups option (D) on the display, or independently, applied only for the cutting disk.
3. To adjust cutting disk (B) pressure on the soil, an initial setting in the range of 2.5 is recommended.
4. After starting the operation, perform a visual check to determine if the setting meets the cutting power and fertilizer deposition depth requirements.
5. If it does not meet the requirements, make an adjustment of 0.5, either increasing (B) or decreasing (C) the applied pressure. Reevaluate and repeat the adjustment until the desired result is achieved.

NOTE: Whenever there is a change in soil conditions or a field change, redo the field evaluation.

CAUTION: Avoid serious injuries or death. Do not pressurize system beyond 8.27 bar, (120 psi) or 1779 N (400 lbf) of descending force. Over-pressuring or operating the system in incomplete assembly can cause the pneumatic spring to explode.

IMPORTANT: Avoid damage to machine or pneumatic system. Do not eliminate all pressure from system, it's required a minimum pressure of 34—55 kPa (0.3—0.5 bar) or 76—120 N (17—27 lbf) of descending force.

PS9EIDU,1772634272630-19-31MAR26

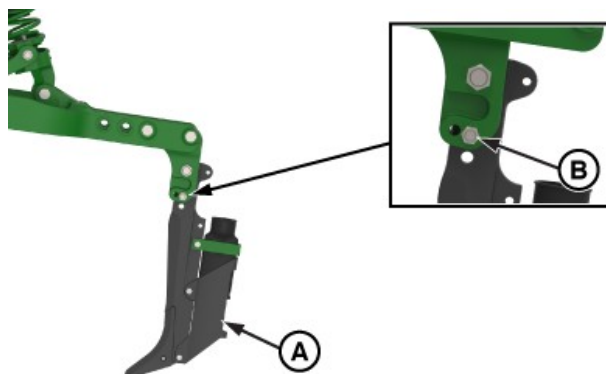
Adjust Chisel-Type Fertilizer Furrow Opener



CQ1451025—UN—24MAR26

Chisel-type Furrow Opener

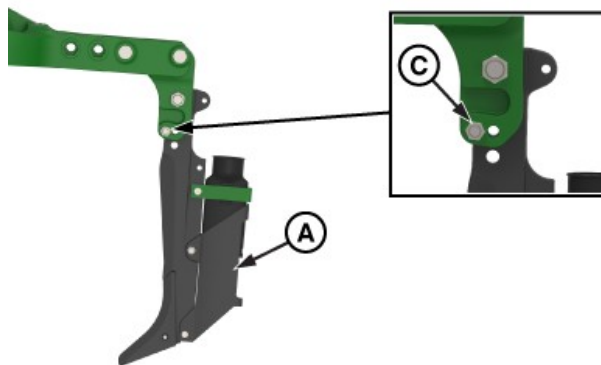
On chisel-type furrow opener (A) rows, it is possible to select the most appropriate attack angle for different ground conditions.



CQ1449503—UN—11MAR26

Chisel-type Furrow Opener More Aggressive Position

Screw position (B) corresponds to a greater attack angle, and it is applicable for harder soils, where more tractor power demand is necessary.



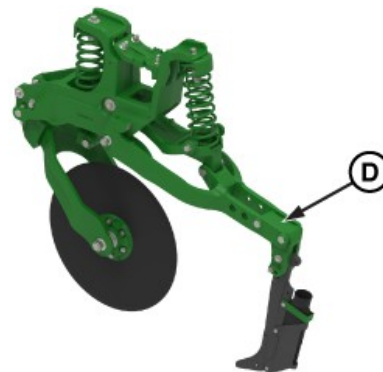
CQ1449505—UN—11MAR26

Chisel-type Furrow Opener Less Aggressive Position

Screw position (C) corresponds to a smaller attack angle, and it is applicable for softer soils, where it is not necessary more tractor power demand.

IMPORTANT: A smaller attack angle results in more penetration capacity and less force. These observations may differ due to local ground conditions, and they should be verified in practice to determine the best operating position.

NOTE: After modifying the angle of attack, readjust the downforce pressure of furrow openers, and check or correct the desired depth.



CQ1451026—UN—24MAR26



E443CH7,1751541779411-19-30MAR26

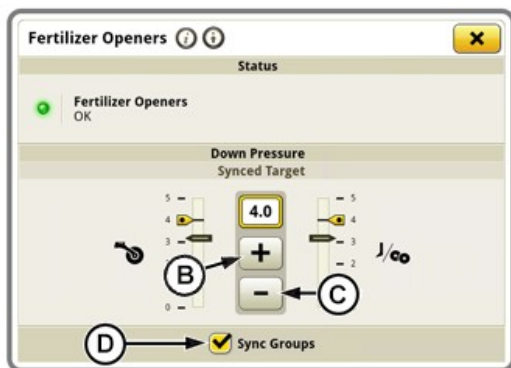
1. To reduce furrow opener pressure, turn nut (A) clockwise.
2. To increase furrow opener pressure, turn nut (A) counterclockwise.

NOTE: Adjust the fertilizer row downforce pressure according to ground conditions and required depth.

A detailed 3D CAD model of a front suspension assembly, rendered in green. The assembly includes a lower control arm, a steering knuckle, a coil spring, and a shock absorber. A callout circle labeled 'A' points to the coil spring.

CQ1451028—UN—20MAR26

CQ1451029—UN—24MAR26



CQ1380001—UN—22OCT24

Pressure adjustment in a pneumatic spring (A) system is set via SeedStar interface, and varies in levels ranging from 0 to 5.

CAUTION: Do not remove the pressure relief valve.

Do not pressurize the system unless all components from row units are installed.

1. To adjust pneumatic spring (A) pressure, it is possible to increase (B) or reduce (C) pneumatic spring (A) pressure.

NOTE: See your SeedStar Application Help or the SeedStar Operator's Manual for additional information.

2. The adjustment can be made synchronously, controlling the cutting disk and fertilizer opener, by enabling the Sync Groups option (D) on the display, or independently, applied only for the fertilizer furrow opener.
3. After starting the operation, perform a visual check to determine if the setting meets the cutting power and fertilizer deposition depth requirements.
4. For pressure adjustment, an initial setting in the range of 2.5 is recommended. After starting the operation, visually check that the set pressure meets the cutting power and fertilizer deposition depth requirements. If it doesn't, adjust the applied pressure up or down by 0.5. Reassess and repeat the adjustment until the expected result is achieved.

NOTE: Whenever there is a change in soil conditions or a field change, redo the field evaluation.

CAUTION: Avoid serious injuries or death. Do not pressurize system beyond 8.27 bar, (120 psi) or 1779 N (400 lbf) of descending force. Over-pressuring or operating the system in incomplete assembly can cause the pneumatic spring to explode.

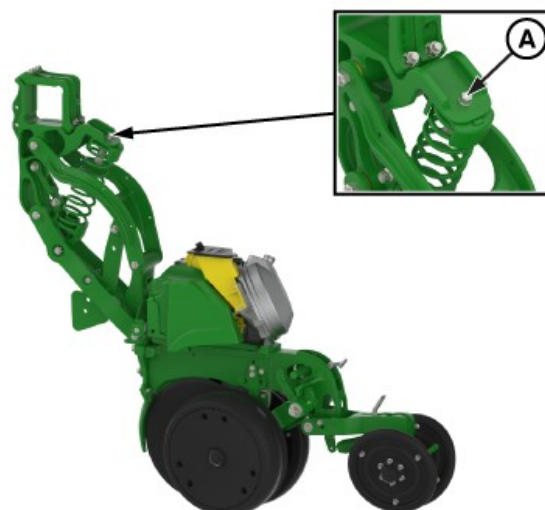
IMPORTANT: Avoid damage to machine or pneumatic system. Do not eliminate all pressure from system, it's required a minimum pressure of 34—55 kPa (0.3—0.5 bar) or 76—120 N (17—27 lbf) of descending force.

PS9EIDU,1772736351910-19-20MAR26

Adjust Seed Row Downforce

NOTE: Adjust the seed row downforce pressure according to ground conditions and required depth.

Mechanical (Only Available for MaxEmerge 5e)



CQ1457188—UN—16APR26

Mechanical Downforce

NOTE: The maximum screw stroke is 60 mm (2.36 in).

1. To reduce seed row pressure, turn nut (A) clockwise.
2. To increase seed row pressure, turn nut (A) counterclockwise.

Pneumatic (If Equipped)



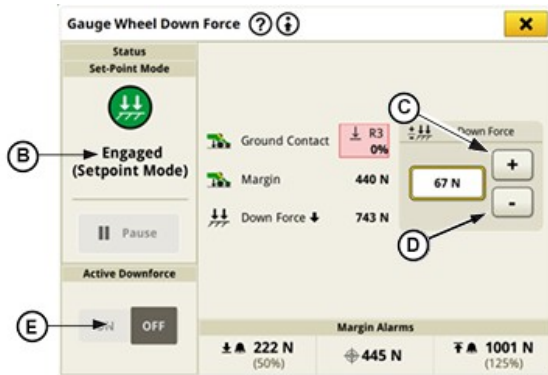
CQ1458199—UN—20APR26

Pneumatic Downforce

1. To adjust pneumatic spring (A) pressure, it is necessary to use setpoint mode (B).
2. On setpoint mode (B), it is possible to increase (C) or reduce (D) pneumatic spring (A) pressure.
3. On active mode (E), it is possible to set a margin, and the system automatically adjusts the row pressure to maintain the target margin.

NOTE: See your SeedStar Application Help or the SeedStar Operator's Manual for additional information.

4. See the following table for approximate margin values that can be used in relation to the soil conditions, when downforce active mode (E) is activated:



CQ1449719—UN—13MAR26

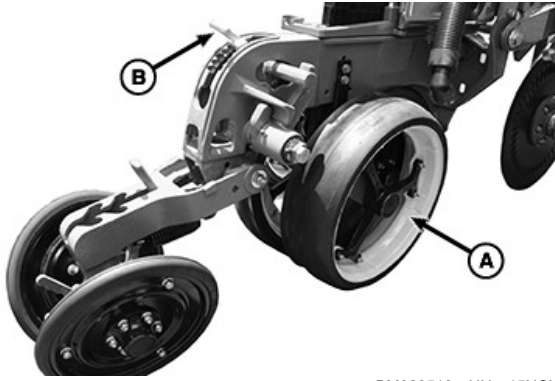
Ground Type	Approximate Margin Value
I - Light	67 to 499 N
II - Medium	500 to 1099 N
III - Heavy	1100 to 1779 N

PS9EIDU,1773058823345-19-20APR26

Adjust Depth Gauge Wheels

NOTE: Closing wheel pressure may affect seed placement and depth. Do not use more pressure than necessary to close seed furrow, especially in soft soils.

NOTE: While image shows an EmergePro row unit, the procedure is also applicable for Offset row units.



BM028512—UN—15NOV18

Depth gauge wheels (A) of the planting unit controls the depth of the seed. Adjust planting depth as follows:

1. Raise machine to relieve weight of gauge wheels on unit and pressure on spring.
2. Unlock depth adjustment rod (B) by pulling it up.

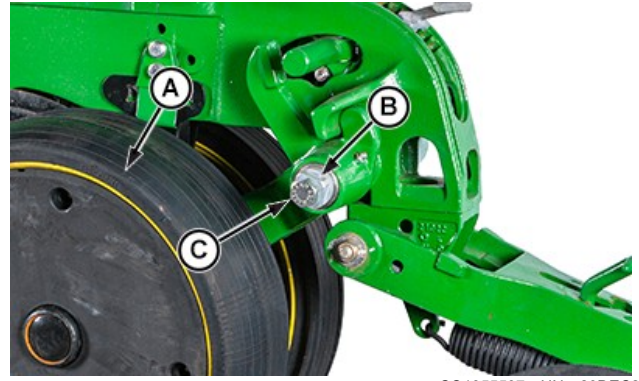
NOTE: If small increments are desired, move handle from one side to the other. Each adjustment hole will change the depth of planting by 6 mm (1/4 in).

3. Move handle (B) forward to decrease planting depth, and move handle (B) back to increase the planting depth.
4. Adjust all rows to the same depth.
5. Lower the machine and advance over a short distance at normal planting speed. (For more informations about planting depth visual check, see Check Seed Population in Checking the Seed Population.)

a3rfggt,1702579531353-19-22OCT24

Adjust the Play Between Depth Gauge Wheels and Seed Double Disk—Except MaxEmerge 5e Offset

1. Check if depth gauge wheels are correctly assembled against blades of double disks to avoid accumulation of soil.
 - a. For dry soil planting: gauge wheels (A) must have a light contact between of seed disks, in a closed position.
 - b. For wet soil planting: gauge wheels (A) must be lightly distanced from seed disks, in a open position.



CQ1355507—UN—29DEC23

2. Loosen screw (C) by approximately 1/2 turn to adjust depth gauge wheels.
3. Turn bushing (B) clockwise to position depth gauge wheel closer to seed disk, or counterclockwise to separate it.
4. After adjusting, tighten screw (C) to specification:

Specification

Screw—Torque. 280 N·m
(206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of screw (C). See more information at Special Tool for Tightening Planter Screws in section Accessories and General Equipment.

E443CH7,1750695409715-19-26JUN25

Adjust the Distance Between Gauge Wheels—MaxEmerge 5e Offset only



CQ1457866—UN—16APR26

Offset Gauge Wheels

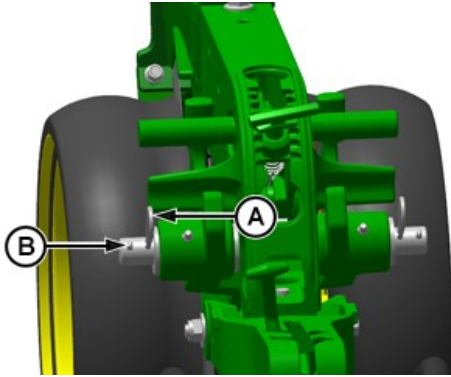
To reduce the earth and dirt accumulation between the depth gauge wheels and the furrow opener disks, adjust

depth gauge wheels correctly against the blades of the furrow opener disks.

For dry soils, the tires of the depth gauge wheels should be close to furrow opener disks.

For wet soils, the tires of the depth gauge wheels should be distant from disks.

To alter the position of the depth gauge wheels:

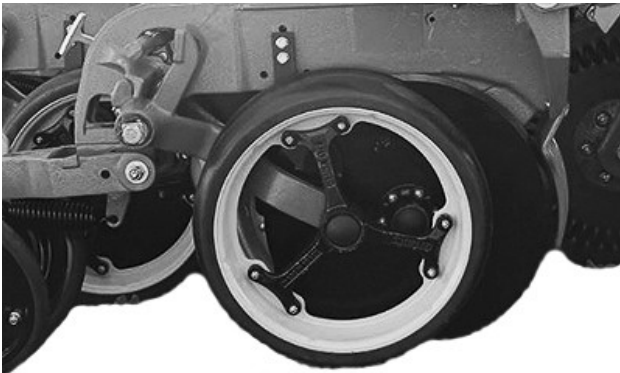


CQ1380007—UN—17OCT24

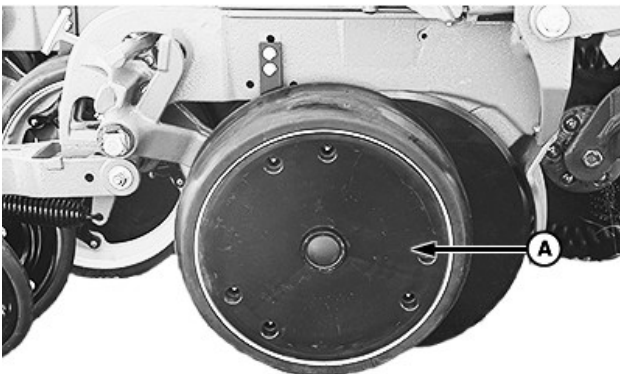
1. Remove cotter pins (A).
2. Move depth gauge wheels inward or outward.
3. Reinstall cotter pin (A) in axle hole (B).

PS9EIDU,1773077088157-19-16APR26

Use Depth Gauge Wheels Caps—Except MaxEmerge 5e Offset



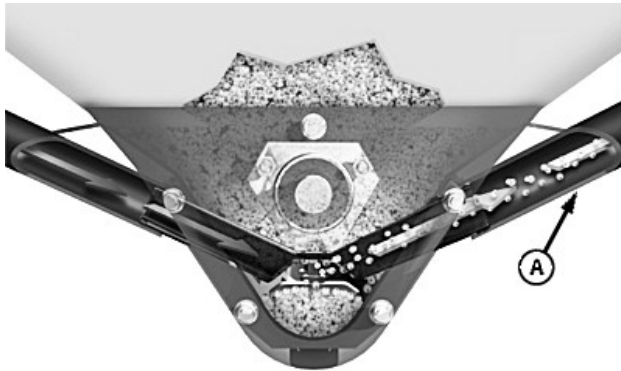
BM028827—UN—23FEB18



BM028826—UN—23FEB18

Operating the Central Commodity System (CCS)

Central Commodity System (CCS) Seed Delivery Operation



A53379—UN—20NOV03

Seed treatments, field conditions, humidity, and seed size alter blower pressure required to deliver seed to all rows. Talc or graphite lubrication is required on ALL crops to lubricate seed. When changing crops, use the initial setting found in Set Central Commodity System (CCS) Tank Pressure in this section before adjusting for field conditions.

Generally, this system performs best when using the lowest possible pressure setting to deliver seed to all row units.

Some lightweight varieties of seed, such as sorghum, small popcorn, and small cotton are picked up too easily by the nozzles. Nozzle inserts are installed over the nozzles to restrict the opening, limiting the amount of seed picked up. Nozzle inserts allow lightweight seeds to flow at optimum rates and reasonable pressures, ensuring reliable seed delivery to all rows.

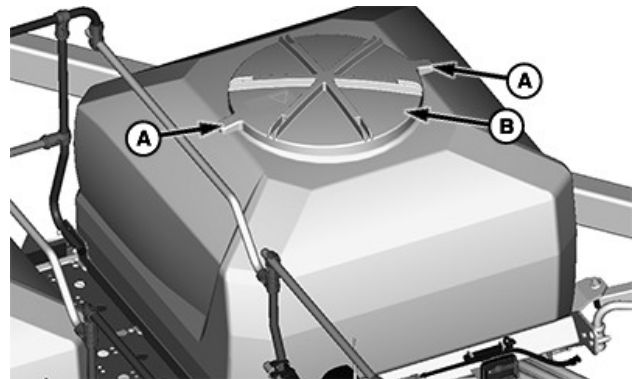
IMPORTANT: Avoid hydraulic motor and tank lid damage. Do not exceed 24 inch of water in tank pressure at the pressure gauge.

1. Random drops in population that last short periods (5 —20 seconds) indicate that the system is not maintaining adequate seed flow.
2. Check that meters and vacuum system is functioning properly before adjusting CCS system.
3. Increase pressure in 2 inch increments until random population drops stop.
4. If the monitor issues a row Failed warning, first determine if the failure is caused by bridging or plugging.
5. Correct nozzle bridging and seed delivery hose (A) plugging. (See Bridged and Blocked Central Commodity System (CCS) in this section.)

a3rfggt,1702580344055-19-14DEC23

Operate the Tank Lids

CAUTION: Avoid personal injury or death. Do not open the tank lids when the blower of the central commodity system (CCS) is running. Lids and harmful chemicals may be blown into face and the seed lines can plug.



BML004414—UN—30APR21

To open, turn lid (B) counterclockwise. To close, turn the lid (B) clockwise.

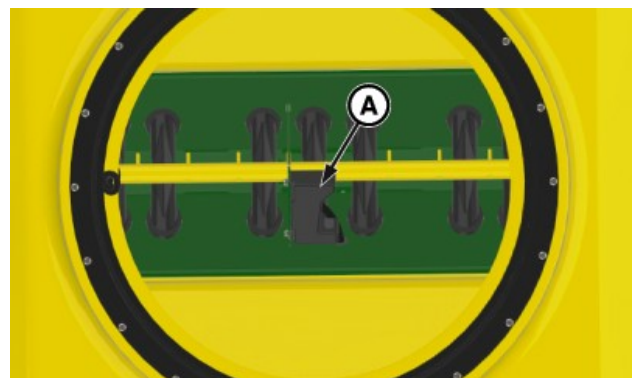
NOTE: There is an arrow at each handle (A) that indicates the rotation direction to open the lid (B).

FHSSYU9,1773319180712-19-12MAR26

Tank Level Sensors

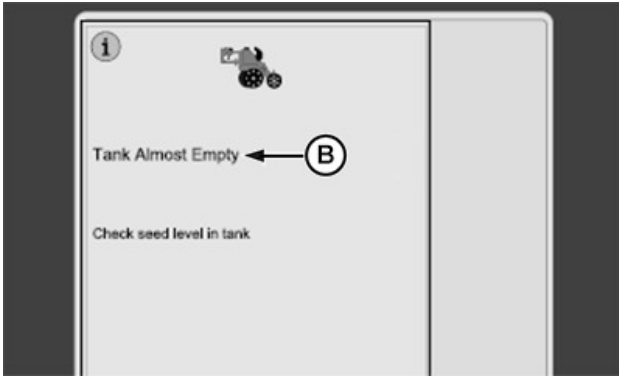
IMPORTANT: Avoid damage to the machine. Clean the level sensors with a brush before filling the central commodity system (CCS) tanks.

NOTE: The tank level sensor is factory installed at the lowest setting. The sensor can be moved higher on the bracket to receive an earlier warning.



CQ1452068—UN—25MAR26

The tank level sensors (A) are optical sensors.



CQ1356633—UN—15JAN24

For planters equipped with MaxEmerge 5e and ExactEmerge seed meter, when a sensor is exposed in one of the tanks, a tank low warning message (B) appears on the display.

FHSSYU9,1774288858210-19-23MAR26

Level the Central Commodity System (CCS) Tanks

CAUTION: Avoid injury from lids and harmful chemicals being blown into your face. Avoid plugging the delivery hoses. Do not open the lids when the central commodity system (CCS) blower is running.

Follow the chemical manufacturers precautions when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.

When a row unit low rate warning occurs, use a broom with stiff 203 mm (8 in) wide bristles and a 1372 mm (4.5 ft) handle to distribute the seed in the CCS tanks evenly. Also, use this brush to level the seed after filling the CCS tanks and to clean the tank level sensor periodically.

a3rfggt,1702580484414-19-21DEC23

Fill the Central Commodity System (CCS) Tank

CAUTION: Do not transport implement with fertilizer and seed exceeding 1/3 of capacity.

Do not open lids when the central commodity system (CCS) blower is running. Lids and harmful chemicals can be blown into face and seed lines can plug.

Follow chemical manufacturers precautions when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.

IMPORTANT: Cleanout any buildup of seed treatments or graphite powder between tank fills.

Keep seed free of debris. Debris can cause blockage in the nozzles. Optional fill screen is available. Contact a John Deere dealer or other service provider.

Clean seed level sensor before filling seed tanks.



CQ1355665—UN—12JUL24

The first time the Central Commodity System is used, to coat the system and create a protective inner layer for the hoses, apply a thin layer of graphite powder to the tanks. Also apply a small amount to each line unit mini-reservoir, and turn on the system.

Avoid plugging delivery hoses at tank. Tank agitators can run when machine is lowered and tractor key is on. Agitator operation without fan air flow causes some seed types to plug in hoses at tank. If machine is lowered for extended periods with seed in tank, turn off tractor key or unplug agitator.

For best performance level of seed in tanks, fill the tank with the minimal amount of seed which is necessary to complete the task. It is recommended to use a stiff bristled broom to level seed when tanks are full and after low tank level sensor warning light comes on.

After filling, close lids tightly to avoid delivery plugging lines when system is activated.

FHSSYU9,1773319497222-19-12MAR26

Fill the Row Unit Hoppers

CAUTION: Do not operate the central commodity system (CCS) blower without the tank lids installed. Harmful chemicals can be blown into face and the seed lines can plug.

Lower machine until CCS fan starts operating and begins to fill row units. Row unit hoppers will usually be at operating level less than 30 seconds, however large

seeds and wide planters may increase this time to 2 minutes.

a3rfgg,1702580484261-19-21DEC23

Set Central Commodity System (CCS) Tank Pressure

To set the tank pressure, proceed as follows:

1. Make sure that tank lids are closed.

IMPORTANT: Avoid machine damage. Warm oil, see tractor Operator's Manual for procedure information. Do not use the central commodity system (CCS) fan to warm oil or seed delivery hoses can plug.

2. Warm up tractor oil.
3. Lower the machine, leave SCV in constant retract detent position.
4. Increase the flow on the tractor select control valve (SCV) until seed starts flowing to hoppers.

IMPORTANT: Avoid damage to the hydraulic motor and to the seed tank. Do not exceed the mark of 24 inches of the water at the pressure gauge or damage can occur to the hydraulic motor and to the seed tank.

NOTE: If failures warnings are received while planting and row meters are empty, increase tank pressure by 2 inches of the water at the pressure gauge until meters stay full.

a3rfgg,1702580484093-19-22DEC23

Operate Central Commodity System (CCS) When Planting Standard Seed Sizes



A50710—UN—17OCT02

Remove the nozzle inserts (A). Larger seeds do not come out of the tanks with the nozzle inserts (A) installed.

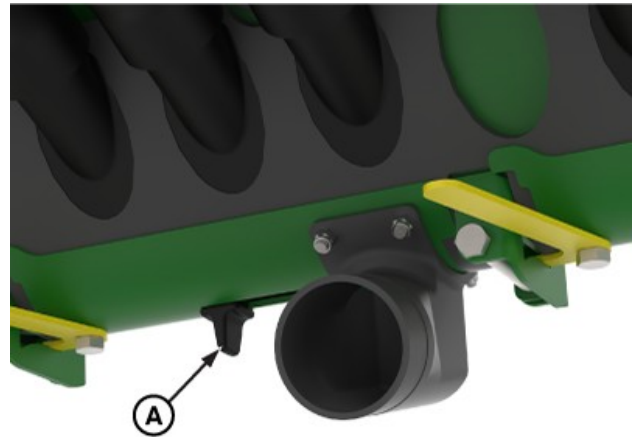
IMPORTANT: Avoid damage to the machine. Remove the nozzle inserts (A) before switching to a crop with larger seeds. Larger seeds do not come out of the seed tanks with the nozzle inserts (A) installed. Drain the seed tanks, remove the nozzle inserts (A), and refill.

NOTE: The nozzle inserts (A) are recommended for sorghum.

NOTE: Cotton seeds that are especially small can require nozzle inserts (A) and discharge elbows.

E443CH7,1750695579841-19-07JUL25

Partially Clean Out the Central Commodity System (CCS) Tanks



CQ1458250—UN—20APR26

1. To remove only a portion of seed from the central commodity system (CCS) tanks, there is a small variable cleanout door that can be opened or closed to control the amount of seed being removed.
2. Slide the door (A) until the desired amount of seed is coming out.

FHSSYU9,1774289011126-19-20APR26

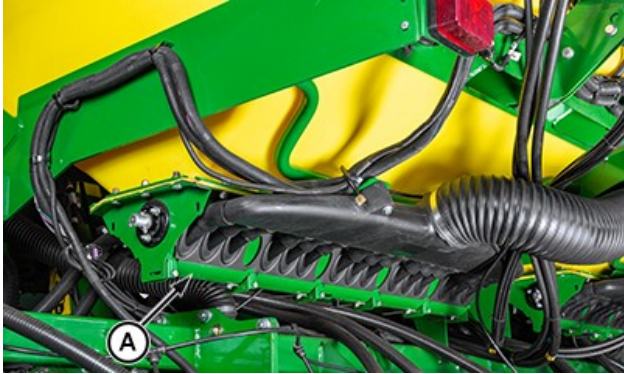
Clean Out Central Commodity System (CCS) Tanks

CAUTION: Use caution if using seed treatments when opening meter doors. Chemicals can cause eye, skin, and breathing problems. Wear mask, gloves, and goggles. Read and follow the safety instructions on the product label.

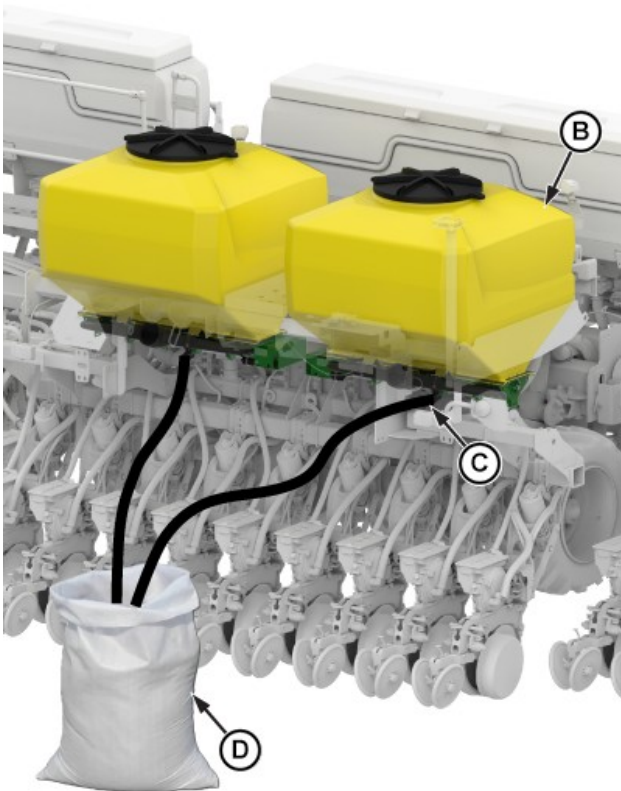
IMPORTANT: When cleaning tank for seed, remove all seed from the tank with stiff bristled broom.

IMPORTANT: Remove any buildup of seed treatment or talc with stiff bristled broom.

IMPORTANT: Make sure cleanout doors on the central commodity system (CCS) tanks are closed before the machine is folded to avoid any damage or they can be damaged.



CQ1355679—UN—12JUL24



CQ1411751—UN—03JUL25

1. Close cleanout door (A), place hose (C) under the CCS tank (B).

NOTE: For the discharge of CCS tank (B), we need to keep cleanout door of the system closed.

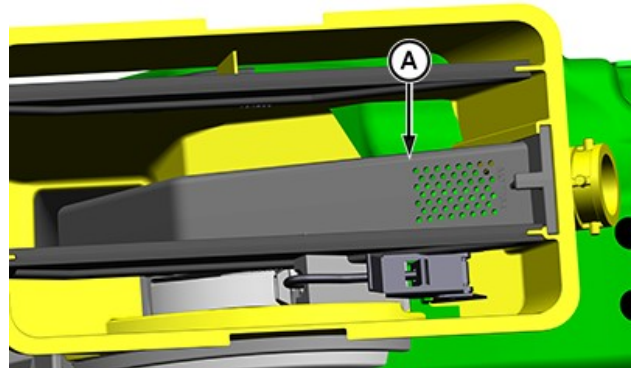
2. Position bag (D) in the end of hose (C), then turn on CCS.
3. Once the working pressure has been reached,

gradually open cleanout door (A) and start filling bag (D).

NOTE: If you open cleanout door (A) before turning the CCS on, the seed will fill hose (C), and the system will not work properly. The available pressure will not be able to overcome the resistance of the accumulated seed.

E443CH7,1750695597749-19-03JUL25

Bridged and Blocked Central Commodity System (CCS)



CQ1356634—UN—15JAN24

MaxEmerge 5e



CQ1356635—UN—15JAN24

ExactEmerge

If the seed monitor issues a row failed warning, first determine if the seed delivery tube is plugged or if the product is bridged in the central commodity system (CCS) tank. To determine the cause, do the following:

1. Start the CCS fan.
2. Remove the lid from the affected row unit hopper.
3. Observe the amount of air flowing through the hopper inlet (A).
 - If low air flow is noted, the CCS delivery hose is plugged. (See Remove the CCS Hose Blockage in this procedure.)
 - If high air flow is noted, product has bridged in the

CCS manifold. (See Product has Bridged in CCS Tank Manifold in this procedure.)

Remove the CCS Hose Blockage

1. Turn off the CCS fan.
2. Remove the seed delivery hose from the affected row unit.
3. Shake the hose vigorously from the hopper to the CCS tank until the blockage spills from the end of the hose.
4. Reconnect the hose.
5. Start the CCS fan and check that seed flows into the hopper.
6. If no seed flow is observed, repeat the procedure.

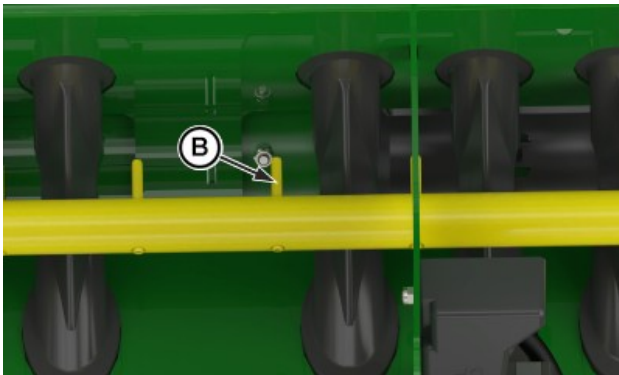
Product has Bridged in CCS Tank Manifold

1. The following items must be checked to ensure proper operation of the CCS system:
 - CCS tank pressure set to the recommended setting for the crop being planted.
 - Tank agitator turning when CCS the fan is on.



A50710—UN—17OCT02

- Nozzle inserts (A) installed or removed for the specific crop being planted.



CQ1452070—UN—26MAR26

- The agitator pins (B) centered between the tank nozzles.

IMPORTANT: Avoid damage to the machine. Do not exceed 24 inches of water at the pressure gauge or damage can occur to the hydraulic motor and to the seed tank lids.

2. If all conditions are addressed and bridging still occurs, increase the CCS tank pressure in 1 inch per time until the seed flows properly to all rows.

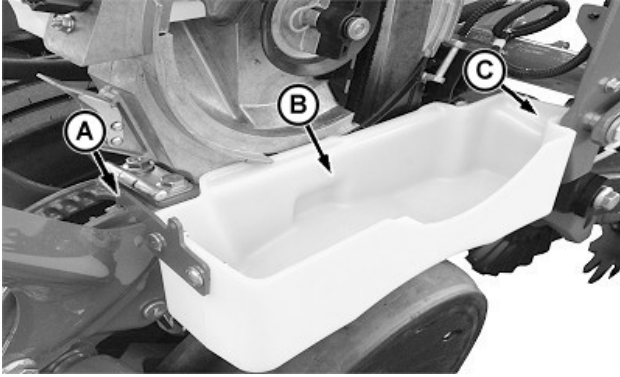
FHSSYU9,1774289142719-19-23MAR26

Clean Out Seed Hoppers and Vacuum Metering Units

⚠ CAUTION: Avoid crushing injury. The frame control must be in road mode, the service locks must be installed, and this procedure must be followed as outlined. When the procedure is complete, place the selective control valve (SCV) from the tractor in neutral position before changing the planter mode to plant.

⚠ CAUTION: The following procedure must be completed in the given order to avoid possible injury and machine damage.

1. Raise the machine.
2. Place the tractor in park and apply the park brake.
3. Deactivate the vacuum system.
4. Install the service locks on the wing frame and on the center frame. (See Install the Service Locks in Maintenance and Service Intervals section.)
5. Install the rockshaft assembly planting unit lockout pins. (See Safe Transport in Transport section.)
6. Check on the tractor monitor if the frame control function is on plant mode.
7. Lower the planter onto the service locks and place the SCV lever into the detent position.
8. Remove the residual seed from the CCS tank. (See Clean Out Central Commodity System (CCS) Tanks in Operating the Central Commodity System (CCS) section.)
9. Check if all the tank lids and cleanout doors are closed.
10. Activate the SCV to adjust the CCS fan until pressure gauge reads 50.8 cm (20 in) of water.



CQ1356636—UN—15JAN24

11. Remove the catch pan (B) of the seed meter from the storage location.
12. To install the catch pan (B) of the seed meter on the row unit, place the plastic edge (C) into position near the parallel arms.
13. Install the hooked plate (A) into the indented edge as shown.
14. Open the vacuum gauge cover and slowly remove the seed disk to purge the seed from the hose and from the meter housing.
15. Install the seed disk back in the meter. Repeat on all rows.
16. Install the catch pan (B) of the seed meter back to the storage position.

⚠ CAUTION: Avoid injury from the sudden start of the fan. The CCS fan operates anytime that the SCV is activated, even when in folded position.

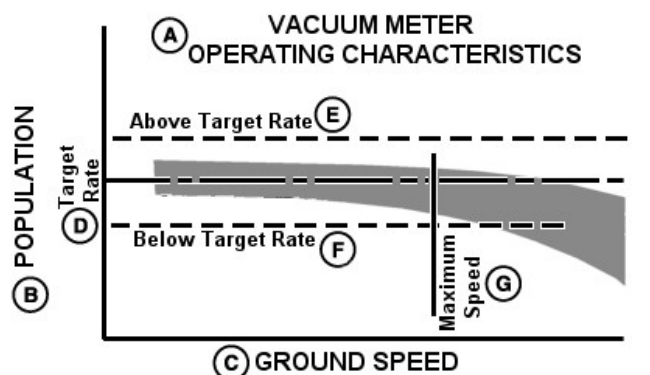
⚠ CAUTION: Avoid injury from crushing. Place the tractor SCV in neutral position before changing the planter mode to plant.

18. Place the tractor SCV in neutral position.
19. Remove the service locks.
20. Install the rockshaft assembly planting unit lockout pins back to the plant position.

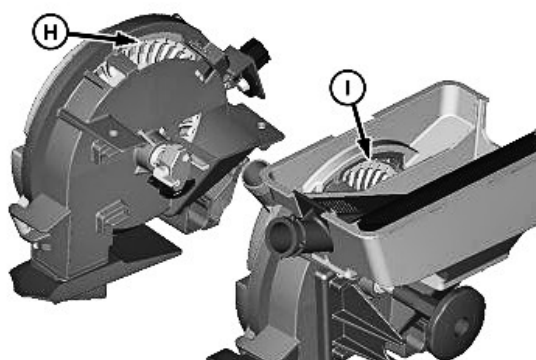
E443CH7,1750695633486-19-26JUN25

Operating the Seed Meter—MaxEmerge 5e

Vacuum Meter Operating Characteristics



A68173—UN—14JUL10



CQ298101—UN—07MAY14

- A—Vacuum Meter Operating Characteristics
 B—Population
 C—Ground Speed
 D—Target Rate
 E—Above Target Rate
 F—Below Target Rate
 G—Maximum Speed
 H—Seed Cell
 I—Meter Seed Cell

The operating band (gray area) illustrates how a vacuum meter performs in relation to target population (indicated by horizontal line).

The width of the operating band varies based upon: various sizes, shapes, and seed treatment.

In most cases, meter accuracy does not decline unless maximum planting speed is exceeded.

The maximum speed can vary based upon field conditions. Rough field conditions can knock seed off seed disks and can cause row unit bounce which can severely affect seed placement. Adding attachments such as pneumatic downforce can improve seed placement in rough field conditions.

Always verify that the correct seed disk is used for seed selection. If the seed is unusually sized or shaped, a disk for a different crop may work better.

If seed varies widely in size and shape, a flat disk and double eliminator can provide better population control.

To check for the proper seed disk application:

- Remove lid from meter.
- Place seed in meter.
- Connect vacuum hose to the meter dome.
- Activate vacuum.
- Turn meter by hand to verify that only one seed fits into each cell (H and I).

a3rfggt,1705942168778-19-26FEB24

Seed Meter Settings

The crop and disk variations require different settings for the double eliminator. See the following table and the Double Eliminator Operation procedure in this section.

The flat disks of John Deere meter a wide variety of seed sizes and shapes that are non-approved crops for the central commodity system (CCS).

NOTE: The nozzle insert and the hopper elbow recommendations are shown in Operating the Central Commodity System (CCS) section.

NOTE: For more information, contact a John Deere dealer or other service provider.

Use this table as a quick reference for common settings. See Seed Disk Selection Guidelines in this section for additional information.

Crop	Disk	Baffle Position	Double Eliminator Used	Knockout Wheel
Soybean	ProMax 64	Upper	No	Yes
Corn	ProMax 40	Upper	Yes	Yes
Cotton	ProMax 64, or ProMax 40 (low population)	Upper	Yes	Yes
Bean	Bean, 50 holes	Upper	No	Yes
Sunflower	ProMax 40	Upper	Yes	Yes
Sorghum	Sorghum 45 holes (standard), Sorghum 90 holes (high population)	Lower	Yes	Yes

PS9EIDU,1772722121179-19-16APR26

Access the Vacuum Meter

1. Locate the catch pan, attached on stair railing.

CAUTION: Use caution if using seed treatments when opening meter domes. Seed treatments can cause eye, skin, or breathing problems. Read and follow the safety instructions on the product label.



A78875—UN—14OCT13

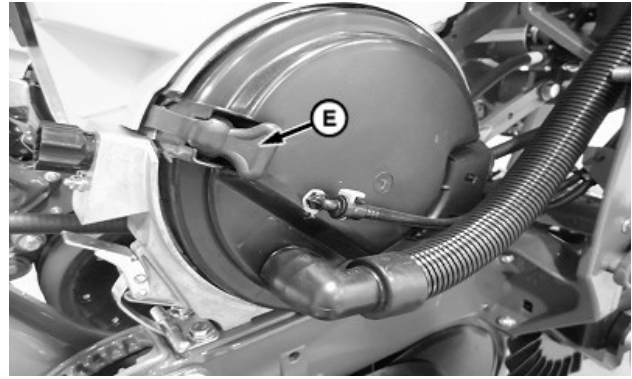
2. Install the seed meter catch pan (A) on the row unit by placing the plastic edge (B) near the parallel arms.
3. Install the hooked plate (C) into the indented edge as shown.



BM028545—UN—10NOV17

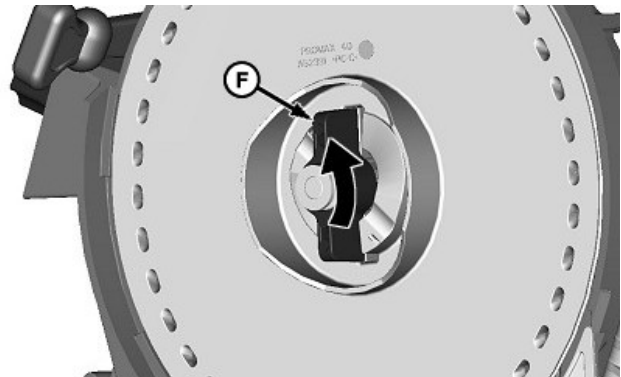
4. Remove the vacuum hose (D) from the metering unit.

CAUTION: Follow precautions as recommended by chemical manufacturers when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.



BM028546—UN—10NOV17

5. Disengage the handle (E) and swing vacuum chamber open.



BM028547—UN—10NOV17

6. Rotate the handle (F) and remove the seed disk.

ER40675.0001006-19-13FEB20

Adjust MaxEmerge 5e Meter Hub

NOTE: The seed disk lightly contacts the double eliminator when properly adjusted.

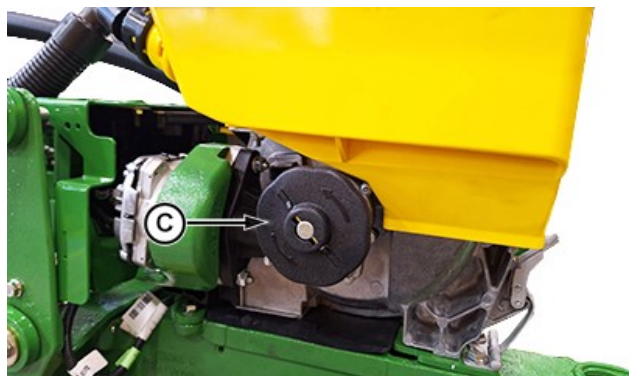
Improve the seed meter accuracy and minimize the seed damage with a properly adjusted meter hub. Check this adjustment whenever the seed disks are changed. If a gap between the seed disk and the double eliminator exists, or if the seed disk is difficult to turn, adjust the meter hub.

1. Disconnect the seed delivery hose, vacuum hose, and the vacuum sense hose (if equipped).
2. Release the seed meter latch and open the seed meter dome.



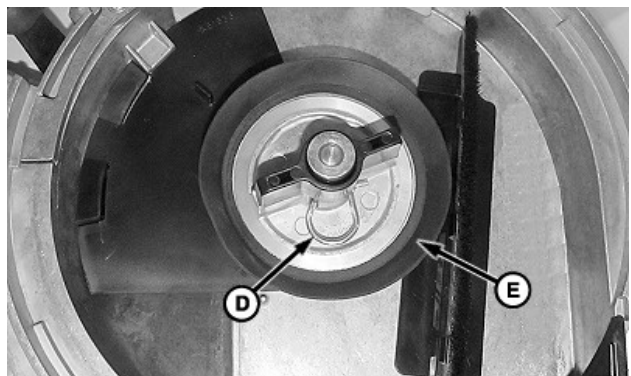
CQ1358868—UN—22FEB24

3. Turn hub handle (A) counterclockwise and remove seed disk (B) from the housing.



CQ1358869—UN—22FEB24

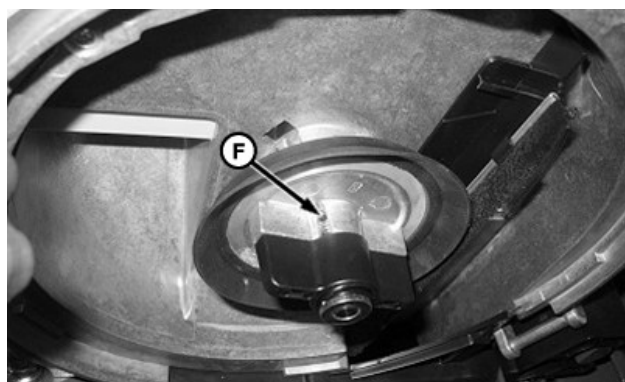
MaxEmerge 5e



BM028630—UN—29NOV17

Hub Pin

4. Remove locking pin (D).
5. Hold meter drive handle (C).
6. Turn meter hub (E) clockwise to move the seed disk closer to the meter housing. Turn meter hub (E) counterclockwise to move the seed disk farther from the meter housing.



BM028631—UN—29NOV17

7. Turn the hub until the slot aligns with hole (F) in the shaft, and install locking pin (D).
8. Install the seed disk.
9. Turn the seed disk rapidly by hand and release.
10. Observe the distance that the seed disk rotates when released.
11. A proper adjustment is achieved when the seed disk rotates approximately 1/4 to 1/2 revolution when the hub is spun rapidly by hand.

a3rfggt.1705942766231-19-03JUL24

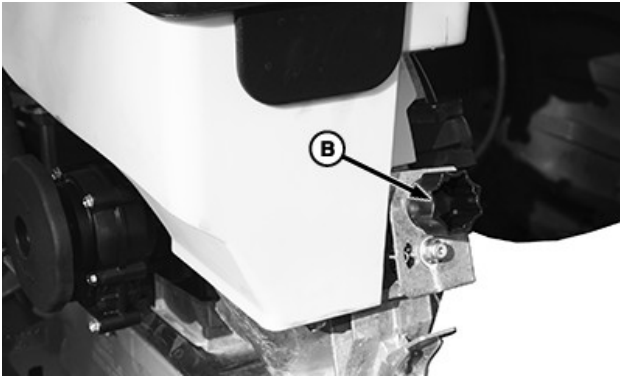
Double Eliminator Operation



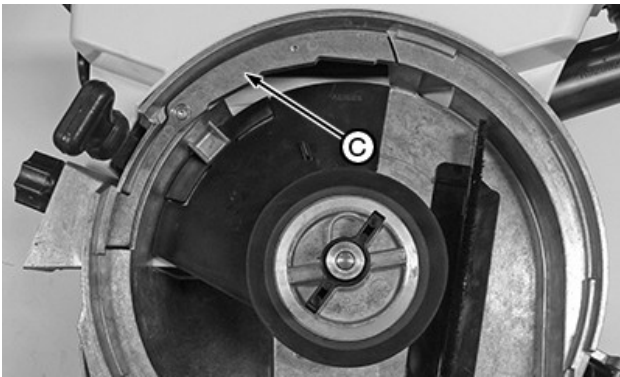
BM028640—UN—13NOV18

There is an indicator (A) next to the knob that can be set between 0—10.

- **Indicator Lower Numbers:** Less than half hole covered.
- **Indicator Middle Numbers:** Half of the hole covered. Detent position.
- **Indicator Higher Numbers:** More than half hole covered.



BM028641—UN—13NOV18



CQ297967—UN—04FEB14

To change the number on indicator (A), use adjustment knob (B). It moves eliminator plate (C), and opens or closes more the seed disk holes.

When in position number 5, the double eliminator plate covers 1/2 of the seed disk holes and provides good seed singulation for a wide variety of seed sizes and shapes.

If seed singulation performance is inconsistent and cannot be corrected by varying the vacuum level, adjust the double eliminator to lower setting. If doubles occur, adjust the double eliminator to a higher setting to cover more area of the hole.

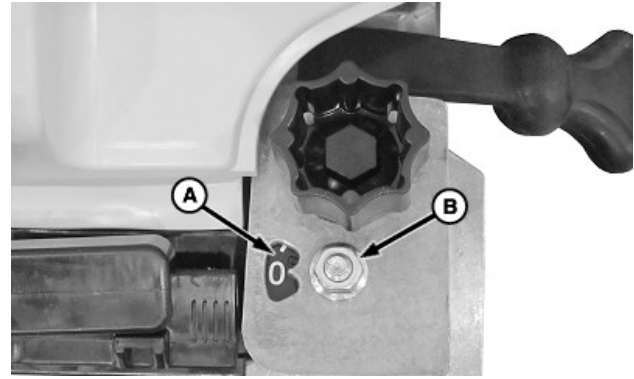
The height adjustment of the seed disk hub is critical for a proper performance. Adjust the seed disk hub, so the seed disk lightly contacts the meter housing. A proper adjustment is achieved when the seed disk rotates approximately 1/4 to 1/2 revolution when the hub is spun rapidly by hand. (See Adjust MaxEmerge 5e Meter Hub in this section.)

a3rfgg, 1705942766154-19-03JUL24

Establish the Zero Position on Double Eliminator

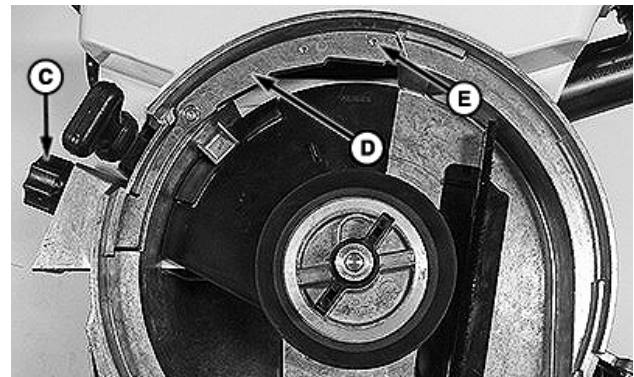
NOTE: Perform this procedure only if the adjustment of the double eliminator is no longer possible.

NOTE: Zero procedure is shown with the meter attached to the hopper. To provide more clearance, remove the hopper.



A79066—UN—13NOV13

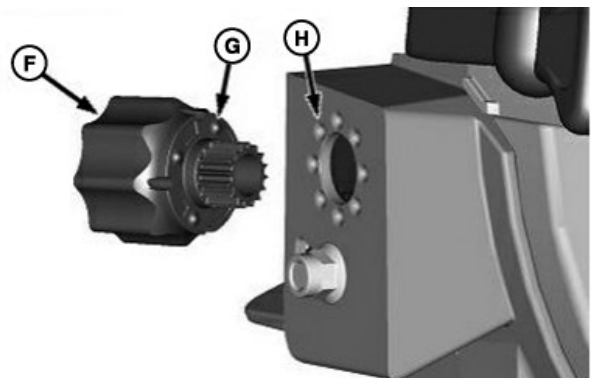
1. Remove nut (B), the screw, and dial (A).



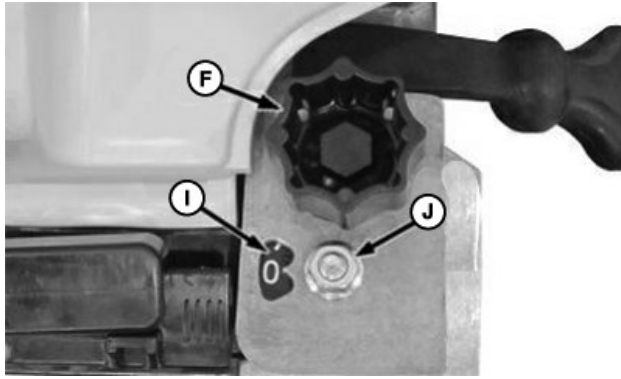
BML004484—UN—12MAY21

2. Turn adjustment knob (C) until alignment hole (E) in double eliminator plate (D) is aligned with the hole in the meter housing.
3. To maintain the position of the plate, insert a drill bit (3 mm) (5/32 in), or similar tool, into the alignment hole.

IMPORTANT: Avoid a misaligned dial. Do not remove the knob (F). Verify that the detents (G) and the detent pockets (H) align during assembly.



BM045142—UN—19AUG19

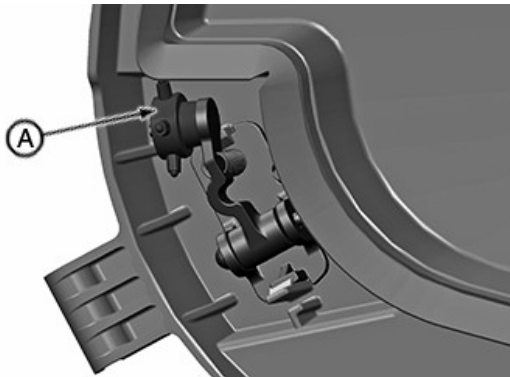


BM045143—UN—19AUG19

4. Install dial (I) so that the zero is centered with the indicator.
5. Install screw and nut (J).
6. Remove the drill bit.

a3rfgg, 1705942856013-19-03JUL24

Seed Knockout Wheel Operation



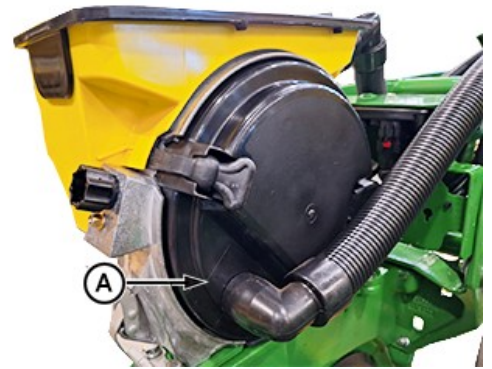
CQ297999—UN—26FEB14

The seed knockout wheel (A) is used to ensure that certain seed types are fully released from the seed cell. Wheel projections engage seed cell holes, forcing all seeds and foreign material to be ejected.

The seed knockout wheel is required when planting sorghum, monogerm sugar beet, and seed planted with flat-type seed disks. Sugar beet and sweet corn seeds can have sharp edges and are typically irregular in shape, creating a potential for seeds to become lodged in the seed cell. Some sorghum seeds contain large amounts of foreign material which can also become trapped in cell or cell holes.

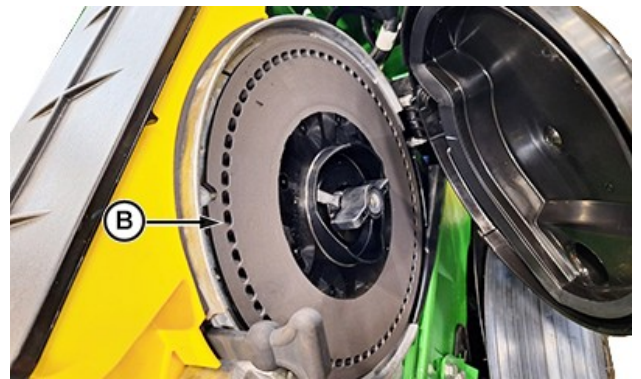
ER40675,0000375-19-06MAR20

Check Seed Disks



CQ1358880—UN—22FEB24

Dosing unit (A) must be configured according to the type of seed to be planted.



CQ1358882—UN—22FEB24

Use seed disk (B) that corresponds to the type of crop to be planted.

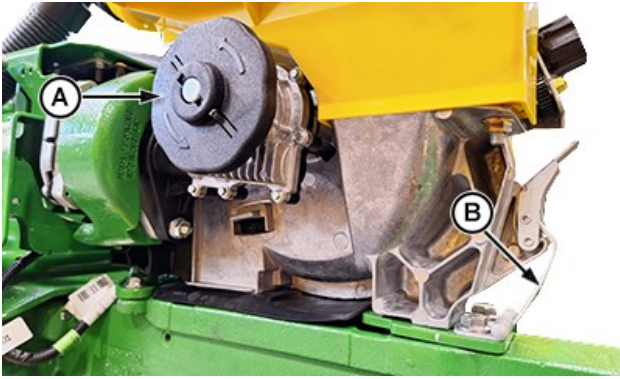
NOTE: The dosing unit must always be in perfect condition. It prevents loss of grain and system malfunction.

NOTE: The disks must exert a certain pressure on the housing. In operation, the vacuum makes an opposing force, causing the disk to rotate properly. Excessive play causes a vacuum leakage or even seed loss. Highly trapped disks generates overload and wear in the drive system.

a3rfgg, 1705944052178-19-03JUL24

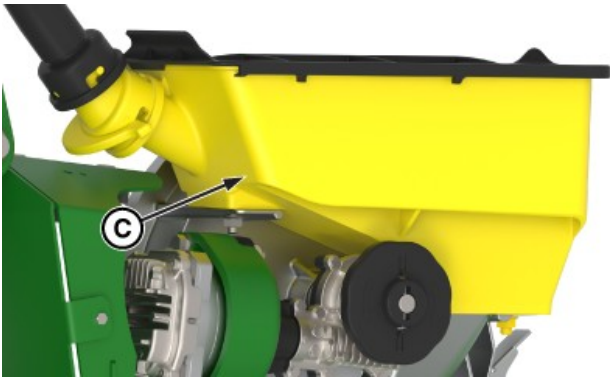
Check Row Vacuum

1. Identify the meters equipped with vacuum gauge hoses.
2. Remove the hopper from the meters on rows with vacuum gauge that is suspected of having a problem.



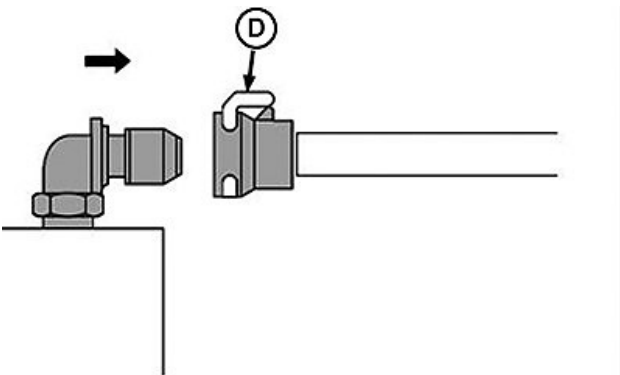
CQ1360407—UN—15MAY24

MaxEmerge 5e

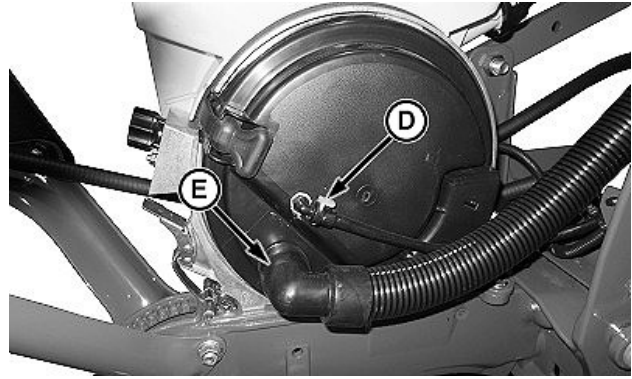


CQ1449464—UN—09MAR26

3. Pull down latch (B).
4. Pull handle (A).
5. While pulling handle (A), unlock meter assembly (C) from the row unit.



CQ1360412—UN—03JUL24



CQ1360413—UN—03JUL24

6. Squeeze retainer (D) and pull the vacuum gauge hose out of the connector.
7. Disconnect vacuum hose (E).
8. Remove the cover from the meter housing.
9. If the meter cover is suspected to have a problem, replace it.
10. Attach a 6 mm (1/4 in) ID hose long enough to reach from the vacuum gauge until the meter being checked.
11. With the cover closed and the vacuum hose installed, fill the meter with seed.
12. Turn the meter to load the seed on the disk.
13. Plug any disconnected vacuum lines.
14. Each row should indicate approximately the same inches of water at the gauge reading.

PS9EIDU,1773053300902-19-09MAR26

Seed Disk Selection Guidelines

IMPORTANT: These seed disk recommendations are based on seed testing from a variety of sources. Because seed size and shape change from year to year, there is always a possibility that an alternative disk can provide better performance. For the most complete and up-to-date listing of available seed disks and recommendations, contact a John Deere dealer or other service provider.

To determine proper disk usage, place a sample of seed into the cells of the seed disk. If two seeds easily fit in the cell, a smaller disk must be used. If one seed does not fit properly in the cell, a larger disk must be used. If two disks work well for a particular seed size, always use the smaller disk. Increase vacuum to compensate for skips (and rough fields). Lower vacuum to eliminate doubles.

For seed sizes outside ranges listed, seed disks for other crops can be used. As with any seed disk change,

population and spacing must always be checked on the field.

a3rfgg,1705944052069-19-17JUL25

flash before installing seed disk. If flash (A) cannot be easily removed, replace the disk.

ER40675,000100A-19-06MAR20

Planting Corn in Hillside Conditions

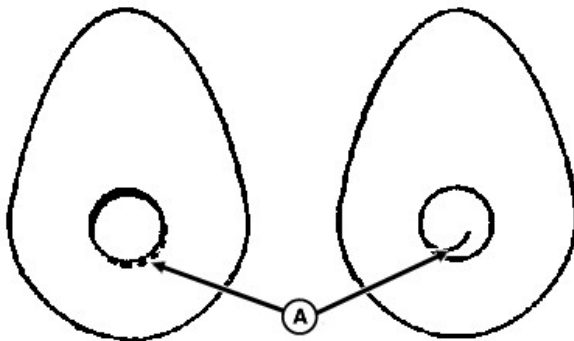
The angle of a hillside or changing directions on a hillside can affect the meter performance. If the left-hand side of the machine is the downhill side, skips are possible due to the seeds falling away from the seed disk and a smaller seed reservoir next to the seed disk is necessary. If the right-hand side of machine is the downhill side, overpopulation is possible due to the seeds being forced against the seed disk and a large seed reservoir next to the seed disk is necessary. To maximize the vacuum seed meter performance on hillsides, follow these steps:

- Use a disk with the fewest holes possible. Fewer holes provide less opportunity for doubles.
- Use round seeds. Round seeds remain in the cell of a cell-type disk better and reduce the chance for doubles.
- Use a flat disk with the double eliminator, if round seeds are not available or if the hillsides are steep. The flat disk has no seed cells and requires higher vacuum levels, a double eliminator, and a knockout wheel. The double eliminator is used to remove one of two seeds covering a single hole in the seed disk. The knockout wheel is used to remove debris from the holes of the seed disks.

a3rfgg,1705944051923-19-03JUL24

Check the Seed Disk Cell

NOTE: To determine seed meter accuracy, perform a field check. It is not necessary to replace any seed disk when metering performance is satisfactory.



A46242—UN—27JUL00

Check the seed cell and hole for flash (A) (particles of material left behind in molding process). Remove any

Optimize Seed Spacing

Match the seed disk to the seed for optimal meter performance. Seed spacing is dependent on ground conditions, meter speed, and ground speed.

IMPORTANT: Avoid poor seed spacing. Avoid rough ground conditions, high metering speeds, and high ground speeds. The operator determines if the planting timeline is more important than optimal spacing.

Observe the following to optimize seed spacing:

Ground Conditions—To achieve optimal spacing, slow down in rough ground conditions.

Meter Speed—With high seed populations, reduce ground speed to reduce meter speed.

Ground Speed—Ground speed directly affects in-ground seed spacing. As the ground speeds rise above 8 km/h (5 mph), seed spacing performance decreases.

ER40675,0001009-19-06MAR20

Check Meter Performance

NOTE: After a seed disk is selected, in-ground spacing checks are required to determine the level of metering performance. (See Seed Population section.)

The seed disk selection guidelines are recommendations resulting from tests with seed from various sources. Because of changes in the seed shape and size from year to year, there is always the possibility that an alternative disk provides better performance.

ER40675,00004E5-19-09MAR20

Adjust Vacuum Gauge

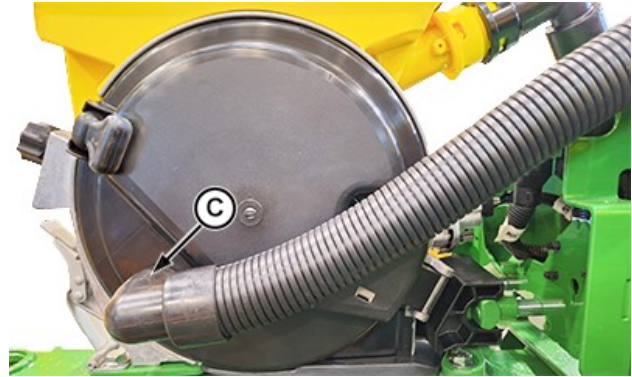
NOTE: To zero SeedStar 5 monitor vacuum sensors, refer to the SeedStar 5 monitor Operator's Manual.



BM029824—UN—31OCT18

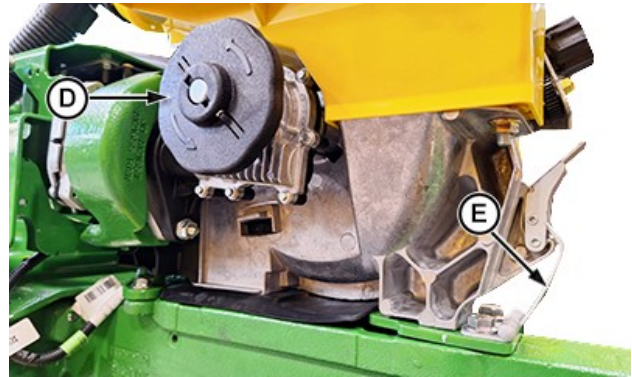
1. Shut off the vacuum system.
2. With the vacuum gauge on a vertical position, disconnect the vacuum gauge hose to equalize the gauge with the atmospheric pressure.
3. Use zero adjusting screw (A) to set the gauge pointer exactly on the zero mark.
4. Connect the gauge hose.
5. Adjust vacuum level to recommended setting. (See Set Vacuum Level in this section.)

a3rfgg, 1705944224428-19-03JUL24



CQ1359222—UN—22FEB24

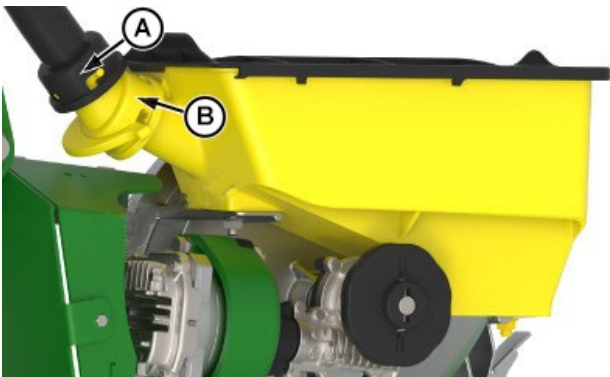
2. Remove vacuum hose (C).



CQ1359219—UN—15MAY24

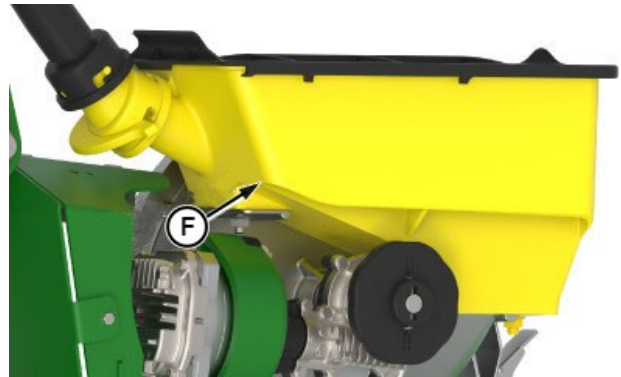
Remove and Install the Seed Meter

Remove the Seed Meter



CQ1448777—UN—16APR26

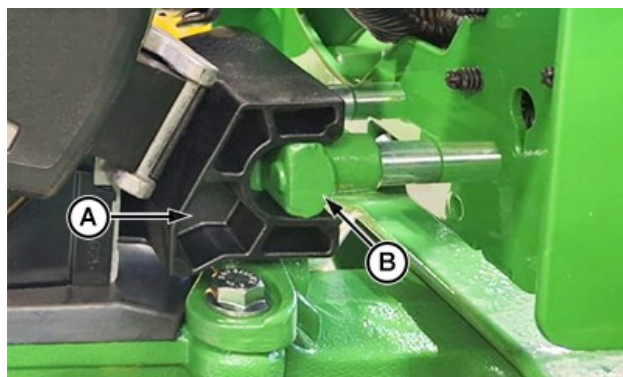
1. Rotate seed delivery hose (A) counterclockwise until it unsnaps from hopper filler neck (B). Pull off seed delivery hose (A).



CQ1449783—UN—16APR26

1. Push down latch (E).
2. Pull handle (D).
3. While pulling handle (D), unlock meter assembly (F) from the row unit.

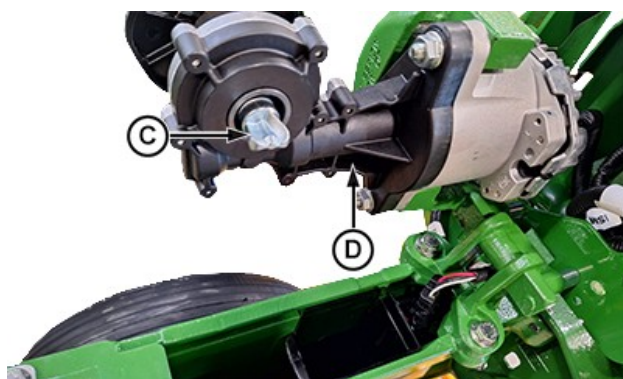
Install the Seed Meter



Meter Installation

CQ1359269—UN—22FEB24

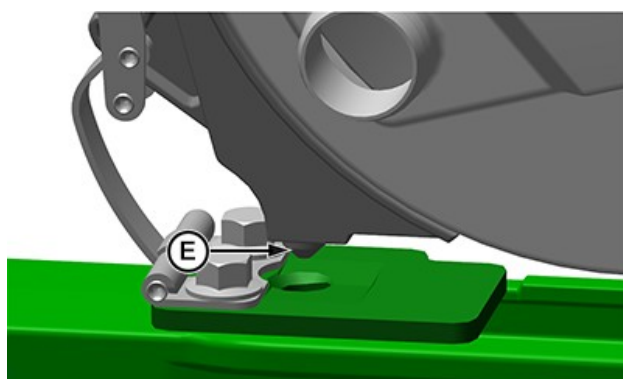
1. Push hopper alignment notch (A) over support plate (B).



MaxEmerge 5e

CQ1359270—UN—22FEB24

2. Connect the seed meter to drive pin (C) and drive coupler (D).



Alignment Pin

CQ1359271—UN—22FEB24

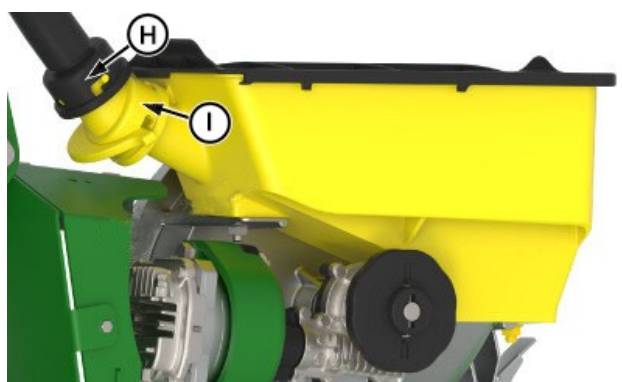
3. Check if pin (E) on the bottom of the meter is aligned with the hole on the latch plate of the row unit.



CQ1359272—UN—22FEB24

4. Align latch (F) on meter hook (G), and push up until the latch snaps into position.

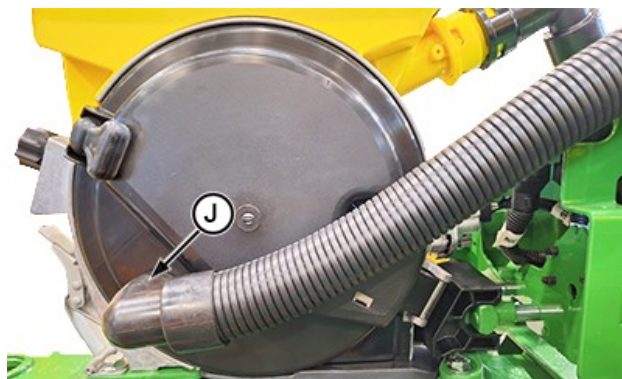
5.



CQ1449785—UN—16APR26

Meter Installation

Push seed delivery hose (H) onto hopper filler neck (I), and rotate it clockwise until it snaps into place.



CQ1359275—UN—22FEB24

6. Install vacuum hose (J).

PS9EIDU,1773320040326-19-12MAR26

Inspect the Meter Units

NOTE: If using seed treatments, remove any buildup that may occur in bottom of hopper.



Vacuum Meter

A51186—UN—19NOV02

1. To inspect the meter, open the door (A) and remove the seed disk.
2. Turn the meter hub (B) by hand to determine if mechanism is free of dirt, chaff, or other foreign material. Inspect hub and vacuum seals for cracks and wear.
3. Replace if necessary.

ER40675.0001012-19-04FEB20

Set Vacuum Level

IMPORTANT: When using central commodity system (CCS) seed delivery system, the only crops that can be delivered are corn, soybeans, sorghum, sunflower, and cotton.

NOTE: Some seed sizes and shapes require vacuum levels slightly higher or lower than settings shown. Always perform field check to verify vacuum level. The charts provided in this section are guides and are accurate in most conditions. Some situations require a higher or lower vacuum setting.

Vacuum level is indicated on a monitor display mounted in the tractor cab. See SeedStar Operator's Manual for vacuum level display on monitor.

Initial vacuum levels are readings taken at planting speed.

NOTE: The vacuum level is slightly lower during tractor and vacuum motor start-up. Allow hydraulic oil to warm up for accurate readings.

Set vacuum level as follows:

1. Move hydraulic control lever to forward detent

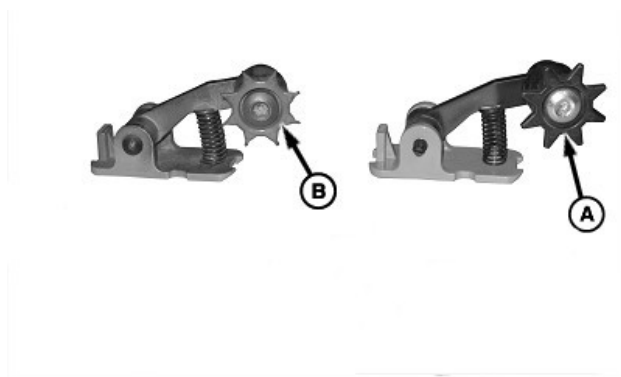
position to start vacuum motor. Allow oil to warm up for 15 minutes. (For more details, refer to the tractor Operator's Manual.)

2. Fill hoppers or CCS bulk tanks with seed.
3. To adjust the vacuum manually:
 - a. Adjust vacuum level by SCV flow.
 - b. Start adjustment at 2, and increase or decrease it as necessary.
4. To adjust the vacuum automatically:
 - a. Setup SCV at 7.
 - b. Adjust vacuum level by increasing its value on monitor.
5. To adjust vacuum level, it is necessary to check double eliminator adjustment. The vacuum and the double eliminator are related, so both of them must have the correct adjustment:
 - a. Identify the necessary vacuum level to a proper seed singulation.
 - b. Verify on monitor, and also on furrows, if doubles or skips are occurring.
 - c. If doubles or skips are occurring, adjust the double eliminator in a more aggressive way, so that only one seed keeps held in the disk hole.
 - d. If it is not possible to eliminate doubles and skips with double eliminator adjustment, reduce vacuum level gradually until the proper seed singulation is reached.
6. Perform field checks to verify that the population is accurate. Perform meter and vacuum adjustments as needed.

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Operating the Seed Meter—ExactEmerge

Seed Meter Settings



BM028686—UN—15DEC17

A—Wheel (Black)
B—Wheel (Green)

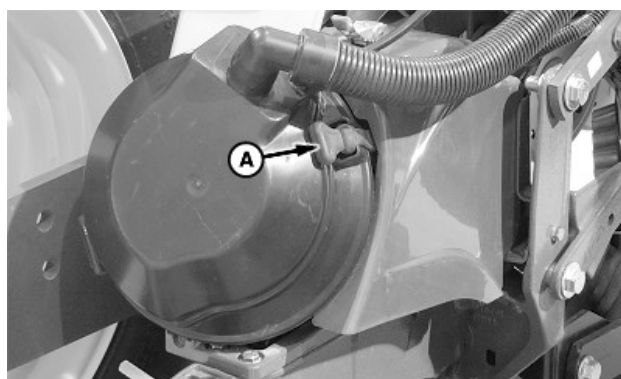
NOTE: See *Adjust the Double Eliminator in Operate Machine* for crop position adjustments for three-tine double eliminator.

NOTE: For more information, contact a John Deere dealer or other service provider.

Crop	Disk	Inner Double Eliminator	External Double Eliminator	Knockout Wheel	Meter Strip
Soybean	64 holes	Disengaged (Type: Rubber boot)	Rubber boot	Black	Smooth
Corn	16 holes	Intermediary/agressive (Type: Rubber boot)	Rubber boot	Black	Rough
Cotton	32 holes	Less aggressive/intermediary (Type: Rubber boot)	Rubber boot/bristles	Black	Rough
Bean	64 holes	Disengaged (Type: Rubber boot)	Rubber boot	Black	Smooth
Sunflower	16 holes	Intermediary (Type: Rubber boot)	Rubber boot	Black	Smooth
Sorghum	32 holes	Intermediary (Type: Rubber boot)	Bristles	Green	Smooth

a3rfggt.1705947887641-19-14APR26

Access the Vacuum Meter

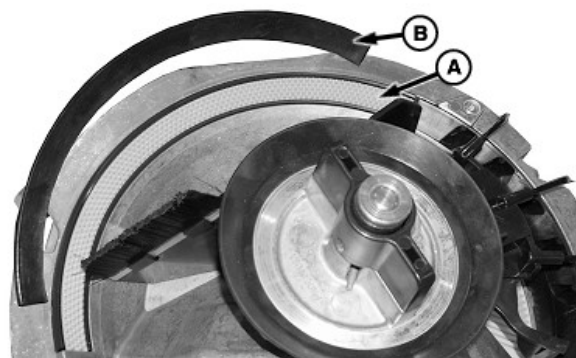


A82476—UN—01MAY14

Unlock the meter handle (A) and open the seed meter dome.

ER40675,00003B7-19-09MAR19

Change the Meter Strip (Agitation or Smooth)

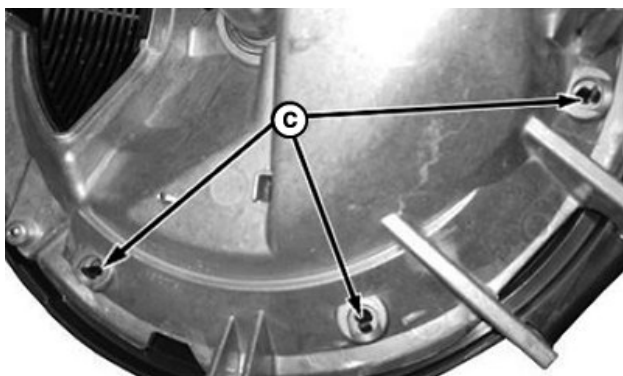


A83322—UN—19AUG14

1. Determine which agitator strip is needed for the crop being planted. The agitator strip (A) has a rough surface. The smooth strip (B) has a smooth surface. (See *Seed Meter Settings* in section *Vacuum Meter Setup ExactEmerge*.)
2. Remove the meter from the row unit. (See *Remove*

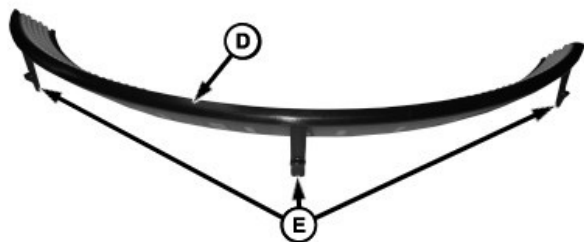
and install the ExactEmerge Seed Meter in this section.)

3. Open the seed meter dome.
4. Remove the seed disk.

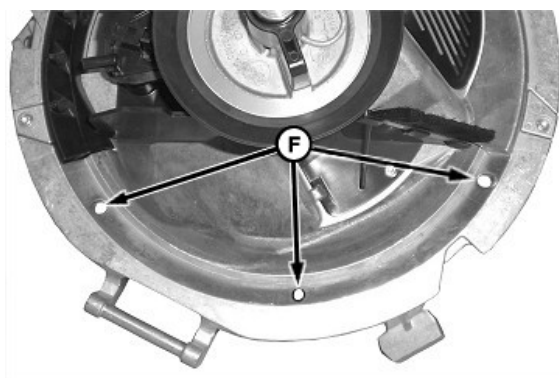


BM030034—UN—11FEB19

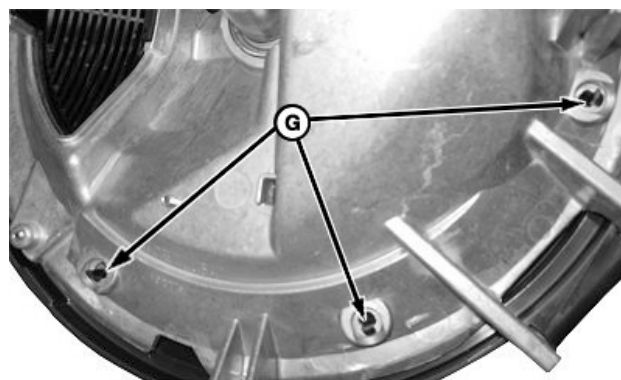
5. To release the agitator strip, squeeze the tabs (C) on the back of the meter, then pull out the strip.



BM028646—UN—29NOV17



BM028647—UN—29NOV17



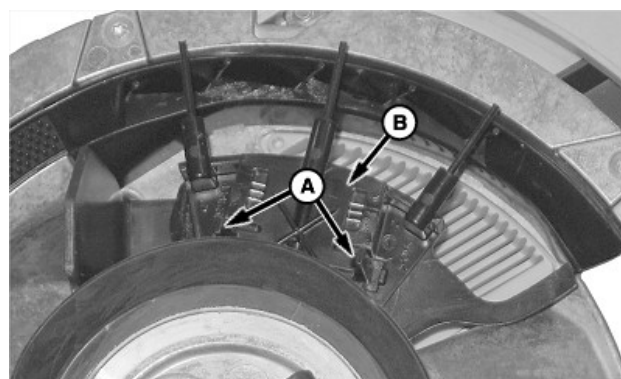
BM028648—UN—29NOV17

6. To install the correct agitator strip (D) in the meter, align the tabs (E) with the holes (F).
 7. Push the strip into position until the tabs (G) latch into the holes.
 8. Install the correct seed disk. (See Install the Seed Disk in this section.)
- NOTE:** The meter hub height must be checked when the seed disk is changed.
9. Adjust the meter hub height. (See Adjust the Seed Meter Hub Height in this section.)
 10. Close the seed meter dome.
 11. Install the meter on the row unit. (See Remove and Install the ExactEmerge Seed Meter in this section.)

a3rfggt,1709032980916-19-27FEB24

Adjust the Double Eliminator

1. Open the seed meter dome and remove the seed disk.



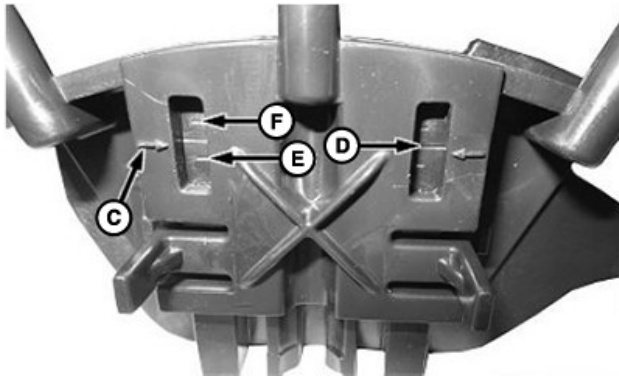
A87493—UN—02SEP15

2. Squeeze the tabs (A) on the double eliminator (B).

NOTE: To retain the new position, release the tabs on the double eliminator and check if the tabs latch is in locked position.

Double Eliminator Positions		
Position	Seed	Setting

D	All approved crops except soybeans	Standard
E	All approved crops except soybeans	Less Aggressive
F	All approved crops except soybeans	Aggressive
G	Soybeans	Disengaged If the number of soybeans exceed 7700 per kg (3500 per lb), use the less aggressive position (C).



BM030035—UN—11FEB19

3. Slide the eliminator until the pointer (C) is leveled with the adjustment line required.

- The middle position (D) is the standard position for most crops.

NOTE: If skips are present, first check if the knockout wheel is engaged with the holes in the seed disk. (See Knockout Wheel Operation in this section.)

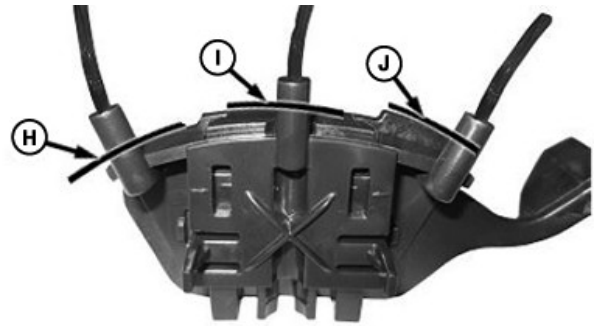
NOTE: If multiples are present, first check if the double eliminator tines or brushes are worn and need replacement.

- If the monitor shows that skips are occurring and increasing the vacuum is not helping, use the position (E).
- If the monitor shows that multiples are occurring and decreasing the vacuum is not helping, use the position (F).



BM030036—UN—11FEB19

- Disengaged position (G) is for soybeans.



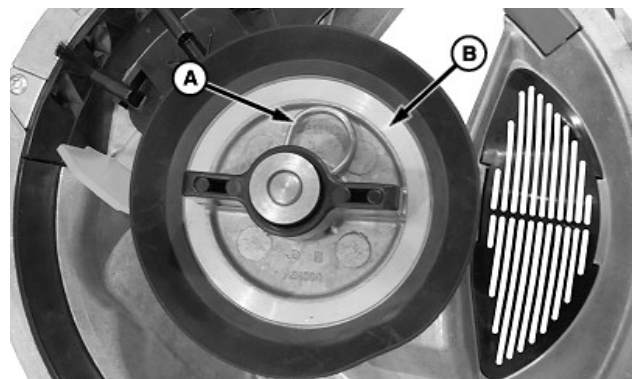
BM030037—UN—11FEB19

When it is difficult to read the pointer position, use the top of the double eliminator in relation to the rear support as a position indicator.

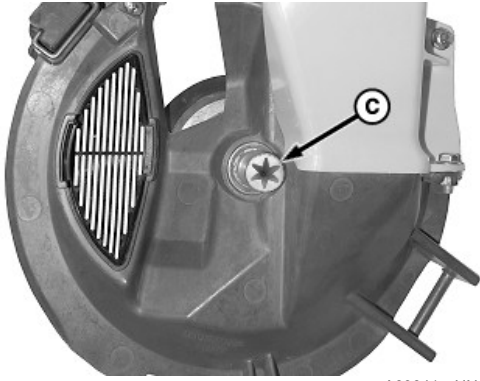
- The left-hand side of the eliminator is leveled with the left-hand side of the support (H) when in a less aggressive position.
- The middle of the eliminator is leveled with the middle of the support (I) when in the standard adjustment position.
- The right-hand side of the eliminator is leveled with the right-hand side of the support (J) when in an aggressive position.

ER40675,0001019-19-06MAR20

Adjust ExactEmerge Meter Hub

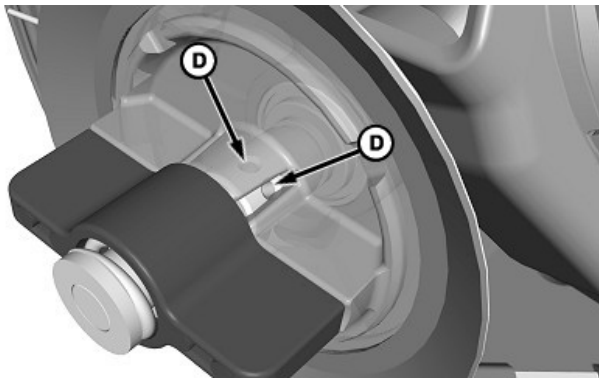


A79724—UN—08JAN14



A83841—UN—10OCT14

1. Remove the spring locking pin (A).
2. Hold the meter drive coupler (C).
3. Turn the meter hub (B) clockwise to move seed disk closer to the meter housing or counterclockwise to move seed disk farther from the meter housing.

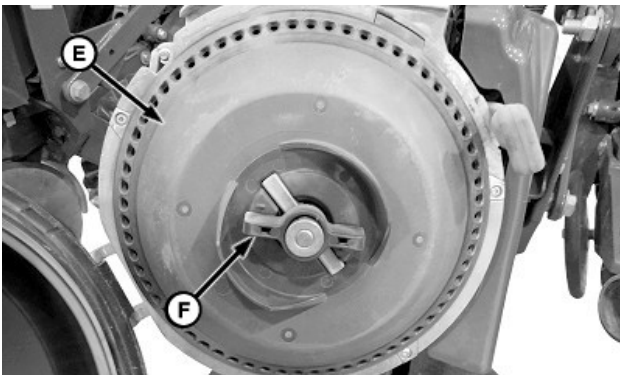


BM028664—UN—30NOV17

NOTE: Hub spindle has two holes (D) to allow fine adjustment.

Meter hub shown translucent to show location of both holes.

4. Turn the hub until slot aligns with the nearest hole (D) in shaft, and install the spring locking pin (A).



BM028665—UN—30NOV17

5. Install the seed disk (E), and turn the hub handle (F) to lock in place.
6. Verify that seed disk contacts meter housing.

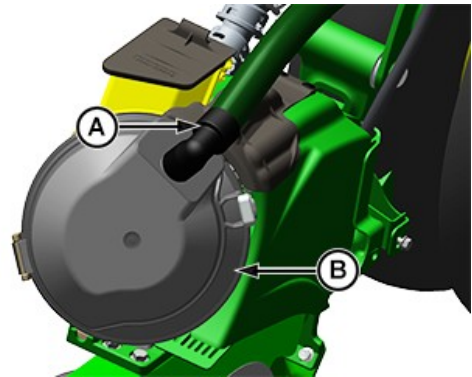
7. Rotate the hub handle clockwise to check hub height.
 - If hub handle clicks out of detent while attempting to rotate, hub is too tight. Loosen the hub 1—2 holes on spindle.
 - If seed disk continues to rotate after hub handle is released, hub is too loose. Tighten the hub 1—2 holes on spindle.
8. Repeat until the hub adjustment is correct.

a3rfgg,1705947939781-19-14FEB24

Check Row Vacuum—ExactEmerge Meters

IMPORTANT: Before replacing meter domes on suspect meters, be certain that vacuum levelers are in place.

1. Identify meters equipped with vacuum gauge hoses.



CQ1371514—UN—04JUL24

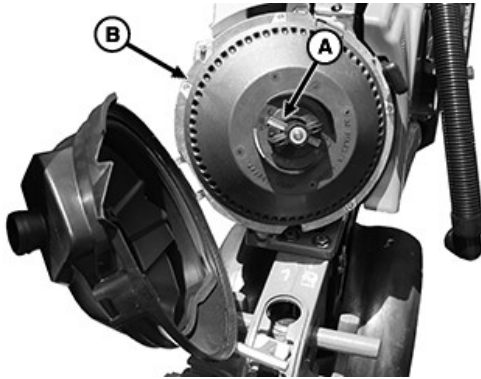
2. Remove vacuum hose (A) from meter dome (B).
3. Remove meter dome (B) from the housing.
4. Identify suspected problem meter.
5. Remove the meter.
6. Replace meter dome (B) if suspected meter problem.
7. Attach a 6 mm (1/4 in) ID hose, long enough to reach from vacuum gauge to meter being checked.
8. Turn the meter to load seed on the disk.
9. Plug any disconnected vacuum lines.

IMPORTANT: Avoid hose damage by interference with the machine. ExactEmerge row units have supports that fix the vacuum hose close to the parallel arms. Ensure that the hose is fastened and positioned on the inside of the arms, especially on the center line below the ladder.

10. Each row should indicate approximate same inches of water at the pressure gauge reading.

a3rfgg,1705947939621-19-08OCT24

Adjust the Seed Meter Hub Height



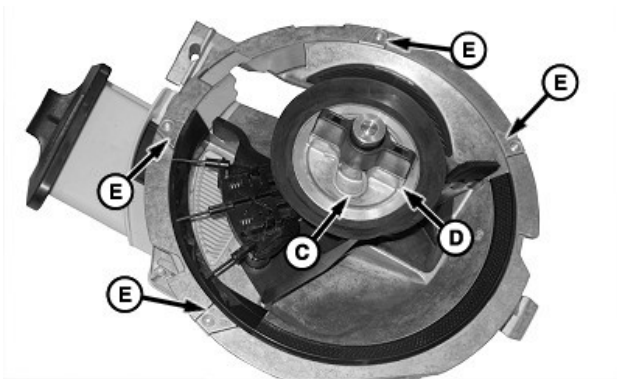
BM029876—UN—30OCT19

Improve the meter accuracy and minimize the seed damage with a properly adjusted meter hub.

Check this adjustment whenever a seed disk is changed.

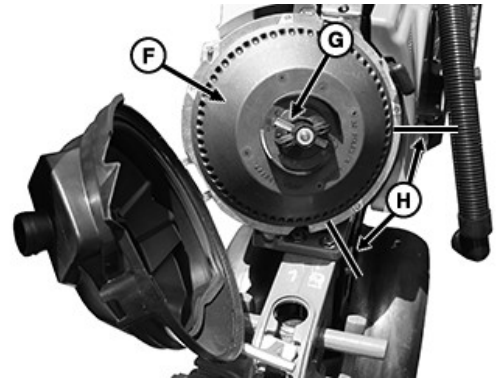
If there is a gap between the seed disk and the wear pads of the meter housing (B) or if the seed disk is difficult to turn, adjust the meter hub as follows:

1. Disconnect and plug the seed delivery hose, vacuum hose, and the vacuum sense hose (if equipped).
2. Open the seed meter cover.
3. Turn the handle (A) counterclockwise.
4. Remove the seed disk.



BM028649—UN—29NOV17

5. Remove the spring clip (C).
6. Adjust the seed meter hub (D).
 - Make small adjustments.
 - Thread the seed meter hub (D) clockwise to move the seed disk closer to the wear pads (E).
 - Thread the seed meter hub (D) counterclockwise to move the seed disk away from the wear pads (E).
7. Align the slot in the hub with the hole in the shaft and install the spring clip (C).



BM028650—UN—15NOV18

8. Install the seed disk (F) and lock the hub handle (G).
9. Check the adjustment:
 - a. Release and support the meter assembly away from the motor drive.
 - b. Rotate the handle clockwise.
 - c. If the handle clicks out of the detent in clockwise direction while attempting to rotate, the hub is too tight. Loosen 1 or 2 holes on the spindle.
 - d. Repeat the hub adjustment until it is correct.

IMPORTANT: Avoid warped seed disks. Do not store the seed disks inside the meters. Do not store the seed disks under heavy items or hang them from the seed cell. Store them away from high heat and sunlight.

10. Release and support the meter assembly away from the motor drive.
11. Rotate the seed disk slowly by hand and verify that the seed disk has light contact with the double eliminator.
12. Rotate the seed disk slowly by hand and observe the seed disk light contact with the wear pads of the housing in area (H).
13. While rotating, inspect for gaps between the seed disk and the housing. If a gap is present, repeat the hub adjustment until the gap disappears. If necessary, replace the seed disk.
14. Reinstall the meter assembly onto the drive coupler and retain the meter position with the latch.
15. Unplug and connect the seed delivery hose, vacuum hose, and the vacuum sense hose (if equipped).
16. Close the seed meter cover.

ER40675,00003BC-19-13MAY20

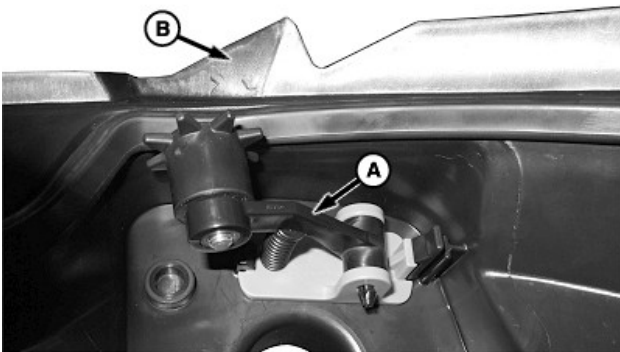
Knockout Wheel Operation

IMPORTANT: To avoid damage to the seed knockout wheel, never operate the meter drives without the seed disks installed. If the meter is operated without a seed disk installed, the rotating BrushBelt damages the seed knockout wheel.



A82565—UN—08MAY14

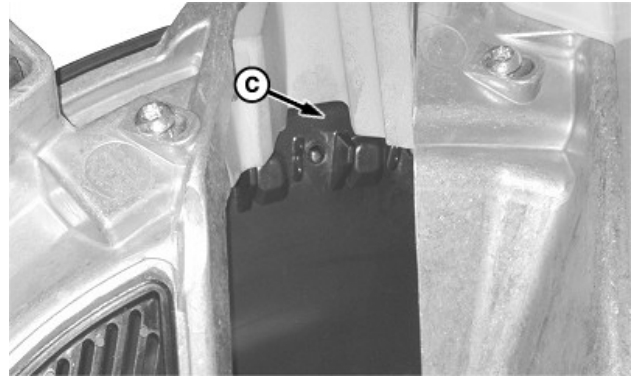
The seed knockout wheel (A) is used to ensure that the seeds are fully released from the seed cell and properly placed in the BrushBelt seed delivery system. Wheel projections engage the seed cell holes, forcing all of the seeds and foreign material to be ejected.



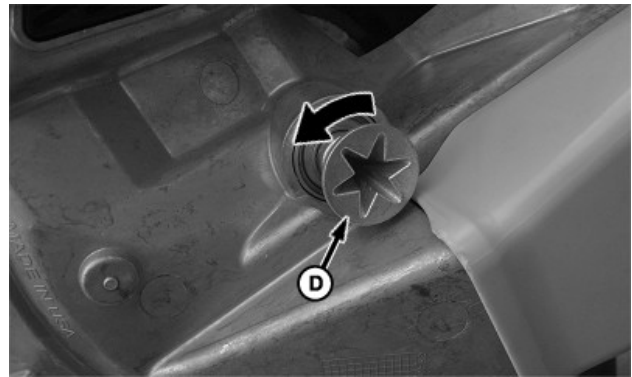
A85272—UN—18FEB15

If seed skips occur, inspect the seed knockout wheel for wear. Check if the wheel fully engages the holes in the seed disk.

1. Remove the seed meter assembly.
2. Check if the seed knockout wheel (A) is fully seated position in the seed meter dome (B).



A85273—UN—18FEB15



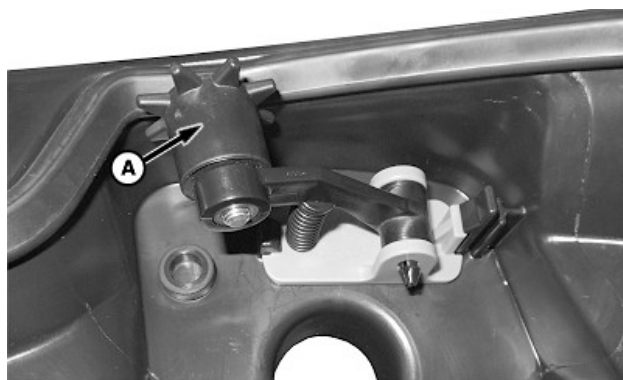
A85274—UN—18FEB15

3. Check if the seed knockout wheel engages the holes in the seed disk (C) as shown by rotating the meter drive coupler (D) on the seed meter assembly.
4. If the seed knockout wheel is not aligned with the holes in the seed disk, adjust the meter hub height or replace the seed knockout wheel. Check the alignment again.
5. Install the seed meter assembly. (See Remove and Install the ExactEmerge Seed Meter in this section.)
6. Repeat the steps on all of the meters where seed skips occur.

E443CH7,1750695861158-19-26JUN25

Install the Knockout Wheel Assembly

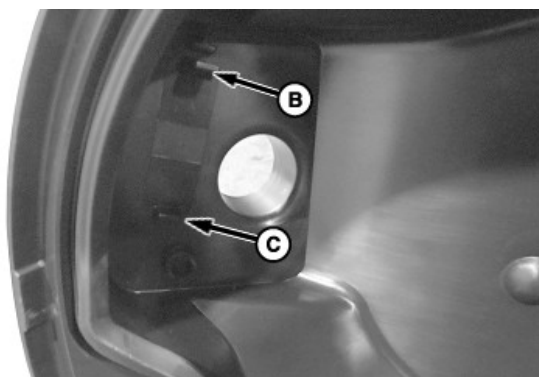
IMPORTANT: Damage to the knockout wheel occurs when the runoff function is performed without the seed disk installed.



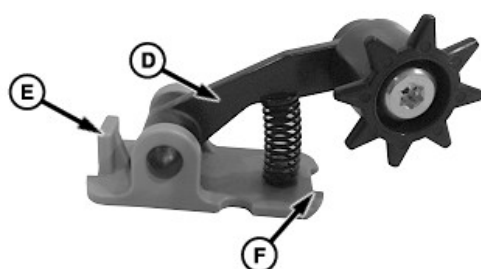
A82565—UN—08MAY14

NOTE: The knockout wheel (A) is used to ensure that the seeds are fully released from the seed cell holes. Wheel projections engage the seed cells to eject all of the seeds and foreign material.

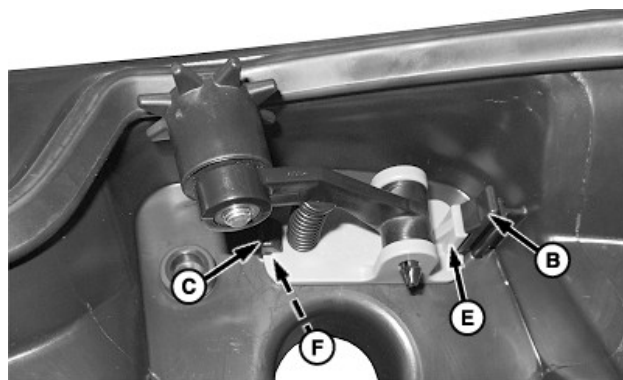
1. Open the seed meter (See Remove and Install ExactEmerge Seed Meter in this section.)



A77896—UN—27AUG13



A82575—UN—09MAY14



A82567—UN—08MAY14

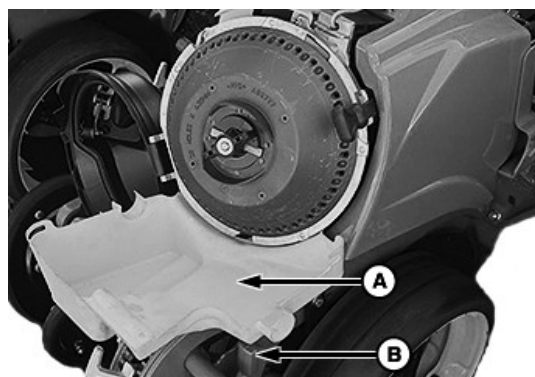
2. Install the knockout assembly (D) inside the seed meter dome by sliding the slot (F) into position under the fastener (C).
3. Slightly pull back on the clip (B). Position the tab (E) and release the clip. Verify that the clip locks over the tab as shown.

NOTE: When closing the seed meter dome, verify that the knockout wheel is aligned with the row of the seed cells on the seed disk.

a3rfggt,1705948006093-19-22JAN24

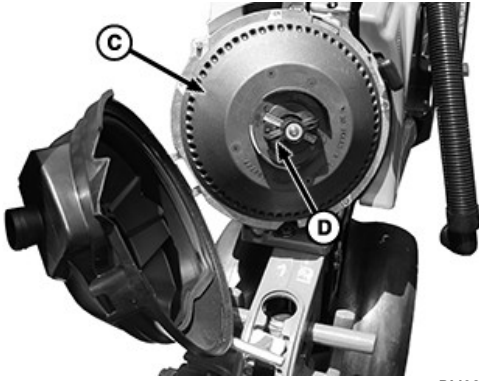
Remove the Seed Disk

CAUTION: Be careful if using seed treatments when opening the seed meter dome. Chemicals cause eye, skin, or breathing problems. Wear mask, gloves, and goggles. Read and follow the safety instructions on the product label.



BM028819—UN—24JAN18

1. Install the cleanout tray (A) by supporting it on the arm (B) of the row unit as shown.
2. Open the seed meter dome.

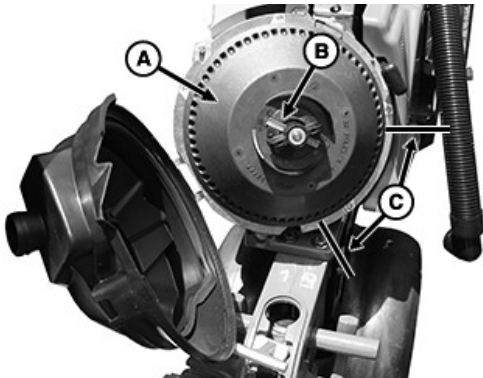


BM028644—UN—14NOV18

3. Rotate the hub handle (D) until it is aligned with the slots in the seed disk (C).
4. Pull the seed disk out of the hub.
5. Return the cleanout tray to the storage position.

NN32476,000037E-19-28APR21

Install the Seed Disk



BM029875—UN—15NOV18

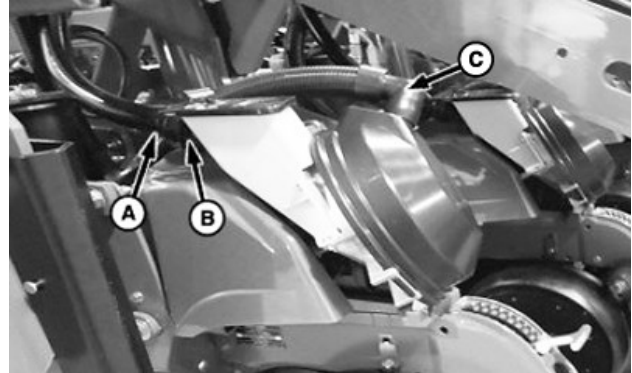
1. Open the seed meter cover.
2. Fit the seed disk (A) into the housing.
3. Hold the seed disk stationary and rotate the hub handle (B) into the locked position.
4. Inspect the hub adjustment.
 - Move the seed meter assembly away from the motor drive and verify that there is light contact between the seed disk.
 - Check if the four wear pads in the meter housing are positioned correctly in relation to the seed disk.
 - Check if there is not any gaps in the section (C) while the seed disk is routed, to avoid loss of seeds.

ER40675,00003BB-19-13MAY20

Remove and Install the ExactEmerge Seed Meter

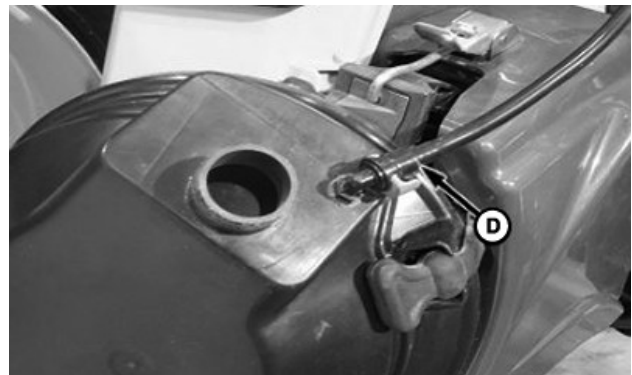
Remove the Seed Meter and Hopper

IMPORTANT: To avoid damage, use caution when removing the seed meter from the drive motors. Excessive force results in the housing tab breaking off.



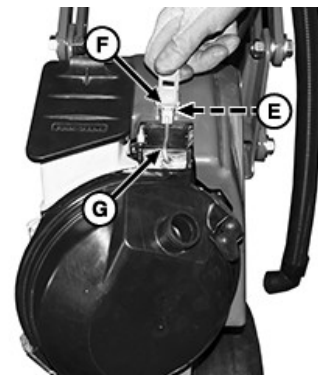
BM030038—UN—11FEB19

1. Rotate the central commodity system (CCS) seed delivery hose (A) counterclockwise until it unsnaps from the hopper fill neck (B) and pull off the hose.
2. Remove the vacuum hose (C).



BM030039—UN—11FEB19

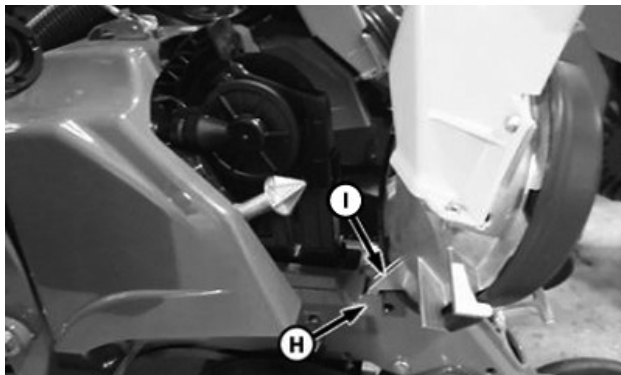
3. Remove the vacuum sense hose (D).



BM030040—UN—11FEB19

4. Push down the clip (E) while lifting the latch (F) to unlock the seed meter from the top area of the BrushBelt cartridge.

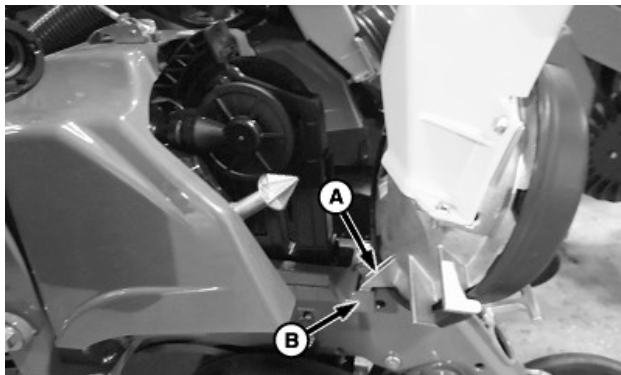
5. Remove the hook (G) from the slot in the meter tab.
6. Remove the seed meter coupler from the drive motor shaft.



BM030041—UN—11FEB19

7. Remove the housing tab (I) from the bracket base (H).

Install the Seed Meter and Hopper



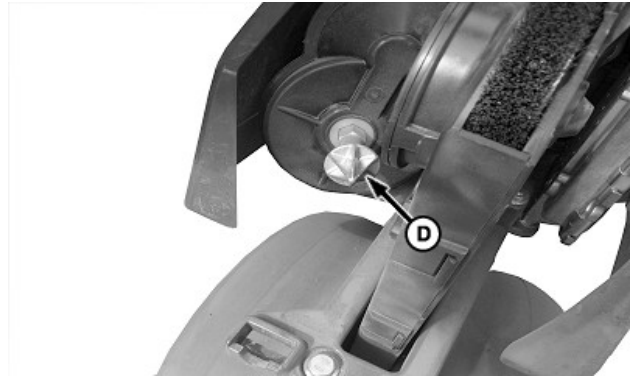
A83752—UN—29SEP14



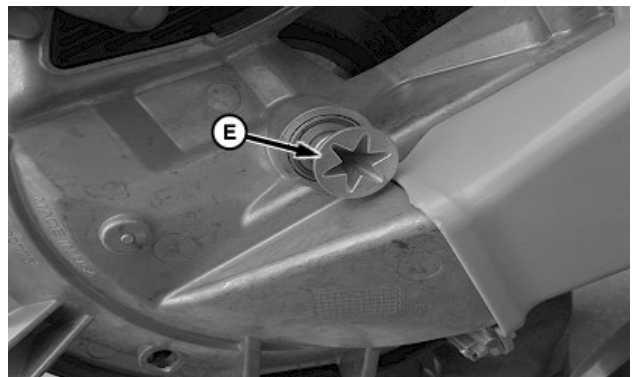
A77995—UN—27AUG13

1. Position the housing tab (A) into the bracket (B) of the seed meter assembly (C).

NOTE: Turn the driveshaft to align it with the coupler as needed.

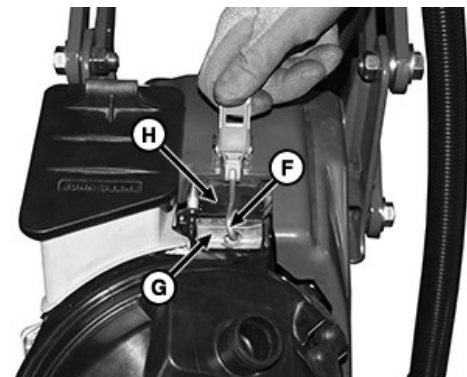


A83750—UN—29SEP14



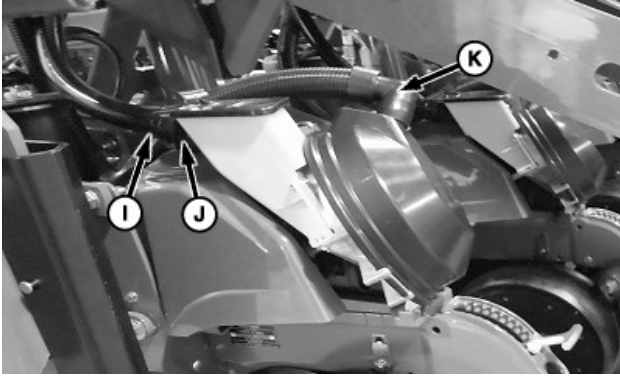
A83751—UN—29SEP14

2. Align the motor shaft (D) and the seed meter coupler (E), being careful to align the meter housing to the BrushBelt cartridge.



BM030042—UN—11FEB19

3. Position the hook (F) through tab (G) on the meter and the top area (H) of the BrushBelt cartridge.
4. Fasten the latch until the clip snaps.



A77791—UN—27AUG13

5. Push the CCS seed delivery hose (I) onto the hopper fill neck (J) and rotate it clockwise until it snaps into place.
6. Install the vacuum hose (K).



A79592—UN—12DEC13

9. Install the sense hose connector onto the port (N) of the seed meter dome. Release tab and continue pushing onto the port until the connector makes a click sound.

NOTE: Finished attachment of the vacuum sense hose must match graphic shown.



BM030043—UN—11FEB19

7. On row units with vacuum sensors, locate the vacuum sense hose (L) and verify that the hose is not dirty or kinked before attaching to meter.
8. Push and hold the tab (M) for the sense hose connector.

10. Verify that the hose is connected properly by lightly pulling on the hose:
 - If the hose pulls off easily, it was not seated correctly. Install the hose again. If the hose connection is still problematic, verify that the opening to the connector has no debris and the tab moves freely. If the problem persists, contact a John Deere dealer or other service provider for possible replacement of connector.
 - If the hose stays connected to the port, it is seated correctly.

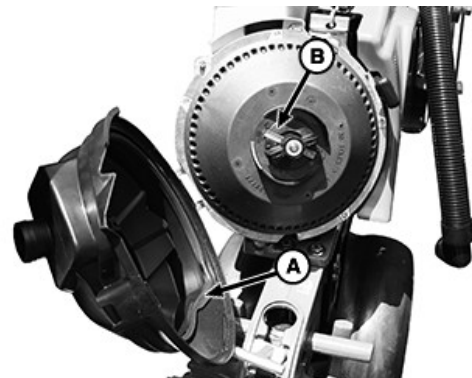
a3rfgg, 1705948111812-19-14APR26



BM030044—UN—11FEB19

Inspect the ExactEmerge Meter Unit

1. If using seed treatments, remove any buildup occurring in the bottom of the hopper.



BM029877—UN—15NOV18

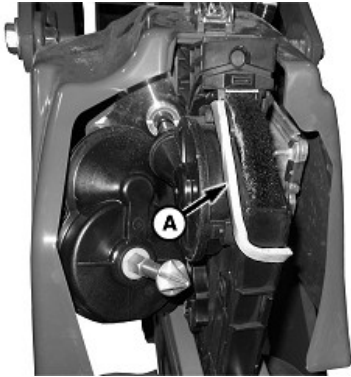
2. Lay the hopper aside and open the seed meter cover (A) to remove the seed disk.
3. Determine if the mechanism is free of dirt, chaff, or other foreign material by turning the meter hub (B) by hand.

4. Inspect the brush for gaps, the hub seal for cracks, and the vacuum seal for cracks or wear areas.
5. Replace if necessary.

a3rfgg,1705948111688-19-14FEB24

Remove and Install the BrushBelt Cartridge

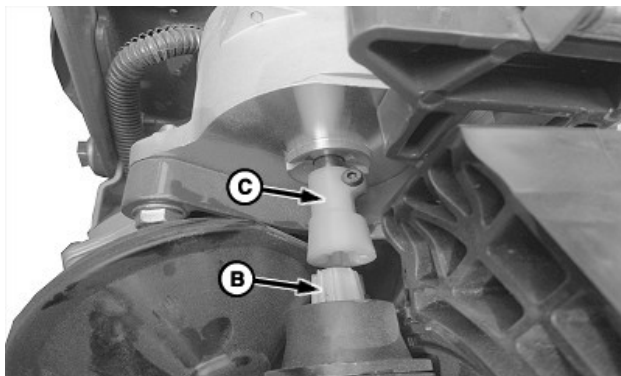
Remove the BrushBelt Cartridge



A89526—UN—08FEB16

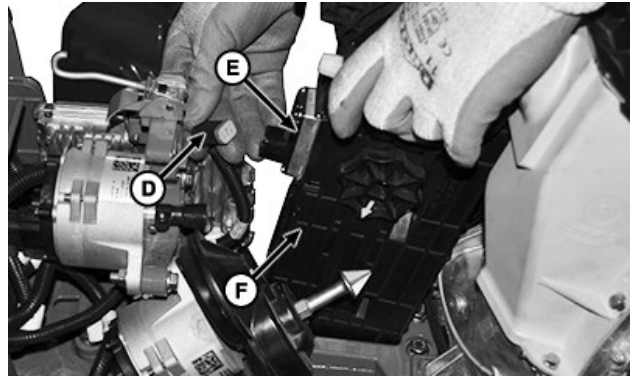
1. Remove the seed meter and the hopper. (See Remove and Install the ExactEmerge Seed Meter.)
2. Note the position of the depth adjustment handle and move to the minimum (shallowest) position.
3. Inspect the cartridge seal (A) on the edge of the BrushBelt cartridge. The seal is used when planting small seeds. Replace the seal when damaged.

NOTE: When planting sorghum, small corn, or small cotton seeds, the cartridge seal must be used. The cartridge seal does not interfere when planting other seeds.



BM028653—UN—30NOV17

4. To separate the driveshaft (B) and the motor coupler (C), pull back on the top of the BrushBelt cartridge (F).



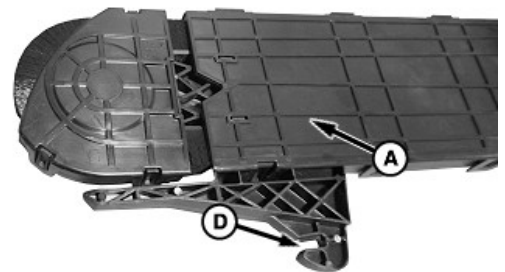
BM028654—UN—11FEB19

5. Pull slightly upward on the cartridge to expose and disconnect the harness connector (D) from the seed sensor (E).
6. Remove the cartridge from the row unit.

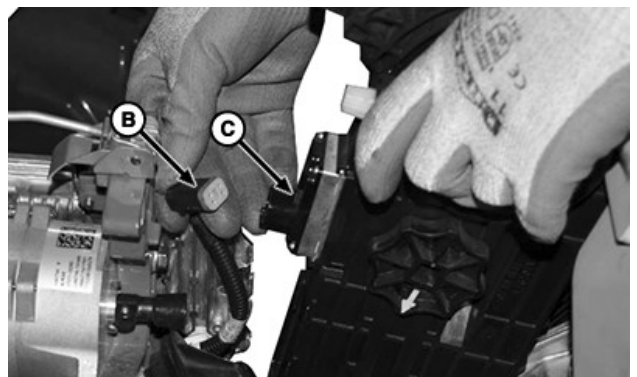
Install the BrushBelt Cartridge

1. Note the position of the depth adjustment handle and move to the minimum (shallowest) position.

NOTE: Place the cartridge and harness connector inside the planting unit at the same time.

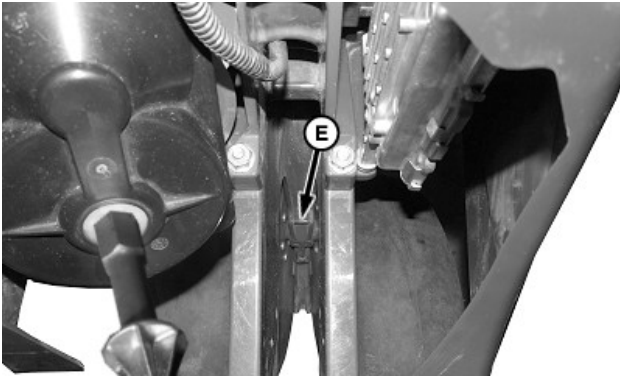


A78705—UN—13DEC13



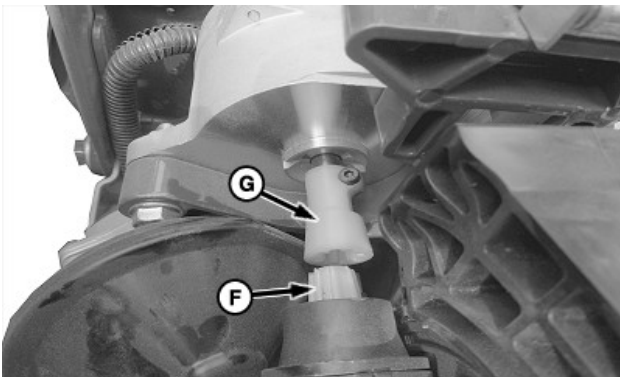
BM030045—UN—11FEB19

2. Partially install the BrushBelt cartridge (A) into the row unit, then connect the harness connector (B) to the seed sensor (C).



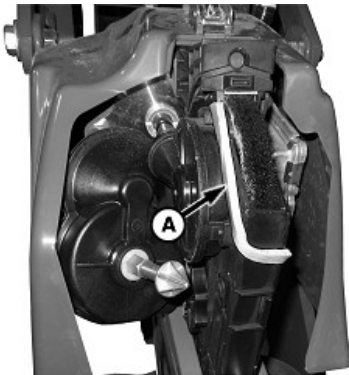
A83754—UN—29SEP14

3. Align and push the hook (D) onto the alignment pin (E) until the cartridge locks onto the pin.



A83755—UN—29SEP14

4. To lock the cartridge in place, align the driveshaft (F) with the motor coupler (G) and press the cartridge forward. Verify that the seed sensor harness has not been pinched during the installation of the BrushBelt cartridge.



A89526—UN—08FEB16

5. Install the seed meter and the hopper. (See Remove and Install the ExactEmerge Seed Meter.)

NOTE: When planting sorghum, small corn, or small cotton seeds, the cartridge seal must be used. The cartridge seal does not interfere when planting other seeds.

NOTE: To verify that installation is correct, pull the cartridge assembly to the rear. Pull rearward on the cartridge assembly. If the bottom of the cartridge moves, the cartridge hook (D) is not properly seated.

6. Remove and repeat the installation process until the cartridge is seated properly.
7. Return the depth adjustment handle to the previous position.

a3rfgg,1705948111398-19-14FEB24

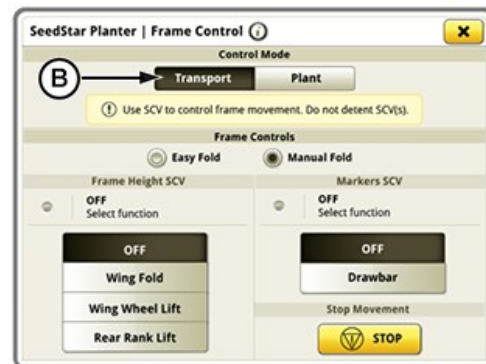
Clean Out Seed Hoppers and Vacuum Metering Units

CAUTION: Avoid crushing injury. SeedStar frame control must be on Transport mode, service locks must be installed, and the procedure below must be followed. When procedure is complete, place tractor selective control valve (SCV) in neutral position before switching the mode to Plant.

CAUTION: Avoid crushing injury. If the rockshaft row units are raised, rockshaft lockout pins must be installed. The rockshafts lower when the SCV lever is moved to lower position.

NOTE: With the frame in raised position, the CCS row unit switch disables CCS fan.

1. Raise machine.
2. Place tractor in park and apply park brake.
3. Install the service locks on the wing frame and on the center frame. (See Install the Service Locks in Maintenance and Service Intervals section.)
4. Install the rockshaft assembly planting unit lockout pins. (See Safe Transport in Transport section.)



CQ1371625—UN—04JUL24

5. Select Transport (B) mode on the SeedStar 5 monitor.

6. Lower machine onto service locks.



CQ1452071—UN—25MAR26

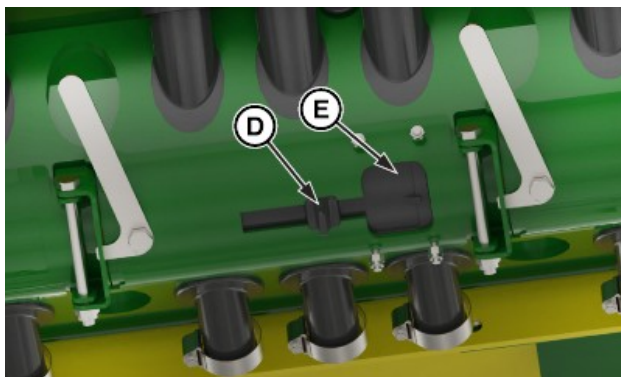
IMPORTANT: Avoid damage to the machine. Make sure that cleanout doors on CCS tanks are closed before folding machine.

7. Cleanout door (C) cannot be closed once cleanout has been started.

IMPORTANT: When cleaning tank for certified seed, remove all seed from the tank with a stiff bristled, 203 mm (8 in) wide broom a 1.4 m (4.5 ft) long handle.

IMPORTANT: Remove any buildup of seed treatment or talc with a stiff bristled, 203 mm (8 in) wide broom with a 1.4 m (4.5 ft) long handle.

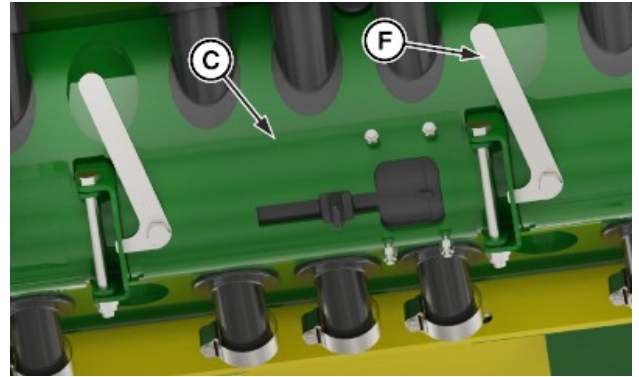
8. To catch seed from the tank, place a container under cleanout doors (E).



CQ1452073—UN—25MAR26

9. To operate cleanout door (E), slide handle (D). Once most of the seed has been removed, close the door.

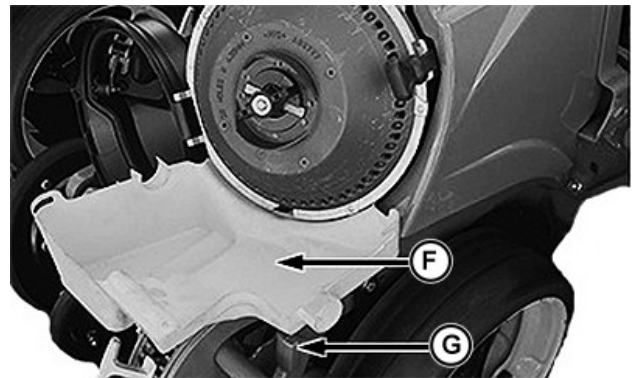
NOTE: Cleanout door (C) is used to empty tanks and for a controlled cleanout.



CQ1452072—UN—25MAR26

10. To open cleanout door (C), rotate lever (F) and catch remaining seed from the tank.
11. Close the cleanout door (C).
12. Repeat for all other cleanout doors (C).
13. Activate the tractor SCV to adjust the CCS fan until 20 inches of water at the pressure gauge is achieved.

CAUTION: Avoid injury. Use caution if using seed treatments when opening meter domes. Seed treatments cause eye, skin, or breathing problems. Read and follow the safety instructions on the product label.



CQ1371697—UN—04JUL24

14. Install seed meter catch tray (F) by seating it on depth gauge wheel adjustment (G).
15. Open the seed meter cover and slowly remove the seed disk to purge seed from hose and meter housing.
16. Install seed disk. Repeat on all rows.
17. Install the catch tray on the side of the ladder again.

CAUTION: Avoid crushing injury. Place the tractor selective control valve (SCV) in neutral position before switching the mode to Plant.

18. Place tractor SCV in neutral position.
19. Remove service locks.

20. Install the rockshaft assembly planting unit lockout pins back to the plant position.
21. Select the desired mode on the SeedStar 5 monitor and resume the operation.

FHSSYU9,1774290053376-19-16APR26

Set Vacuum Level

Always verify vacuum with a field check.

NOTE: Some seed sizes, seed shapes, and situations require vacuum levels slightly higher or lower than the settings shown. The vacuum charts are a guide and are accurate in most conditions.

The vacuum level is controlled with the tractor hydraulic settings.

Use the vacuum level charts for the initial vacuum setting and adjust the level as needed. The charts are based on a typical ground speed and population rate. If high population rates or high ground speeds affect seed placement, increase the vacuum level. If low population rates or low ground speeds affect seed placement, decrease the vacuum level.

NOTE: At any setting, the vacuum level is slightly lower when the hydraulic oil is cold or when seeds are not covering holes in the seed disk. Make the final setting after the oil has warmed up and the seed disks are full.

Set the vacuum level as follows:

1. Verify that the seed meters are set up for the crop.
2. Engage the vacuum (SCV lever in the detent position). Let the oil warm for approximately 15 minutes.
3. Fill the CCS tanks with seed and engage the blower until the meter hoppers fill with seed.

NOTE: See the SeedStar Application Help or the SeedStar Operator's Manual for additional information about all onscreen functions.

4. To fill the seed meters and seed disks with seed, plant at short distance or use the meter fill function shown onscreen.
5. To adjust the vacuum manually:
 - a. Adjust vacuum level by SCV flow.
 - b. Start adjustment at 2, and increase or decrease it as necessary.
6. To adjust the vacuum automatically:
 - a. Setup SCV at 7.

- b. Adjust vacuum level by increasing its value on monitor.

7. To adjust vacuum level, it is necessary to check double eliminator adjustment. The vacuum and the double eliminator are related, so both of them must have the correct adjustment:

- a. Identify the necessary vacuum level to a proper seed singulation.
 - b. Verify on monitor and furrows if doubles or skips are occurring.
 - c. If doubles or skips are occurring, adjust the double eliminator in a more aggressive way, so that only one seed keeps held in the disk hole.
 - d. If it is not possible to eliminate doubles and skips with double eliminator adjustment, reduce vacuum level gradually until the proper seed singulation is reached.

E443CH7,1750695879227-19-26JUN25

Central Commodity System (CCS) and Meter Lubricant

Use of Graphite Lubricant—MaxEmerge 5e



A34471

A34471—UN—11OCT88

CAUTION: Avoid personal injury or death. Follow the precautions indicated by the chemical manufacturer when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.

Graphite lubricant is required for optimum performance of the vacuum gauge and of the central commodity system (CCS). Seed properly treated with graphite releases from the seed disk more consistently, leading to more accurate spacing when the seed is placed in ground.

Farmer-Applied Seed Treatment

For best performance, use of farmer-applied seed treatments is **not** recommended. If used, apply any seed treatment and allow it to fully dry before placing the seeds in the tanks.

Apply the seed treatment **BEFORE** applying graphite lubricant to ensure that the treatment adheres to the seed properly while minimizing the buildup on the meter components. If buildup of the treatment still occurs, contact the chemical manufacturer for assistance.

When using seed treatments, clean the meters and the seed disks as needed. Seed disks can be cleaned with warm, soapy water. Spray graphite on the vacuum seal side of the disk as needed. (See Lubricate Vacuum Seal and Seed Disk—MaxEmerge 5e and ExactEmerge in Service-Planting Unit—Seed Meter and Hopper section.)

IMPORTANT: Avoid damage to the machine. If farmer-applied treatments are used, carefully follow the recommendations of the chemical manufacturer. **HIGH-OIL-CONTENT TREATMENTS ARE NOT RECOMMENDED.**

Chemical reaction between farmer-applied seed treatments and treatments commercially applied to the seeds can cause seed treatments to become sticky. Certain temperature and humidity levels can further complicate the material compatibility.

Mixes of seed and seed treatment must be free of clumps.

IMPORTANT: Graphite has to be thoroughly incorporated in the tanks, so all seeds are evenly coated.

Commercially Treated Seed

Refer to the following charts of graphite application rate for planting commercially treated seeds with no farmer-applied seed treatments.

Some insecticide-treated seed is coated with commercially applied graphite. Even if the graphite is commercially applied, the required amount of graphite shown in the following table must be added to maintain the metering performance.

CCS Graphite Application Rate		
NOTE: Graphite must be mixed proportionately and thoroughly with the seed to ensure movement through the CCS system and proper metering.		
Model	CCS Tank Size	Amount of Graphite
3119FT and 3123FT	1 CCS—1160 L (1450 kg)	5.0 kg
3127FT and 3131FT	2 CCS—2320 L (2900 kg)	10.0 kg

Adjust these rates as necessary so all seeds become coated with graphite, and an accumulation of graphite at the bottom of the tank is avoided.

Double the graphite recommendation when planting large seeds, seeds with a heavy treatment, or in humid planting conditions.

In certain situations, like combinations of sticky seed treatments, large or small seed, and high humidity, it can be necessary to add up two or three times the amount of graphite shown in the tables.

IMPORTANT: Avoid damage to the machine. It is necessary to clean any buildup of seed treatments and graphite out of the hoppers between fills.

If the graphite builds up at the bottom of the tanks and the vacuum manifolds require more frequent cleaning, reduce the graphite rate accordingly. If a coating of seed treatment is found on the seed disks, increase the amount of graphite.

E443CH7,1750695907196-19-26JUN25

Use of a Blended Talc and Graphite Lubricant—ExactEmerge

NOTE: After applying the talc and the graphite mixture to the seed, it is necessary to wait for the seeds to dry before planting. This recommendation avoids sensor failure.



A34471

A34471—UN—11OCT88

CAUTION: Avoid chemical injury to eyes, skin, and lungs when accessing and handling components coated with a seed treatment. If using seed treatments, use caution when handling parts coated with it. Read and follow the safety instructions on the product label.

IMPORTANT: Avoid damage to the machine. Only use approved blends of talc and graphite lubricant. (Contact a John Deere dealer or other service provider.)

At the beginning of each season, add the blended talc and the graphite lubricant to the empty central commodity system (CCS) tanks. Also, add 100 mL (3.38 fl oz) to each empty row unit mini-hopper.

The use of a blended talc and graphite lubricant improves the performance of the vacuum seed sensor and CCS system.

A lubricant (fluency agent) is required for an optimum performance of the vacuum gauge and of the CCS system. To obtain a consistent seed release from the seed disk and to improve the spacing accuracy, properly lubricate the seeds.

Farmer-Applied Seed Treatment

Farmer-applied seed treatments are NOT recommended.

IMPORTANT: Avoid sticky seeds and meter components. It is possible for seeds to become sticky due to chemical reactions between the farmer-applied seed treatments and the commercially applied treatments. If farmer-applied treatments are used, carefully follow the recommendations of the chemical manufacturer. Avoid treatments with high oil content. Certain temperature and humidity levels also complicate the material compatibility.

If a farmer-applied treatment is used, apply the seed treatment to the seed before the lubricant and allow the seed treatment to dry before placing the seeds in the tanks. If the seed treatment accumulates in the sensor

while using the following lubricant application rates, contact the treatment manufacturer for assistance.

Commercially Treated Seed

Mixes of seed and seed treatment must be free of clumps.

Some treated seed is coated with commercially applied lubricant. To maintain the sensor performance, apply the recommended amount of lubricant, in addition to the commercial application.

NOTE: Any additives other than John Deere powdered lubricants leave a residue on parts that affect the planting rates.

Blended Talc and Graphite Application Rate

Apply lubricant to the seeds in the mixer where the seed treatment and/or inoculation is carried out. All seeds must be coated to ensure movement through the CCS system and for a proper meter performance. Mix seed and lubricant as necessary.

Model	CCS Tank Capacity	Lubricant Amount
3119FT and 3123FT	1 CCS—1160 L (1450 kg)	4.0 kg
3127FT and 3131FT	2 CCS—2320 L (2900 kg)	8.0 kg

NOTE: The quantities of lubricant shown in the table are indicated for the cultivation of soybean, corn, and cotton. For other crops, use the same proportion to start the work, adjusting the amount of lubricant, if necessary.

NOTE: The best talc/graphite ratio found is 50/50, so consider it for starting the work, adjusting if necessary.

NOTE: If the lubricant builds up at the bottom of the hopper, reduce the quantity.

Planting conditions, temperature, and humidity may require higher volume of mix.

Adjust these rates as necessary so that all seeds become coated with lubricant, while avoiding an accumulation of lubricant at the bottom of the tank.

When there is a combination of reinforced treatments, sticky seeds or in conditions of high humidity, gradually increase the amount of the lubricant until the satisfactory result is obtained.

IMPORTANT: Avoid the formation of lubricant clumps. Clean buildup of seed treatments and lubricant out of hoppers between fills.

If the lubricant builds up at the bottom of the hopper and the vacuum tubes require more frequent cleaning, reduce the lubricant rate. If a coating of seed treatment

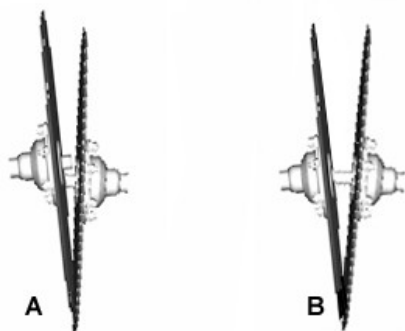
is found on the seed disks, increase the amount of lubricant.

When using seed treatments, clean the sensors and the seed disks as needed. Clean the seed disks with warm, soapy water. Spray graphite on the vacuum seal side of the disk as needed. (See Lubricate Vacuum Seal and Seed Disk-MaxEmerge 5e and ExactEmerge in Service-Planting Unit-Seed Meter and Hopper section.)

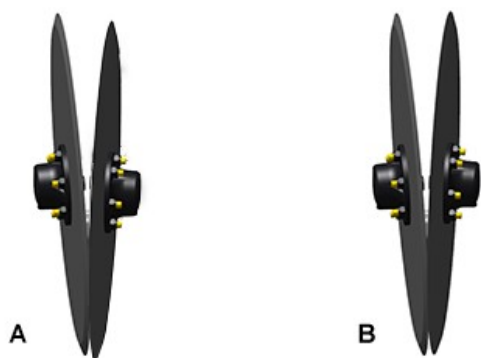
PS9EIDU,1773085304391-19-09MAR26

Seed Double Disk

Row Unit Double Disk Position



MaxEmerge 5e Offset
CQ191292—UN—02DEC04



MaxEmerge 5e and ExactEmerge EmergePro
CQ1379469—UN—11OCT24

The double disks can be installed both in aligned and offset configuration:

- Offset (A) is recommended for no-till planting, for more difficult ground conditions, with considerable straw coverage and uneven surfaces.
- Aligned (B) is recommended for the conventional planting, however, they can also be used for no-till planting as long as the soil is light and with little straw coverage, known as semi-direct. In this case, the fertilizer furrow opener of the offset double-disk type is recommended.

NOTE: *NOTE: Recommendations are for reference. Check the result of each adjustment in practice.*

NOTE: *For procedure of row unit double disk position change applied to EmergePro Row Unit, see Replace the Furrow Opener Blades (ExactEmerge and MaxEmerge 5e EmergePro Only) in this section.*

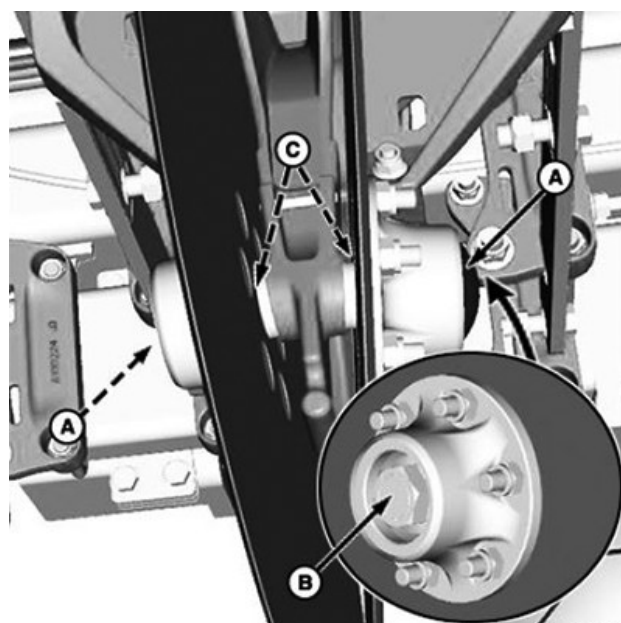
NOTE: *For procedure of row unit double disk position change applied to Offset Row Unit, see Replace the Furrow Opener Blades (MaxEmerge 5e Offset Only) in this section.*

Adjust the Play Between Double Disks

Park the planter on level ground.

CAUTION: To avoid serious injury or death, properly support the machine.

There should be a contact between the two disks, improving the ground attack and preventing dirt from entering into the disks. When some play appears between the furrow disks, proceed as follows:



BML016014—UN—24JAN20

1. Remove the protection case (A).

NOTE: *It is recommended to replace the protection case, in order to avoid dirt from entering in the bearings.*

2. Loosen the screws (B) to remove the double disks.
3. Remove the required number of washers (C), so that disks are in contact with each other.

IMPORTANT: Make sure that there is a contact between the disks.

IMPORTANT: The ideal pressure is when the disks are in contact with low friction, as an excessive contact between the disks can generate premature wear.

ER40675,0000E87-19-10MAR20

Replace the Furrow Opener Blades (ExactEmerge and MaxEmerge 5e EmergePro Only)

CAUTION: To avoid serious injury or death, properly support the machine.

IMPORTANT: Avoid premature wear. Do not use a new disk blade with a used disk blade.

1. Park the planter on level ground.



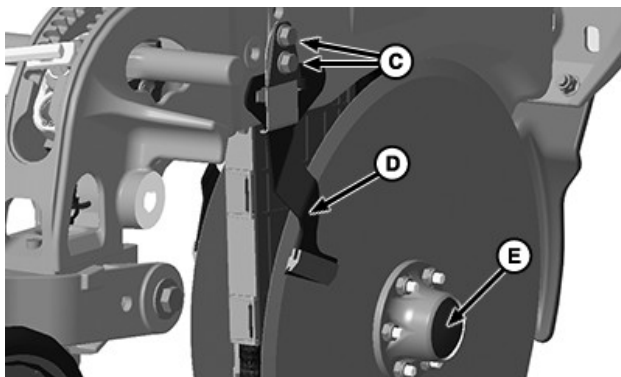
BM028670—UN—31OCT18

2. Remove screw (A), pivot arm (B), and the depth gauge wheel.

Specification

Depth Gauge Wheel
Screw—Torque. 280 N·m
(206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the screw (A). See more information at *Special Tool for Tightening Planter Screws* in the section *Accessories and General Equipment*.



BM028671—UN—26NOV18

3. Remove screws (C) and disengage scraper assembly (D) from the row unit.

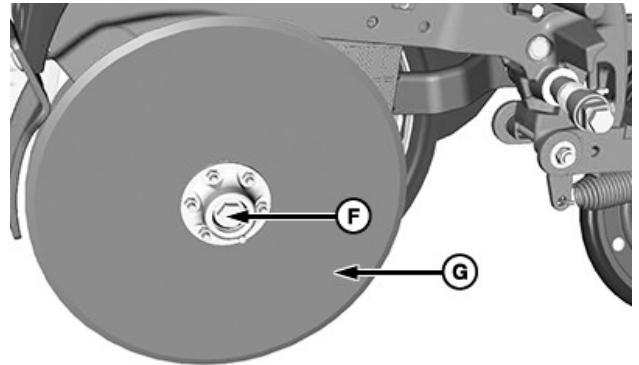
Specification

Screw M8 (10.9)—Torque. 30 N·m
(22 lb·ft)

Specification

Screw M6 (10.9)—Torque. 15 N·m
(133 lb·in)

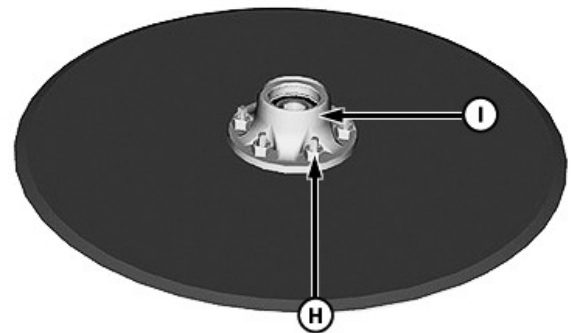
4. Remove hub cap (E).



BM028672—UN—15OCT18

5. Remove screw (F) and blade (G).

CAUTION: Avoid injury from sharp edges on the blades (G). Wear protective gloves and handle the blades carefully.

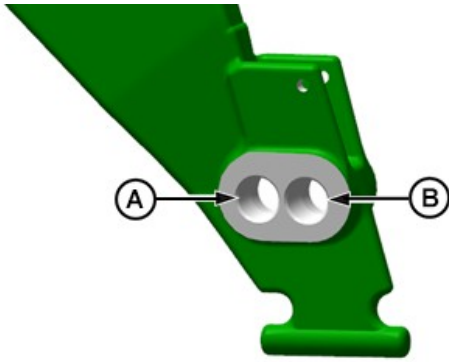


BM028673—UN—31OCT18

6. After removing the blade, put it on a safe place, remove nuts and screws (H) and flange (I).

NOTE: During new disks assembling, it is necessary to analyze the number of washers required to mount each disk.

7. To assemble the blades, perform the procedure in reverse order observing the following:



BML047103—UN—03AUG23

The row unit shank has two holes (A and B) for the installation of the double disk.

- If the double disk are to be aligned, install both on rear hole (B).
- If the double disk are to be offset, choose which double disk will be installed ahead for the offset configuration, and install it on rear hole (B). Install the disk that will be positioned behind on front hole (A).

IMPORTANT: The offset of the double disks in an alternating pattern between the row units ensures better alignment of the machine.

8. Tighten flange nuts (H) to specification:

Specification

Flange Nut—Torque. 40 N·m
(29 lb·ft)

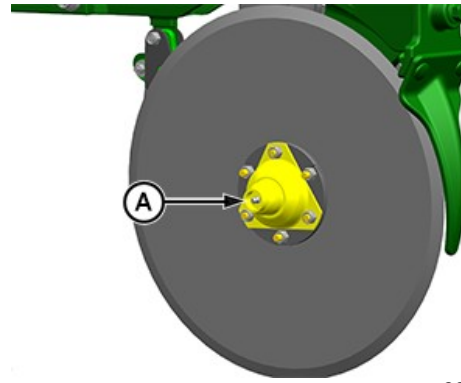
E443CH7,1750695944268-19-26JUN25

Replace the Furrow Opener Blades (MaxEmerge 5e Offset Only)

CAUTION: To avoid serious injury or death, properly support the machine.

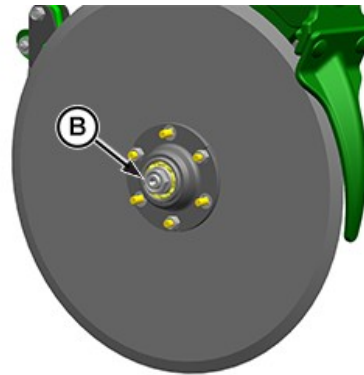
IMPORTANT: Avoid premature wear. Do not use a new disk blade with a used disk blade.

1. Lift the planter at a clean and level location.
2. Position service locks on hydraulic cylinders.
3. Proceed as follows:
 - For odd rows: Remove the bearing from the left side of the disk.
 - For even rows: Remove the bearing from the right side of the disk.
4. Remove depth gauge wheels if installed.



CQ1356209—UN—21FEB24

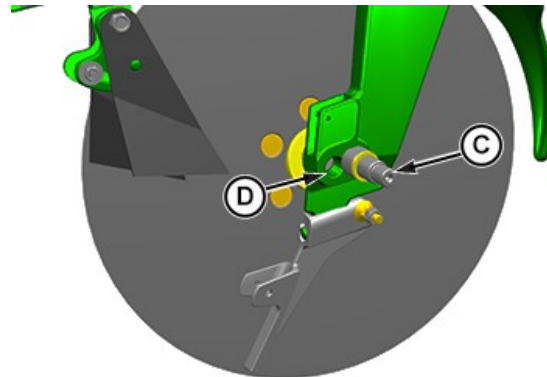
5. Remove seal cover (A) from the seed disk bearing.



CQ1357637—UN—21FEB24

6. Remove nut (B) and, using DQ33723 special tool supplied with machine, remove seed disk.

CAUTION: Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.



CQ1356208—UN—21MAR24

7. Using CQ80817 special tool supplied with machine, remove shaft (C) and install it to hole (D). This changes double disk position configuration from offset to aligned one.
8. Install components observing tightening torque for the nut (B).

Specification

Nut—Torque. 120—150 N·m
(88—110 lb·ft)

IMPORTANT: The offset of the double disks in an alternating pattern between the row units ensures better alignment of the machine.

NOTE: The ideal pressure is when the disks are in contact with low friction, as an excessive contact between the disks can generate premature wear.

E443CH7,1750695955328-19-26JUN25

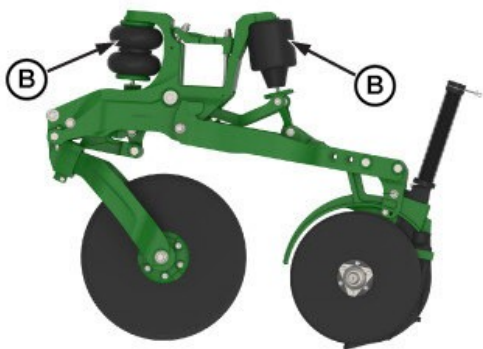
Pneumatic Downforce (PDF)

Pneumatic Downforce



CQ1457186—UN—20APR26

Pneumatic Downforce (PDF) of the Seed Row Unit



CQ1454538—UN—31MAR26

Pneumatic Downforce (PDF) of the Fertilizer Row Unit

The pneumatic downforce (PDF) system is composed by seed row unit PDF (A) and fertilizer row unit PDF (B). All information shown here refers to both systems.

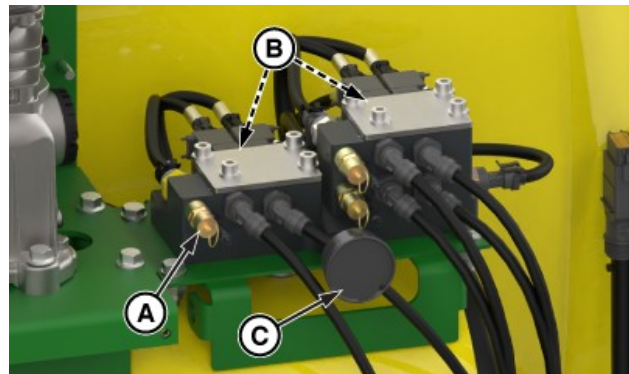
Air Compressor System Failures

CAUTION: Avoid serious injury from exploding parts due to over-pressurization or operating the system without all of the components in place.

- Do not inflate the system above 827 kPa (8.2 bar) (120 psi) or 1779 N (400 lb) downforce.
- Do not remove the pressure relief valve.
- Do not pressurize the system unless all of the row unit components are in place.

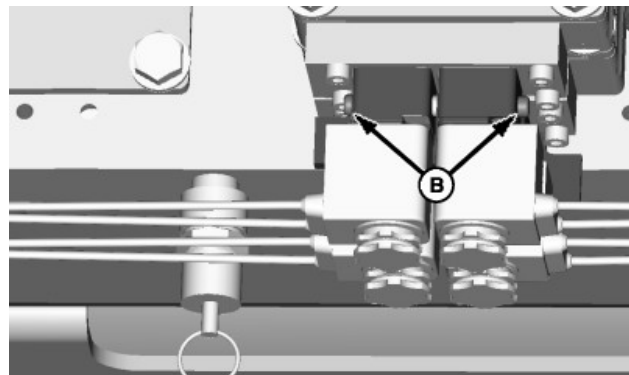
IMPORTANT: Do not lower the machine with zero air pressure in the system. Maintain 34—55 kPa (0.3—0.5 bar) (5.0—8.0 psi) or 76—120 N (17—27 lb) downforce in the system to avoid kinks in the air springs. If an air spring kinks, raise the machine and pressurize the system until the air springs straighten out.

Do not operate if a pinched or unrolled air spring occurs. Reduce the system pressure. Manually roll the air spring over the lower piston. Incremental lowering of the machine helps to start the air spring rolling over the lower piston.



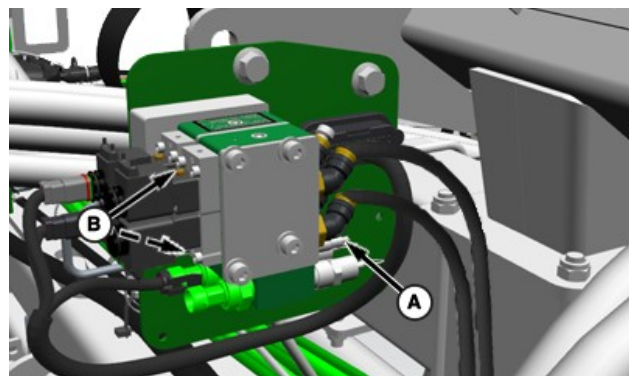
CQ1451597—UN—23MAR26

Hydraulic Compressor—Compressor on the Planter



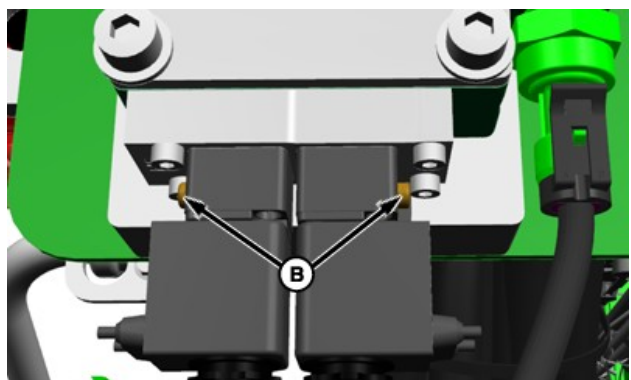
A87943—UN—30SEP15

Manual Override (Far Side of Valve Block)—Compressor on the Planter



BML029765—UN—02DEC22

Hydraulic Compressor—Compressor on the Tractor



BML029472—UN—06JUL22
Manual Override (Far Side of Valve Block)—Compressor on the Tractor

1. If the compressor system fails, charge the air spring circuit at the fill valves (A) with shop air.
2. If the control system fails, use the manual overrides (B) to increase or decrease the air spring pressure. Check the air spring pressure with a tire pressure gauge at the fill valve (A).

NOTE: If the planter uses the air compressor of the tractor, the air tank and gauge (C) are on the tractor.

3. The gauge (C) displays the air pressure in the tank. The normal operating range for the tank pressure is 790—1000 kPa (7.9—10 bar) (115—145 psi).

NOTE: The gauge (C) does not correspond to the pressure in the air springs.

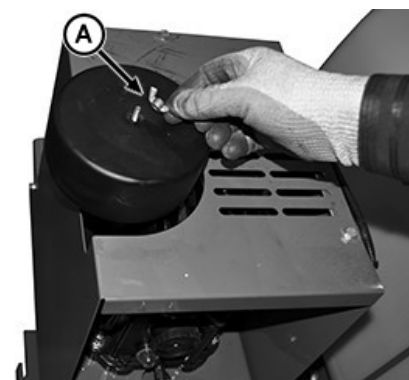
Clean or Replace the Air Compressor Filter

CAUTION: Avoid injury from sudden activation of the compressor. Turn off the tractor before service.

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

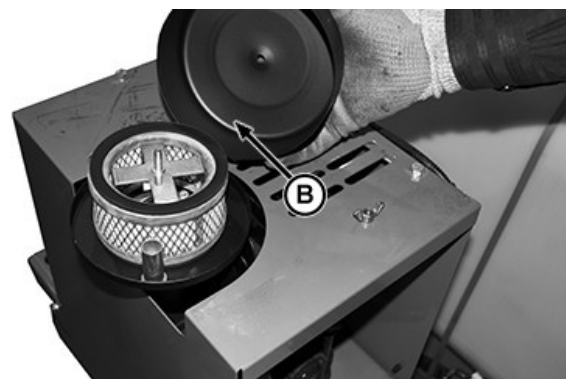
IMPORTANT: Avoid compressor damage. Clean the air filter element every 50 operating hours, or as required. Replace the air filter element every 100 operating hours. Filter cleanliness is critical to maintain the performance and service life of the air compressor.

1. Clean any dust from the area around the air filter.



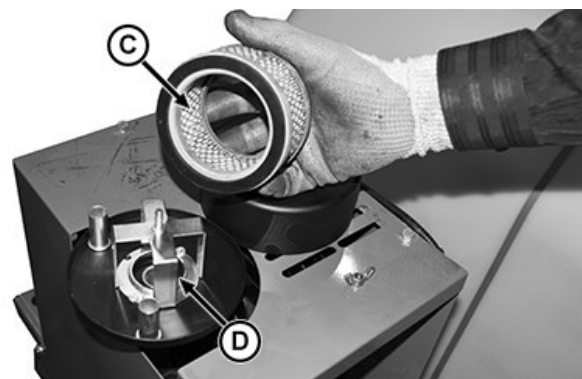
CQ1360312—UN—22FEB24

2. Remove the wing nut (A).



CQ1360313—UN—22FEB24

3. Remove the weather shield (B).



CQ1360314—UN—22FEB24

4. Remove the filter element (C).

IMPORTANT: Avoid filter and compressor damage. Do not damage the filter element while cleaning. To clean the filter, tap the filter lightly on a firm surface.

5. According to the machine operating hours, clean the air filter or purchase a new one.

IMPORTANT: Avoid compressor damage. Clean all excess material from the filter base (D) before installing the filter.

6. Install the filter element (C).

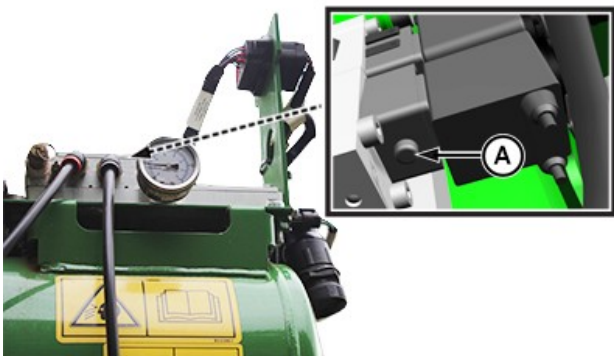
7. Install the previously removed weather shield (B) and wing nut (A).
8. Tighten the wing nut (A).

PS9EIDU,1773938684903-19-16APR26

Depressurize the Pneumatic Downforce System

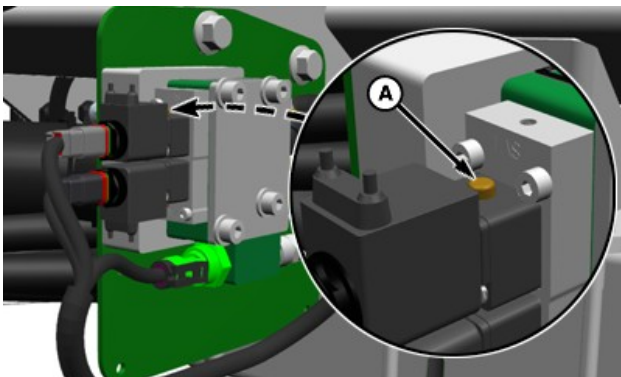
NOTE: The location and orientation of the air reservoir vary based on the planter model. The procedure is similar for all planter models.

1. Lower the planter to the planting position.
2. On the SeedStar monitor, reduce the downforce pressure to 66 N (15 lb).



CQ1360144—UN—22FEB24

Exhaust Manual Override—Compressor on the Planter



BML029473—UN—06JUL22

Exhaust Manual Override—Compressor on the Tractor

3. To release the residual air pressure from the air springs, press the manual override button (A).

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

4. Drain the compressed-air tank. (See Drain Compressed-Air Tank in this section.)

a3rfggt,1705949927646-19-20FEB24

Drain Compressor Air Tank

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

NOTE: Drain the compressor air tank daily and before storing the machine.



CQ1357490—UN—25JAN24

1. Place the suitable container under drain valve (A).



CQ1357491—UN—25JAN24

2. Open drain valve (A).
3. Let all water drain out.

a3rfggt,1705949927610-19-03JUL24

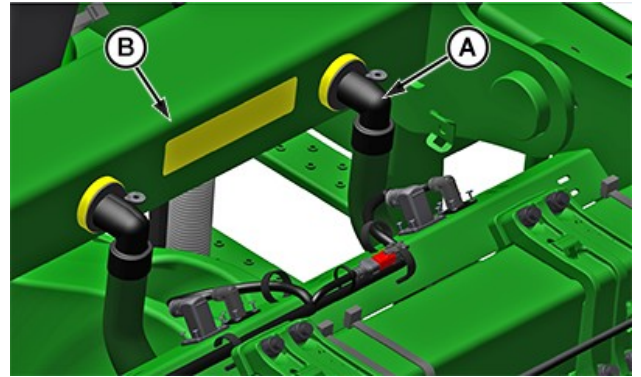
Seed Row Spacing Conversion

Available Spacing Configuration

Model	Configuration Type	Number of Lines	Row Spacing (cm) (in)
3119	Factory Configuration	19	45 (17.7)
		18	50 (19.7)
		16	52.5 (20.5)
	Field Optional Configuration ^a	15	60 (23.6)
		12	70 (27.5)
		10	90 (35.4)
3123	Factory Configuration	23	45 (17.7)
		20	50 (19.7)
			52.5 (20.5)
	Field Optional Configuration ^a	17	60 (23.6)
		14	70 (27.5)
		12	90 (35.4)
3127	Factory Configuration	27	45 (17.7)
		24	50 (19.7)
			52.5 (20.5)
	Field Optional Configuration ^a	21	60 (23.6)
		18	70 (27.5)
		16	76 (29.9)
3131	Factory Configuration	31	45 (17.7)
		28	50 (19.7)
		26	52.5 (20.5)
	Field Optional Configuration ^a	23	60 (23.6)
		20	70 (27.5)
		18	76 (29.9)
		16	90 (35.4)

^aThese sets can be used according to the field conditions, respecting tractor capacity. Contact a John Deere dealer or other service provider for more information and check the minimum tractor power required.

FHSSYU9,1773319748200-19-16APR26



CQ1373552—UN—31JUL24

2. Disconnect all vacuum hoses (A) from the planter frame tube (B).

NOTE: To prevent damage to the machine components, place the seed meter assemblies and vacuum hoses clear of the planter.



CQ1373555—UN—31JUL24

Seed Delivery Hoses—MaxEmerge 5e



CQ1373553—UN—31JUL24

Seed Delivery Hoses—ExactEmerge

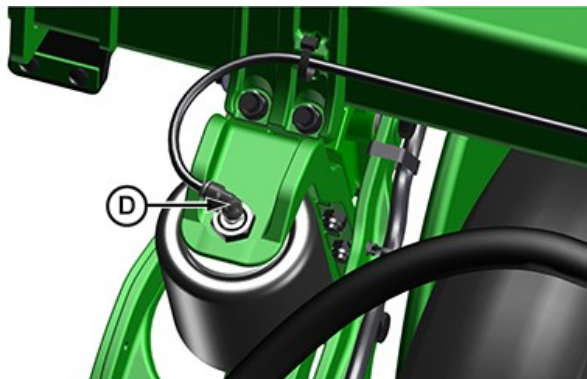
3. Disconnect all seed delivery hoses (C) from the seed meters.

Remove and Assemble Seed Row Unit

Remove Seed Row Unit

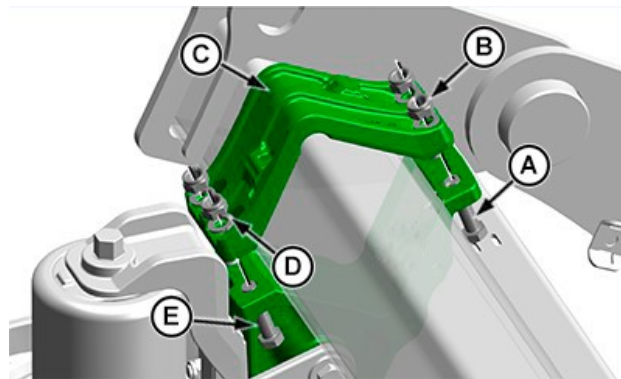
IMPORTANT: Keep the tractor attached to the planter during the row spacing conversion.

1. Unfold the planter on a clean and level surface. (See Unfold and Fold Planters in the Transport section.)



CQ1379583—UN—14OCT24

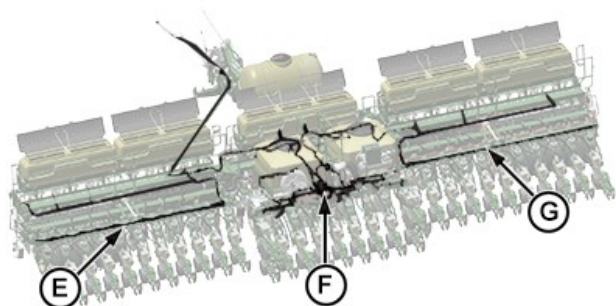
4. If equipped, disconnect PDF hoses (D).



CQ1381052—UN—26OCT24

4. Install bracket clamp (C) with screws (A) and (E), nuts (B), and washers (D). Tighten it in crisscross pattern to specification:

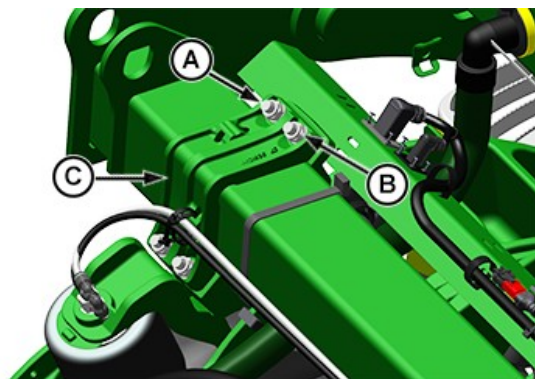
NOTE: To tighten screws (E) later, position a flexible rod on hole (F) to lock screws heads.



CQ1379588—UN—14OCT24

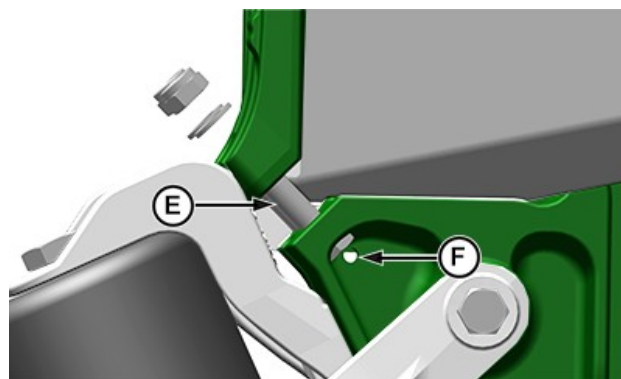
5. Remove left (E), center (F), and right frame (G) row unit harnesses.

Assemble Seed Row Unit



CQ1379663—UN—15OCT24

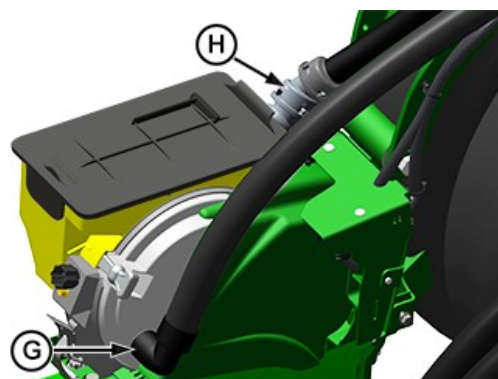
1. Loosen four screws (A) and nuts (B) of bracket clamp (C).
2. Move seed rows laterally to the desired spacing, aligning them with the fertilizer furrow opener disks or chisel.
3. Remove the seed rows that will not be used.



CQ1381053—UN—26OCT24

Specification

Bracket Clamp Screw—Torque. 119 N.m
(87.8 lb.ft)



CQ1379667—UN—15OCT24

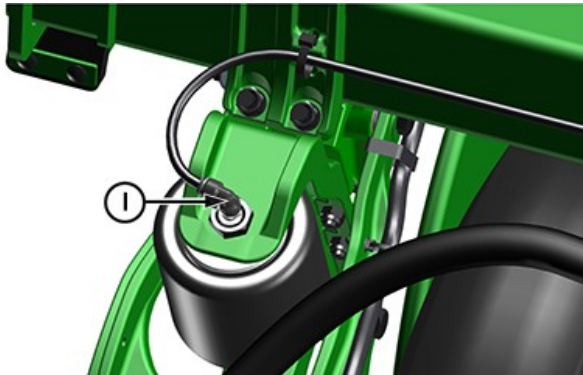
MaxEmerge 5e



CQ1373917—UN—02AUG24

ExactEmerge

5. Connect vacuum hose (G).
6. Connect CCS hose (H).



CQ1373921—UN—02AUG24

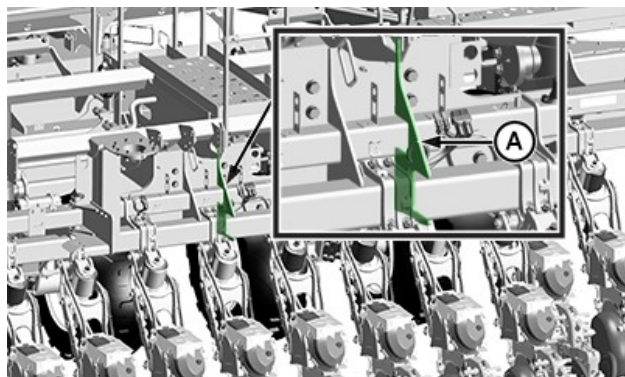
7. If equipped, connect PDF hose (I).

E443CH7,1750697315852-19-03JUL25

Adjust Seed Row Units Position for Spacing Conversion

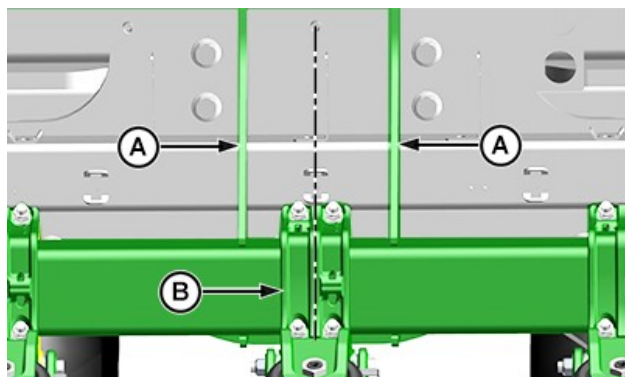
Center Row Units

NOTE: For measurement purposes, it is recommended to use the inner surface of right-hand side CCS support (A) as reference.



CQ1375424—UN—22AUG24

1. Use right-hand side CCS support (A) as reference to center frame rows units measurement.

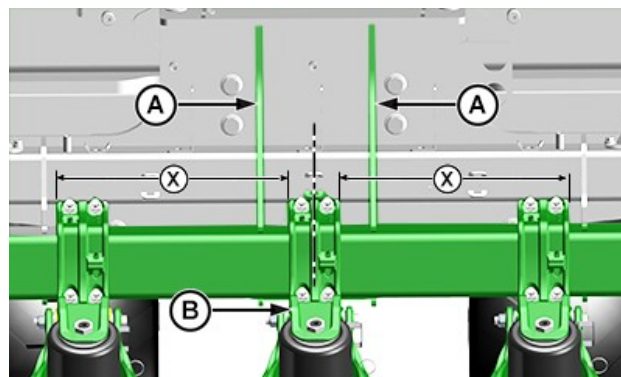


CQ1379691—UN—15OCT24

2. Assemble seed row unit (B). (See Remove and Assemble Seed Row Unit in this section).
3. Center seed row unit (B) between CCS support (A).

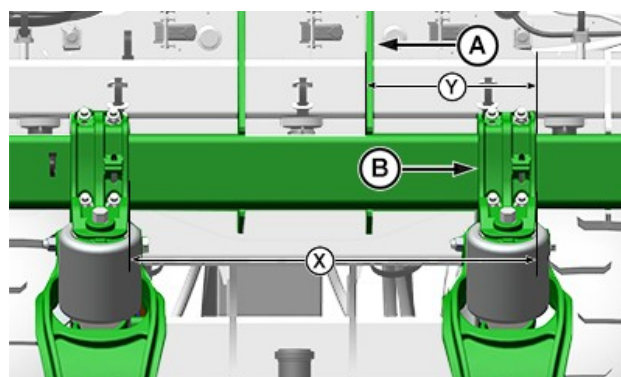
NOTE: The procedure with a seed row unit (B) on the center is available only for rows with 45 cm (17.7 in) and 60 cm (23.6 in) spacing.

NOTE: For the remaining row spacing configurations, it is necessary to measure distance (Y), and use it as reference to assemble the first seed row unit (B).



CQ1379693—UN—15OCT24

Seed Row Unit with 45 cm or 60 cm Spacing



CQ1381379—UN—30OCT24

Seed Row Unit with Remaining Spacings

4. Proceed with the conversion according to row spacing configuration:
 - a. **With seed row unit:** Once first seed row unit (B) is positioned on CCS support (A) center, assemble the remaining seed row units.
 - b. **With distance (Y):** Measure distance (Y) between first seed row unit (B) and right-hand side CCS support (A), and then assemble the remaining seed row units.

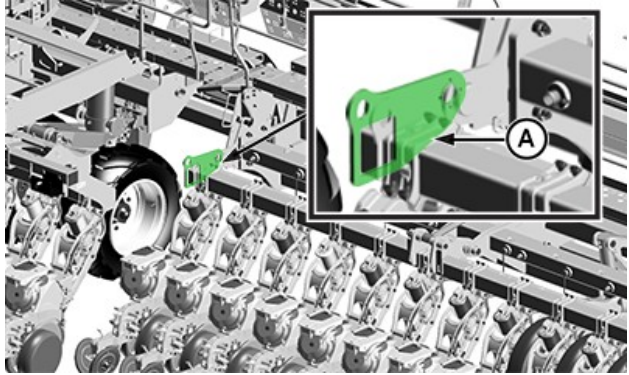
3123 and 3131	
Row Spacing (cm)	Distance (Y) (mm)
50	190
70	290
76	320
90	60

NOTE: Measure row spacing (X) according to Available Spacing Configuration in this section.

5. Using as reference first seed row unit (B) assembled, or distance (Y), measure row spacing (X) and position the remaining seed row units.

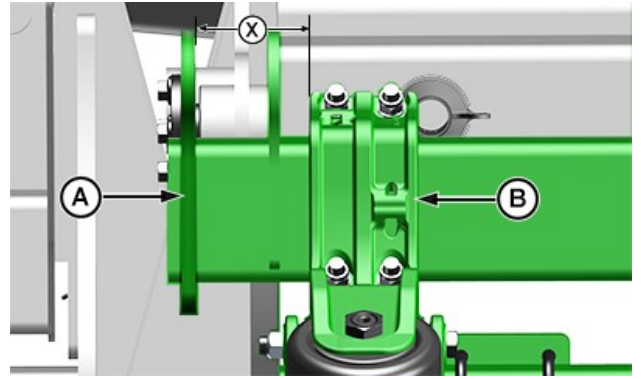
Wing Row Units

NOTE: For measurement purposes, it is recommended to use the inner surface of planting unit rockshaft assembly (A) as reference.



CQ1375425—UN—22AUG24

1. Use planting unit rockshaft assembly (A) as reference to position the first seed row unit.

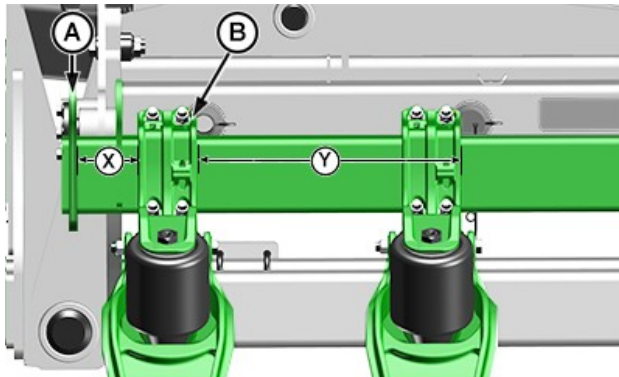


CQ1379695—UN—15OCT24

2. Assemble seed row unit (B). (See Adjust Seed Row Units Position for Spacing Conversion in this section).
3. Measure distance (X) between planting unit rockshaft assembly (A) and seed row unit (B), and position seed row unit (B).

3123 and 3131	
Row Spacing (cm)	Distance (X) (mm)
45	100
50	100
60	250
70	300
76	515
90	100

NOTE: Measure spacing (Y) according to Available Spacing Configuration in this section.



CQ1379734—UN—15OCT24

4. Once positioning first seed row unit (B), position the remaining seed row units using row spacing (Y).
5. Repeat the procedure on the other side wing.

a3rfggt,1706005117765-19-30OCT24

Seed Row Spacing Conversion

NOTE: When changing spacing or planter rows numbers, it is necessary to update this information on both fertilizer and seed rows applications in SeedStar 5. For more informations about this procedure, see Fertilizer Row Spacing Conversion.

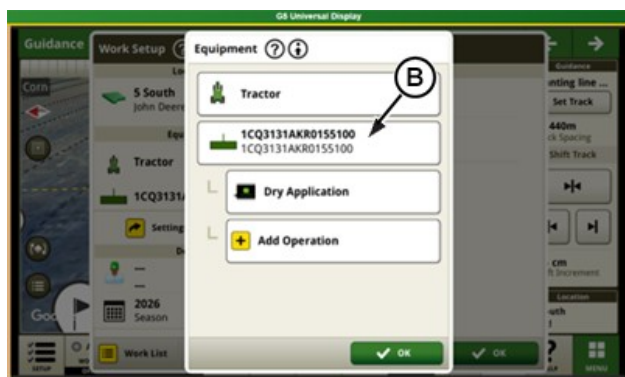
IMPORTANT: Consult the available spacing for each planter model. See Available Spacing Configuration in this section.

1. To perform the row spacing conversion, install row units according to the spacing desired. (See Adjust Seed Row Units Position for Spacing Conversion in this section.)



CQ1373678—UN—31JUL24

2. Access setup (A) in the monitor.



CQ1452190—UN—23MAR26

3. Access planter configuration menu (B).



CQ1452191—UN—23MAR26

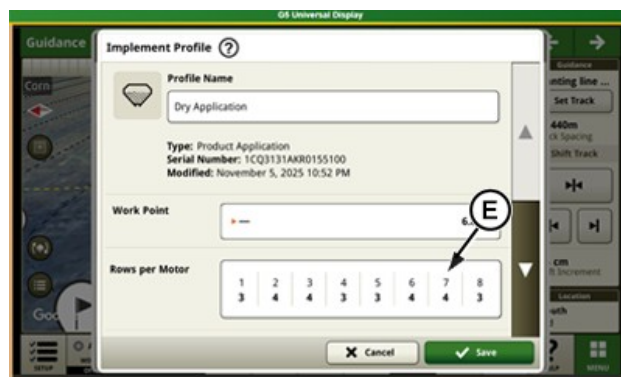
4. Adjust spacing and number of rows (C).



CQ1452231—UN—26MAR26

5. Access fertilizer configuration (D).

NOTE: The number of rows (E) must be the same as the number set in the implement configuration.



CQ1452192—UN—23MAR26

6. Adjust number of rows (E). (For more informations, see Fertilizer Row Spacing Conversion section.)



CQ1373683—UN—31JUL24

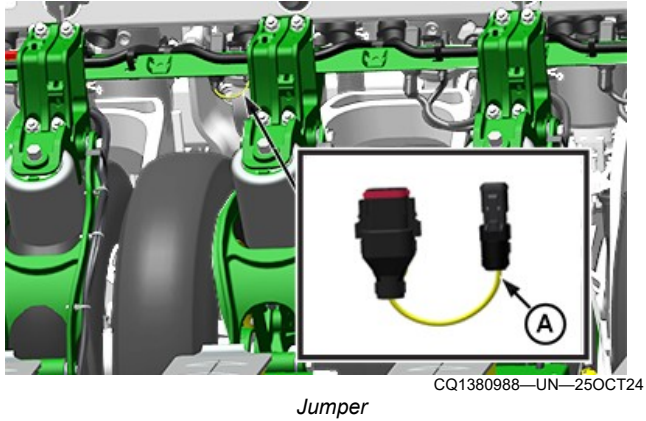
7. Turn the machine off and restart the system by performing a power cycle (F).

FHSSYU9,1774274272655-19-23MAR26

Install Jumpers on Inactive Row Units

Each planter row unit have their own control unit. This way, when the number of row units is changed and some of them are removed, it is necessary to install a

jumper (A) at the open connectors in order to maintain the continuity on the CAN network.



To check the position of jumpers (A) that must be installed, see Row Unit Sensor Position in this section.

a3rfggt,1705951818655-19-25OCT24

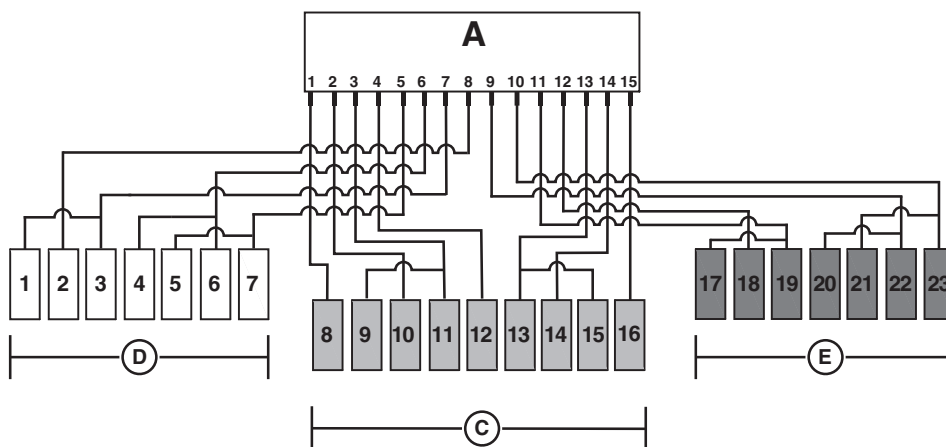
Schematics—Seed Distribution Connections

Diagrams illustrated shows the hose connections from central commodity system (CCS) tank (A) to the row units. Some models may have CCS tank (B) (if equipped) available.

The schematics are oriented according to tractor and implement direction of forward movement.

NOTE: All connections without attached lines must be closed.

3123

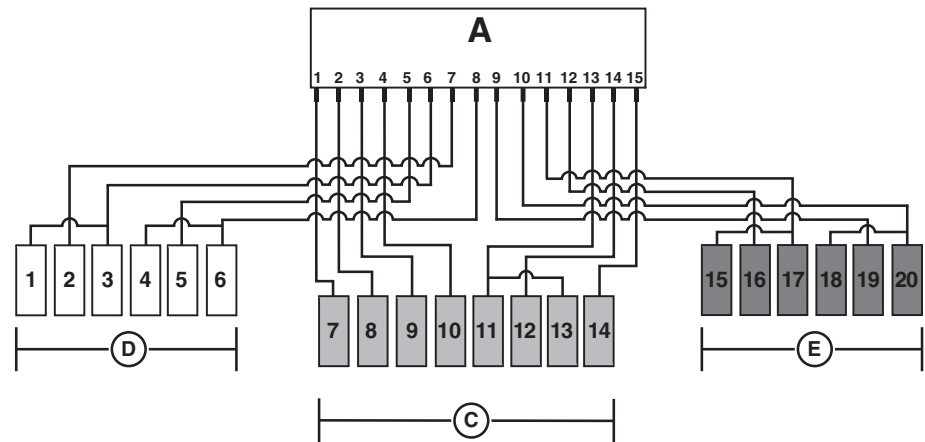


23-Row Units with 45 cm (17.71 in) Spacing

CQ1412069—UN—03JUL25

A—CCS Tank
C—Center Frame Row Units

D—Left-Hand Side Frame Row Units
E—Right-Hand Side Frame Row Units



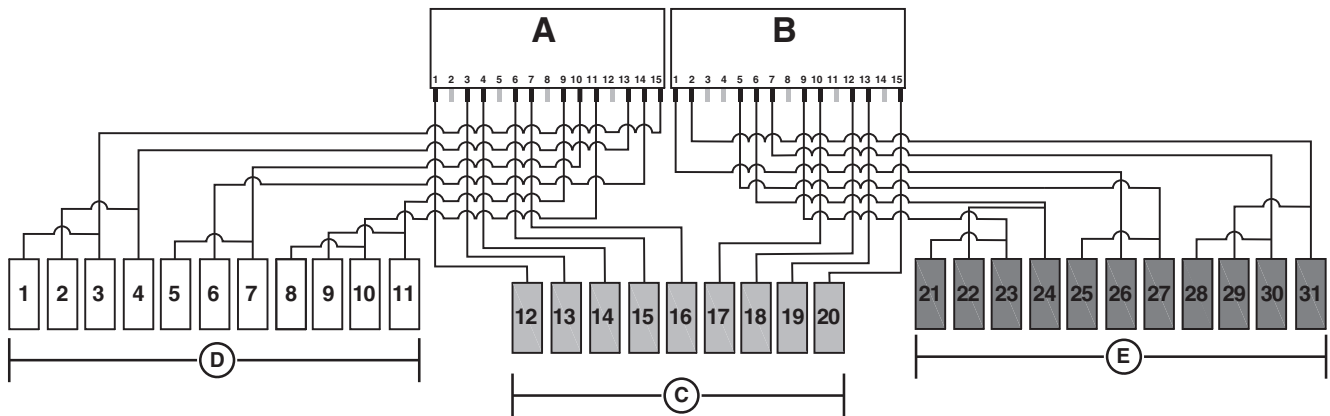
20-Row Units with 50 cm (19.68 in) Spacing

CQ1412067—UN—03JUL25

A—CCS Tank
C—Center Frame Row Units

D—Left-Hand Side Frame Row Units
E—Right-Hand Side Frame Row Units

3131

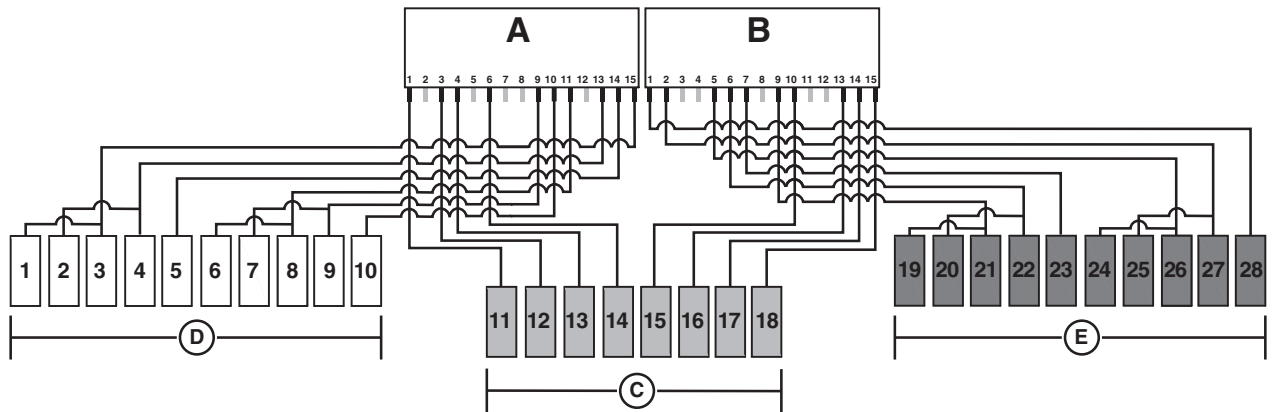


31-Row Units with 45 cm (17.71 in) Spacing

CQ1412062—UN—07JUL25

A—CCS Tank
B—CCS Tank
C—Center Frame Row Units

D—Left-Hand Side Frame Row Units
E—Right-Hand Side Frame Row Units



28-Row Units with 50 cm (19.68 in) Spacing

CQ1412070—UN—07JUL25

A—CCS Tank
B—CCS Tank
C—Center Frame Row Units

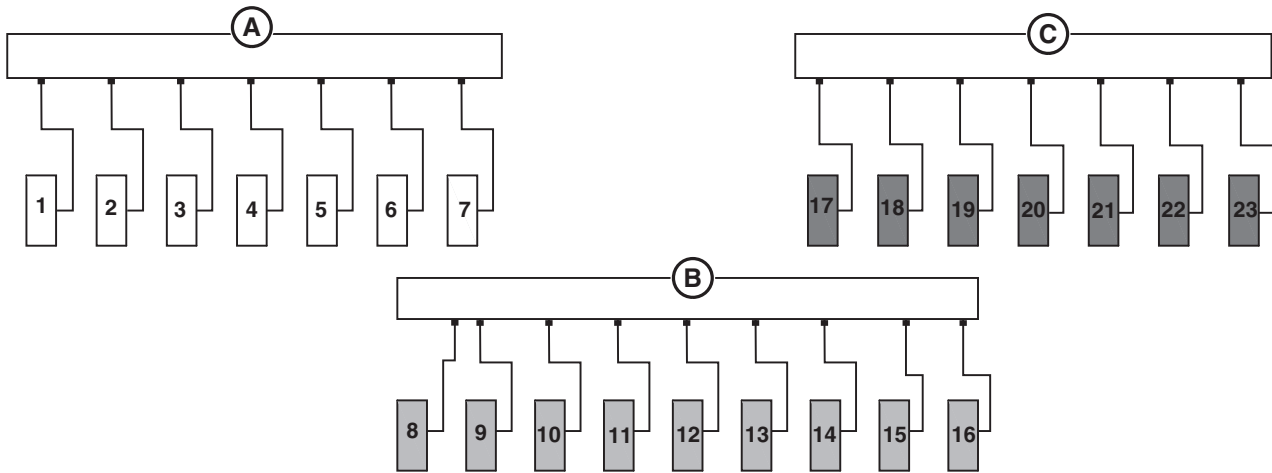
D—Left-Hand Side Frame Row Units
E—Right-Hand Side Frame Row Units

E443CH7,1750697705312-19-03JUL25

Schematics—Vacuum Distribution Connections

NOTE: All vacuum tubes outlets without attached hoses must be closed.

3123

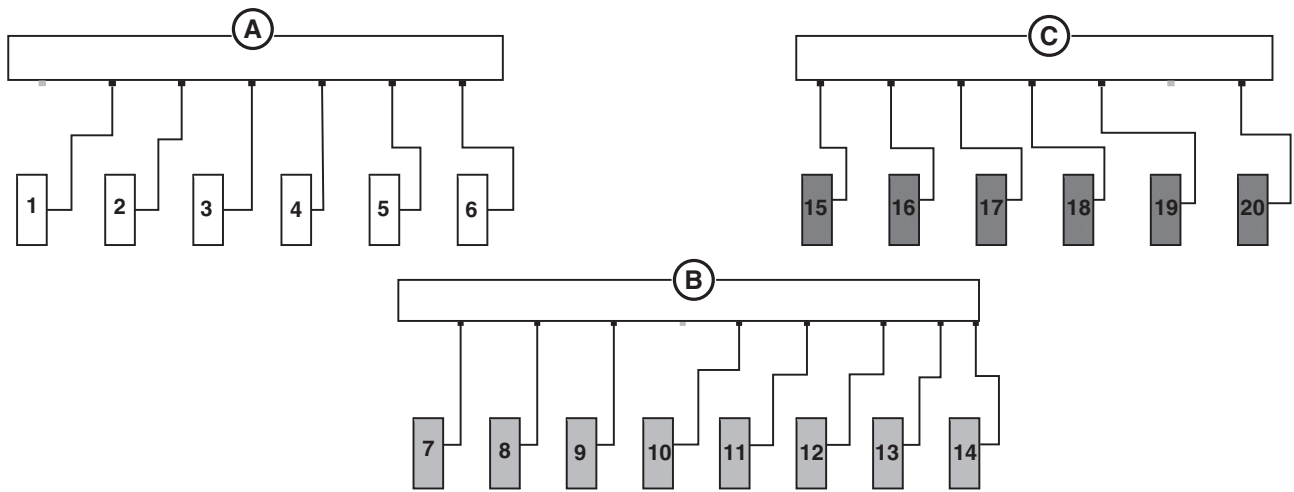


23-Row Units with 45 cm (17.71 in) Spacing

CQ1374398—UN—08AUG24

A—Left-hand Side Vacuum Tube
B—Center Vacuum Tube

C—Right-hand Side Vacuum Tube

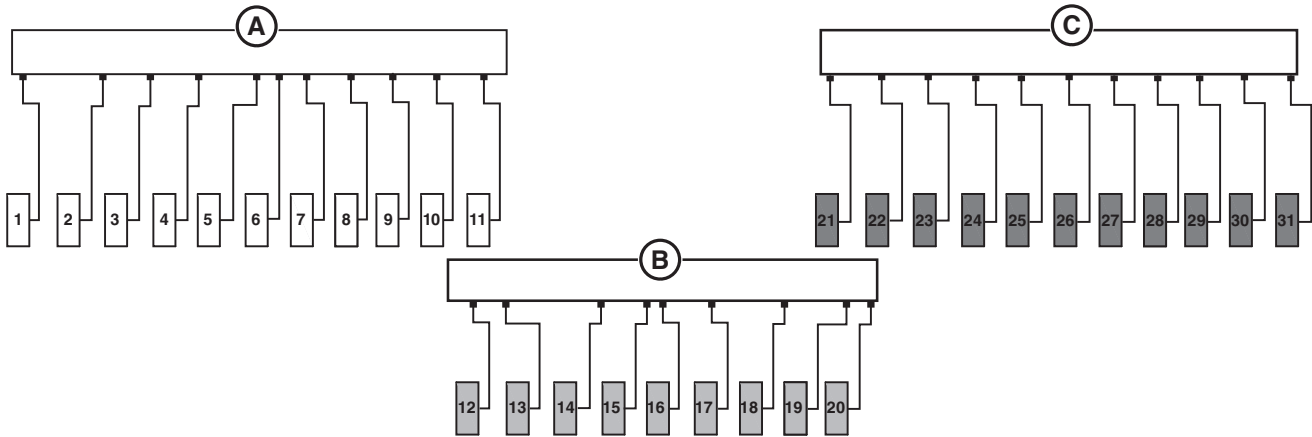


20-Row Units with 50 cm (19.68 in) Spacing

CQ1374399—UN—08AUG24

A—Left-hand Side Vacuum Tube
B—Center Vacuum Tube
C—Right-hand Side Vacuum Tube

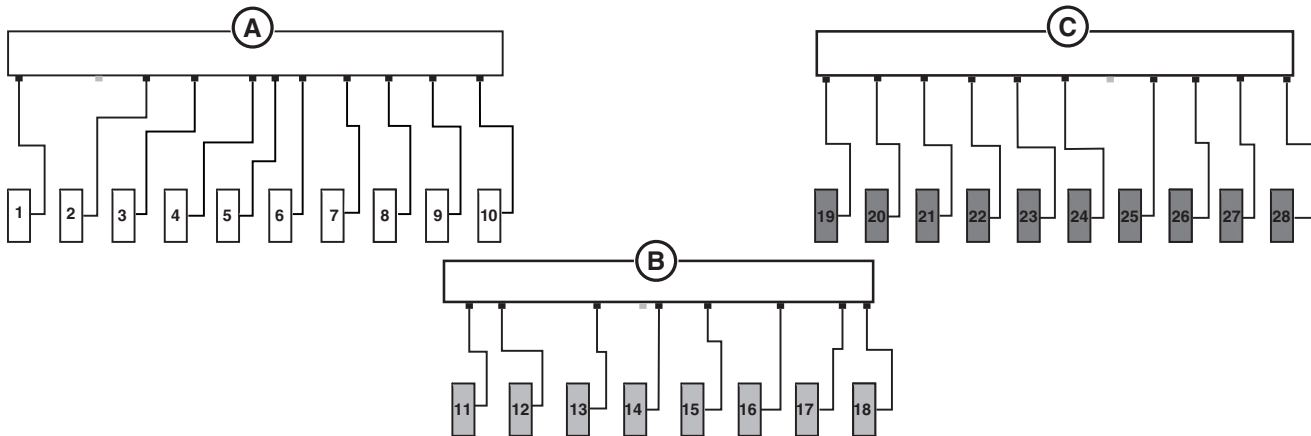
3131



31-Row Units with 45 cm (17.71 in) Spacing

CQ1374396—UN—08AUG24

A—Left-hand Side Vacuum Tube
B—Center Vacuum Tube
C—Right-hand Side Vacuum Tube



28-Row Units with 50 cm (19.68 in) Spacing

CQ1374397—UN—08AUG24

A—Left-hand Side Vacuum Tube
B—Center Vacuum Tube

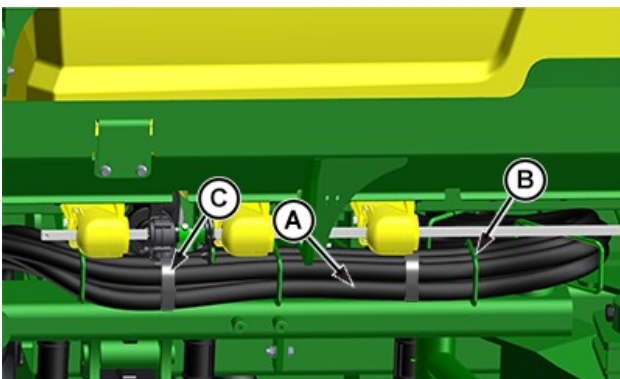
C—Right-hand Side Vacuum Tube

a3rfggt,1705951876714-19-26OCT24

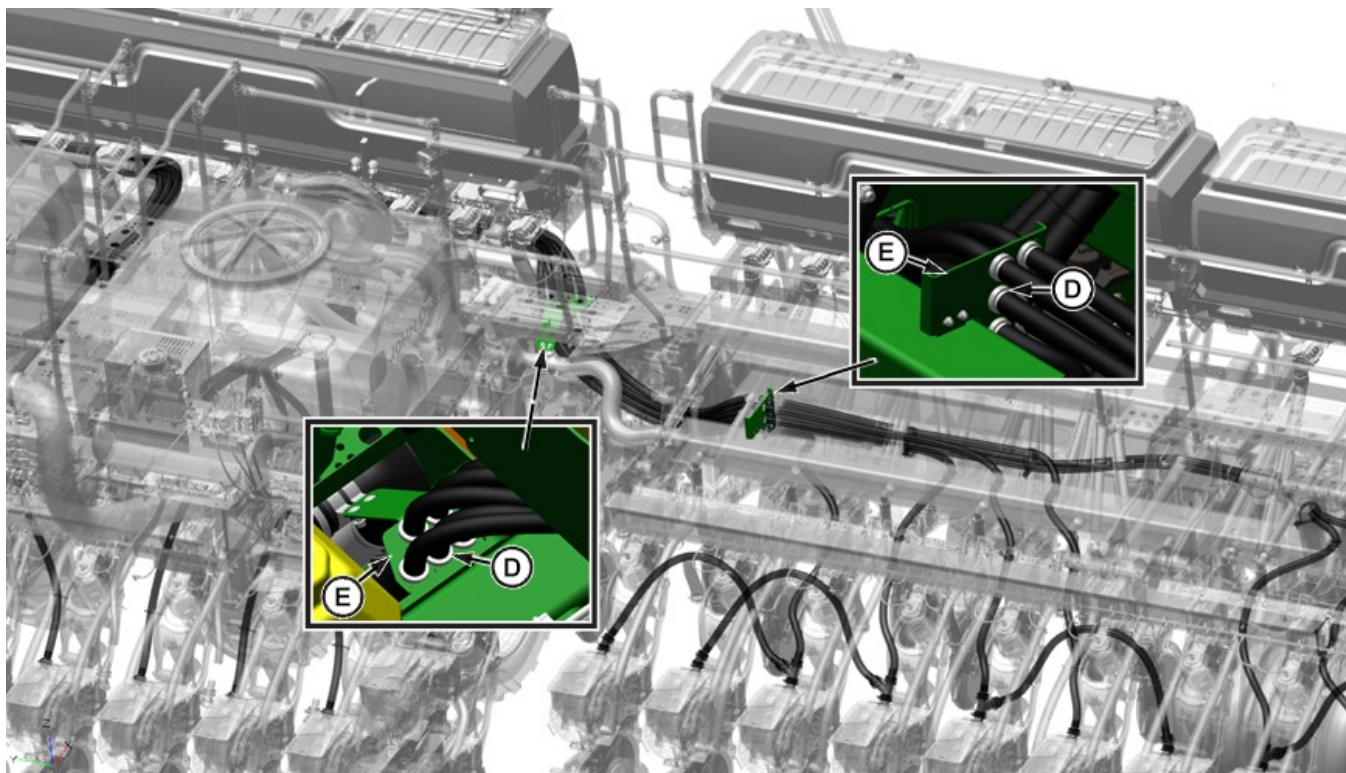
Install Seed Delivery Hoses

IMPORTANT: Machine must be folded before measuring, cutting, and installing seed delivery hoses from the central commodity system (CCS) tanks to row units.

1. Lubricate hoses (A) with soapy water and slide through hose supports (B).
2. Install hoses (A) on CCS tanks.

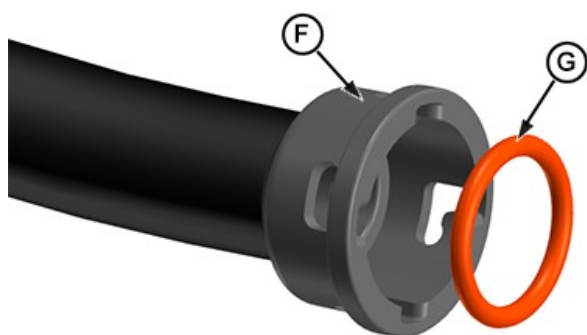


CQ1373729—UN—12AUG24



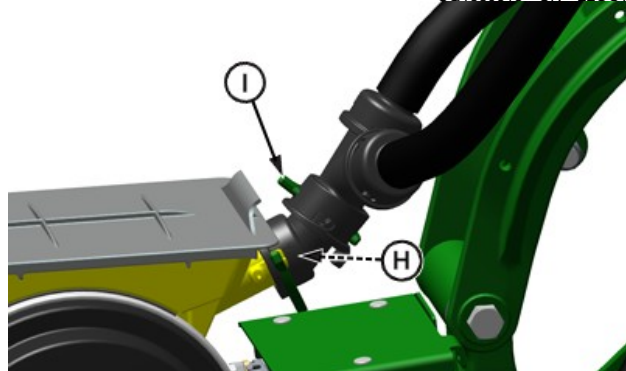
CQ1380318—UN—22OCT24

3. Route hoses (A) through hose supports (B) to correct row.
4. When routing, connect hoses (A) to seed bulkhead fittings (D) in wing bulkhead brackets (E).
5. Secure hoses (A) using tie bands (C).



CQ1380321—UN—21OCT24

6. To install straight on the mini hooper, lubricate inside of hoses (A) with soapy water.
7. Install hoses (A) on female coupler (E) with O-ring (F).
8. Measure the required hose length, from the CCS tank to the row unit hoppers. (See Schematics—Seed Distribution Connections in section 70.)
9. Cut hoses (A) to the appropriate length.



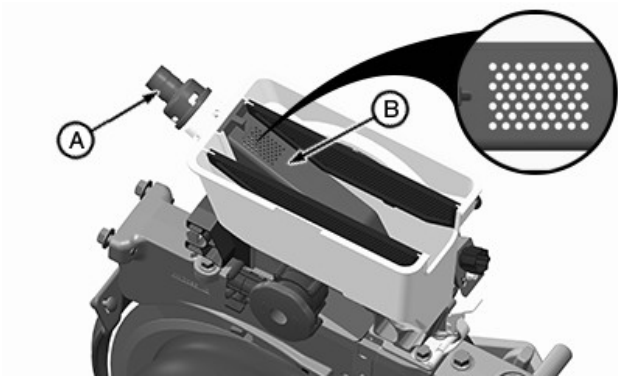
CQ1380381—UN—22OCT24

10. For swing arm seed row units, install check valve (H) on mini hopper connector. (See Mini-Hopper Check Valve in Preparing the Planter section.)
11. For splitter inlet connectors, install clamp (I).

Splitter Row Units

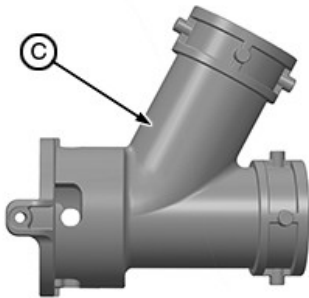
NOTE: The splitter row units are indicated in Schematics—Seed Distribution Connections block in this section.

To change a standard row unit in a splitter row unit, perform the following:



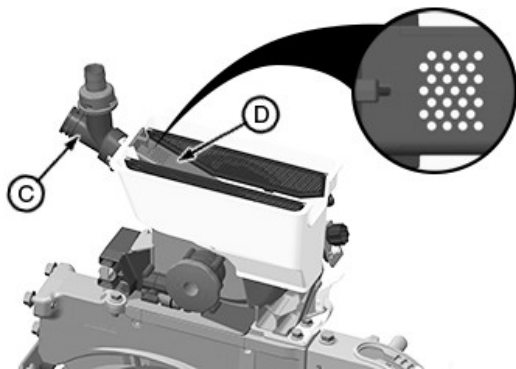
CQ297959—UN—28JAN14

1. Remove the standard discharge elbow (B).
2. Remove the single inlet connector (A).



CQ297961—UN—28JAN14

3. Install the splitter inlet connector (C).



CQ297960—UN—28JAN14

4. Install the discharge elbow on the double feeder (D) that has smaller holes.

a3rfggt,1705951915600-19-24OCT24

Row Unit Sensor Position

NOTE: Planters use only one SCV for the vacuum function.

NOTE: Never disconnect or connect the row unit with the power generation system connected.

3119FT**3119FT—19 Row Units 45 cm Spacing**

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
C			S						VS								S			

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3119FT—18 Row Units 50 cm Spacing

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	1	2	3	4	5	6	7	8	9	R	10	11	12	13	14	15	16	17	18	
C			S						VS	J							S			

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3119FT—16 Row Units 52.5 cm Spacing

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	R	1	2	3	4	5	6	7	8	R	9	10	11	12	13	14	15	16	R	
C	J		S						VS	J							S		J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3119FT—15 Row Units 60 cm Spacing

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	1	2	3	R	4	5	6	7	R	8	R	9	10	11	12	R	13	14	15	
C			S	J					VS - J		J					J	S			

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3119FT—12 Row Units 70 cm Spacing

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	R	1	2	R	3	4	R	5	6	R	7	8	R	9	10	R	11	12	R	
C	J		S	J			J		VS	J		J				J	S		J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3119FT—12 Row Units 76 cm Spacing

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	1	R	2	3	R	4	5	R	6	R	7	R	8	9	R	10	11	R	12	
C			S - J		J			J	VS	J		J			J		S	J		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3119FT—10 Row Units 90 cm Spacing

	Left Wing					Center Frame										Right Wing				
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Rx	1	R	2	R	3	R	4	R	5	R	6	R	7	R	8	R	9	R	10	
C		J	S	J		J		J	VS	J		J		J		J	S	J		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT**3123FT—23 Row Units 45 cm Spacing**

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
C			S										VS								S		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT—20 Row Units 50 cm Spacing

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	1	2	3	R	4	5	6	7	8	9	10	R	11	12	13	14	15	16	17	R	18	19	20
C	J		S									J	VS								S		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT—20 Row Units 52.5 cm Spacing

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	1	2	3	R	4	5	6	7	8	9	10	R	11	12	13	14	15	16	17	R	18	19	20
C			S	J								J	VS							J	S		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT—17 Row Units 60 cm Spacing

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	1	R	2	3	4	R	5	6	7	8	R	9	R ^a	10	11	12	13	R	14	15	16	R	17
C		J	S			J					J		VS - J					J			S	J	

^aRemove row on C13 position, and change it with C12 to keep the sensors. Exclusive for 60 cm spacing.

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT—14 Row Units 70 cm Spacing

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	R	1	2	R	3	R	4	5	6	R	7	R	8	R	9	10	11	R	12	R	13	14	R
C	J		J— S			J				J		J	VS	J				J			J— S		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT—14 Row Units 76 cm Spacing

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	1	R	2	3	R	4	R	5	6	R	7	R	8	R	9	10	R	11	R	12	13	R	14
C		J	S		J		J			J		J	VS	J			J		J		S	J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3123FT—12 Row Units 90 cm Spacing

	Left Wing							Center Frame									Right Wing						
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Rx	1	R	2	R	3	R	4	R	5	R	6	R	7	R	8	R	9	R	10	R	11	R	12
C		J	S	J		J		J		J		J	VS	J		J		J		J	S	J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT**3127FT—27 Row Units 45 cm Spacing**

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
C			S				S						VS								S				S		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT—24 Row Units 50 cm Spacing

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	2	3	4	5	6	7	R	8	9	10	11	12	R	13	14	15	16	17	R	18	19	20	21	22	23	24
C	J		S				S						VS	J							S				S		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT—24 Row Units 52.5 cm Spacing

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	2	3	4	5	6	7	R	8	9	10	11	12	R	13	14	15	16	17	R	18	19	20	21	22	23	24
C	J		S				S						VS	J							S				S		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT—21 Row Units 60 cm Spacing

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	2	3	R	4	5	6	R	7	8	9	R	10	11	12	R	13	14	15	R	16	17	18	R	19	20	21
C			S - J				S	J					VS - J		J						S - J				S	J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT—18 Row Units 70 cm Spacing

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	R	2	R	3	R	4	5	6	7	8	R	9	R	10	R	11	12	13	14	15	R	16	R	17	R	18
C		J	S		J		S	J				J	VS	J		J				J	S		J		S	J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT—16 Row Units 76 cm Spacing

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	R	2	R	3	R	4	R	5	6	7	R	8	R	9	R	10	11	12	R	13	R	14	R	15	R	16
C	J		S - J			J	S		J			J	VS	J		J			J		S	J			S - J		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3127FT—14 Row Units 90 cm Spacing

	Left Wing									Center Frame									Right Wing								
Cx	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rx	1	R	2	R	3	R	4	R	5	R	6	R	7	R	8	R	9	R	10	R	11	R	12	R	13	R	14
C		J	S-J			J	S	J		J		J	VS	J		J		J		J	S	J			S-J		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT**3131FT—31 Row Units 45 cm Spacing**

	Left Wing											Center Frame									Right Wing										
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
C			S					S							VS								S						S		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT—28 Row Units 50 cm Spacing

	Left Wing											Center Frame									Right Wing										
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	1	2	3	4	5	R	6	7	8	9	10	11	12	13	14	R	15	16	17	18	19	20	21	22	23	R	24	25	26	27	28
C			J-S						S						VS	J							S						J-S		

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT—26 Row Units 52.5 cm Spacing

	Left Wing											Center Frame									Right Wing										
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	R	1	2	3	4	5	6	7	8	R	9	10	11	12	13	R	14	15	16	17	18	R	19	20	21	22	23	24	25	26	R
C	J		S		J				S						VS	J							S				J		S		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing

Seed Row Spacing Conversion

- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT—23 Row Units 60 cm Spacing

	Left Wing											Center Frame										Right Wing									
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	1	R	2	3	4	R	5	6	7	R	8	9	10	11	R ^a	12	R	13	14	15	16	R	17	18	19	R	20	21	22	R	23
C		J	S		J				S	J					VS-J		J						J-S					J	S	J	

^aRemove row on C15 position, and change it with C16 to keep the sensors. Exclusive for 60 cm spacing.

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT—20 Row Units 70 cm Spacing

	Left Wing											Center Frame										Right Wing									
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	1	R	2	R	3	4	R	5	6	R	7	8	9	R	10	R	11	R	12	13	14	R	15	16	R	17	18	R	19	R	20
C		J	S	J			J		S	J				J	VS	J		J				J	S		J			J	S	J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT—18 Row Units 76 cm Spacing

	Left Wing											Center Frame										Right Wing									
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	1	R	2	R	3	R	4	R	5	R	6	7	8	R	9	R	10	R	11	12	13	R	14	R	15	R	16	R	17	R	18
C	J		S-J		J			J	S		J			J	VS	J		J			J		S	J			J		S-J		J

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

3131FT—16 Row Units 90 cm Spacing

	Left Wing											Center Frame										Right Wing									
C-x	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
R-x	1	R	2	R	3	R	4	R	5	R	6	R	7	R	8	R	9	R	10	R	11	R	12	R	13	R	14	R	15	R	16
C		J	S	J		J		J	S	J		J		J	VS	J		J		J		J	S	J		J		J	S	J	

- **Cx:** Connector Count on the Backbone Harnesses
- **Rx:** Rows Counting Following Spacing
- **C:** Components
- **VS:** Vacuum Sensor
- **S:** Pneumatic Downforce Sensor
- **J:** Jumper Position
- **R:** Removed Row

FHSSYU9,1773321445752-19-16APR26

Fertilizer Row Spacing Conversion

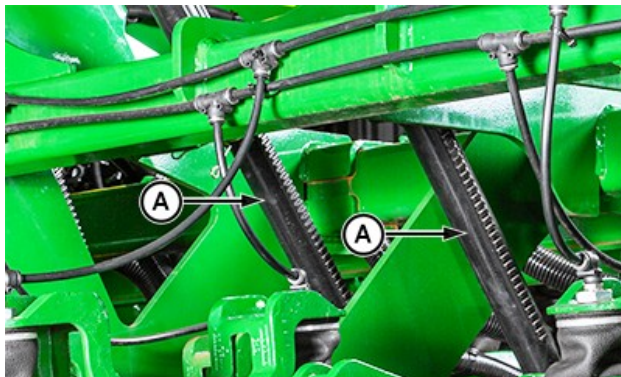
Adjust Fertilizer Row Units Position for Spacing Conversion

NOTE: When changing spacing or planter rows numbers, it is necessary to update this information on both fertilizer and seed rows applications in SeedStar 5. For more informations about this procedure, see Seed Row Spacing Conversion.

Remove and Install Fertilizer Row Unit

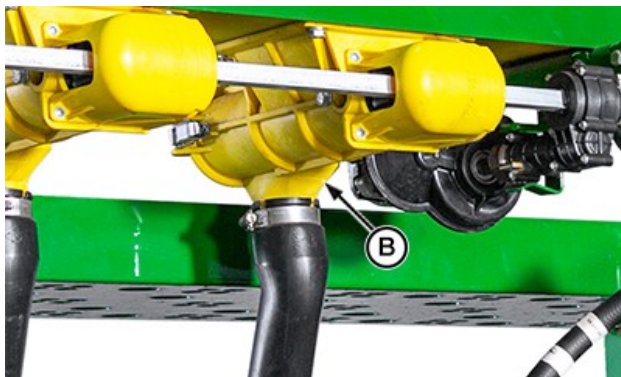
IMPORTANT: Keep the tractor attached to the planter during the row spacing conversion.

1. Unfold the planter on a clean and level surface. (See Unfold and Fold Planters in the Transport section.)



PDF Connectors

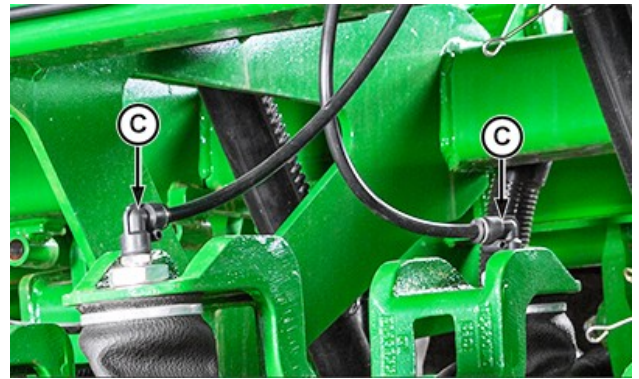
CQ1373958—UN—09AUG24



Fertilizer Meterings

CQ1373960—UN—09AUG24

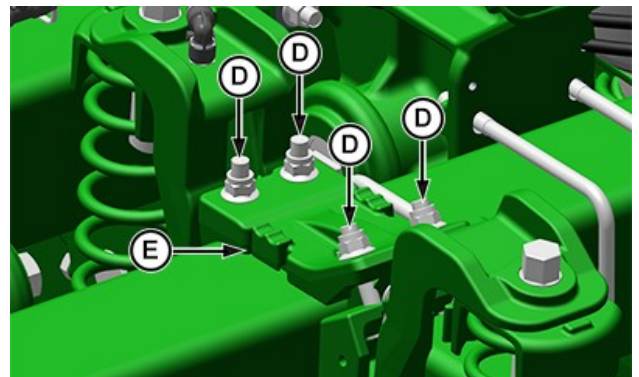
2. Disconnect all fertilizer hoses (A) from fertilizer metering (B).



CQ1373962—UN—09AUG24

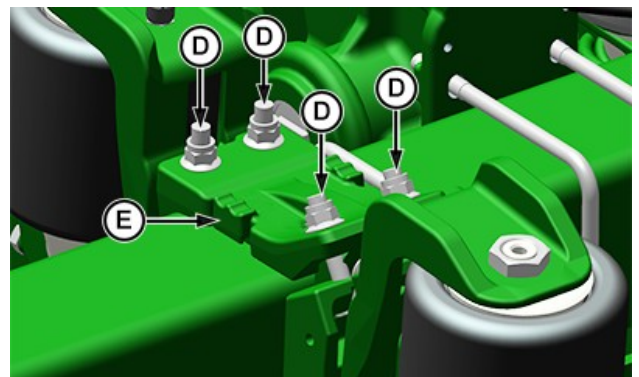
PDF Connectors

3. If equipped with pneumatic downforce (PDF) system, disconnect all PDF connectors (C).



CQ1379992—UN—17OCT24

Coulter with Mechanical Spring

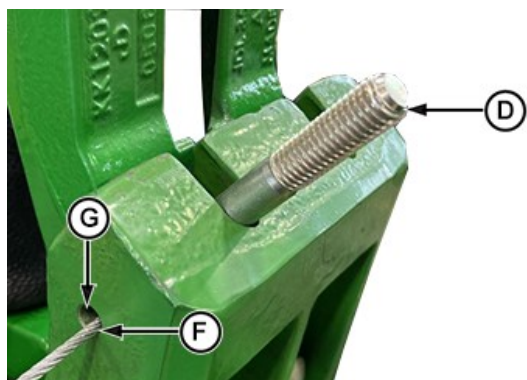


CQ1379993—UN—17OCT24

Coulter with Pneumatic Downforce (PDF) Spring

4. Loosen screws (D) from bracket clamp (E).

NOTE: To tighten screws (D) later, position a flexible rod (F) on hole (G) to lock screws heads.



CQ1380005—UN—17OCT24

5. To perform the row spacing conversion, remove all necessary row units.
6. Install the row units according to the spacing desired.



CQ1411596—UN—02JUL25

7. To prevent the hose from tangling, remove and cut area (H) of the fertilizer hoses (A).

Specification

Area (H)	
—Length.	150.5mm (5.93 in)
Final Length of Fertilizer Hose (A)	
—Length.	730mm (28.74 in)

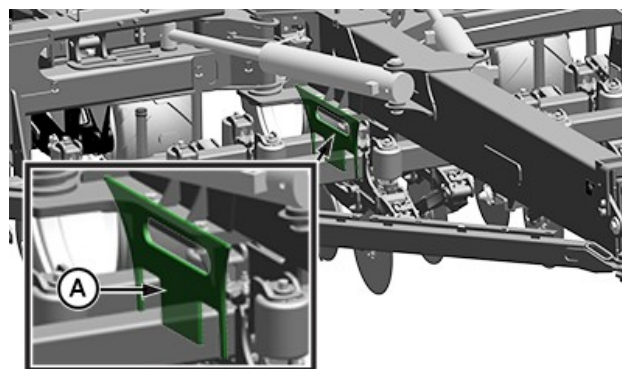
NOTE: A variation of up to **10 mm** in the position of row units may occur during installation.

NOTE: Use the appropriate tool to tighten the rows and ensure correct alignment.

IMPORTANT: Consult the available spacing for each planter model. See Available Spacing Configuration in this section.

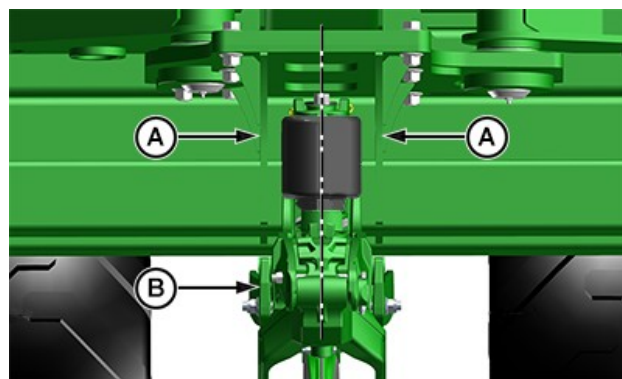
Center Row Units

NOTE: For measurement purposes, it is recommended to use the inner surface of right-hand fertilizer opener plate (A) as reference.



CQ1380010—UN—17OCT24

1. Use fertilizer opener plate (A) as reference to center frame rows units measurement.
2. Assemble fertilizer row unit (B). (See Remove and Install Fertilizer Row Unit in this section).



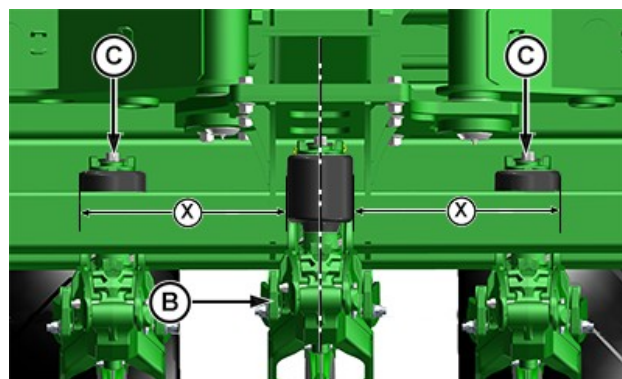
CQ1375721—UN—27AUG24

Fertilizer Row Unit

3. Center fertilizer row unit (B) between fertilizer opener plates (A).

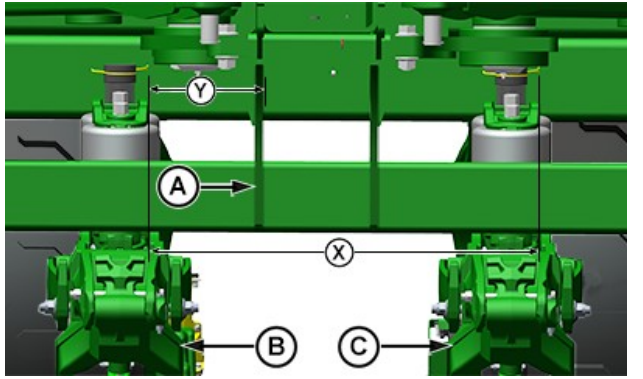
NOTE: The procedure with a fertilizer row unit (B) on the center is available only for rows with 45 cm (17.7 in) and 60 cm (23.6 in) spacing.

NOTE: For the remaining row spacing configurations, it is necessary to measure distance (Y), and use it as reference to assemble the first fertilizer row unit (B).



CQ1381387—UN—30OCT24

Fertilizer Row Unit with 45 cm or 60 cm Spacing



Fertilizer Row Unit with Remaining Spacings

CQ1397784—UN—19MAR25

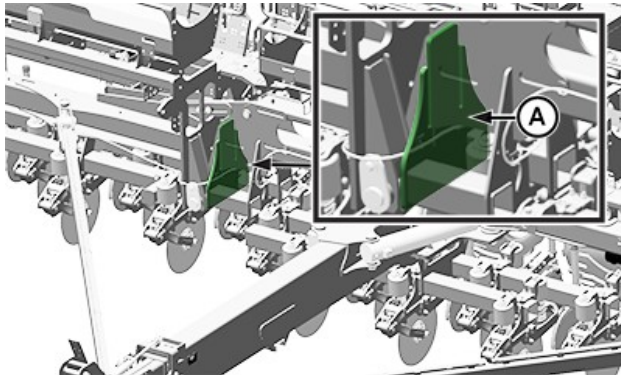
4. Proceed with the conversion according to row spacing configuration:
 - a. **With fertilizer row unit:** Using as reference first fertilizer row unit (B) assembled, measure row spacing (X) and position remaining fertilizer row units (C).
 - b. **With distance (Y):** Measure distance (Y) between first fertilizer row unit (B) and right-hand side fertilizer opener plate (A), and then assemble remaining fertilizer row units (C).

3123 and 3131	
Row Spacing (cm)	Distance (Y) (mm)
50	296.5
70	396.5
76	427.5
90	46.5

NOTE: Measure row spacing (X) according to Available Spacing Configuration in Seed Row Spacing Conversion.

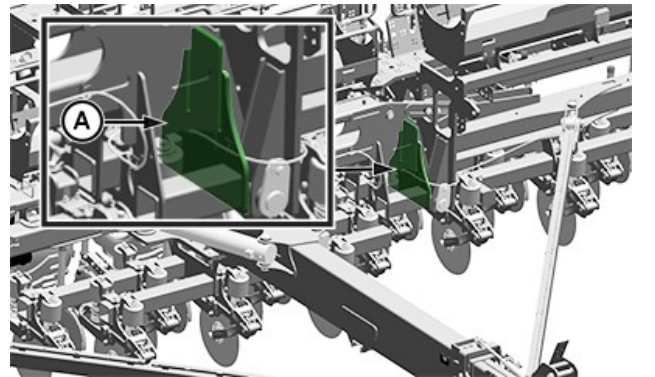
Swing Arm Row Units

NOTE: For measurement purposes, it is recommended to use the inner surface of swing arm plate (A) as reference.



Right-hand Side Swing Arm Plate

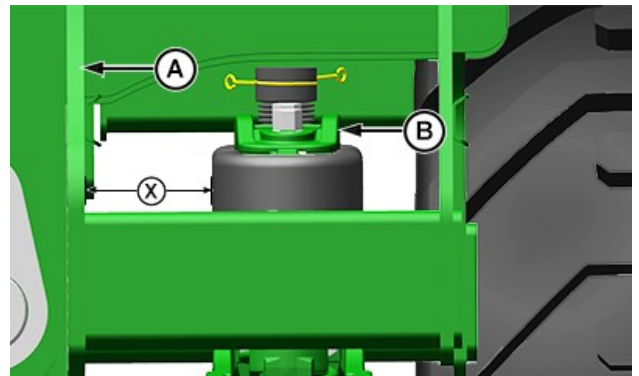
CQ1375428—UN—22AUG24



Left-hand Side Swing Arm Plate

CQ1380009—UN—17OCT24

1. Use swing arm plate (A) as reference to position fertilizer row unit.



CQ1380884—UN—24OCT24

2. Measure distance (X) between swing arm plate (A) and bracket clamp lateral (B), and position fertilizer row unit (B).

Fertilizer Row Spacing Conversion

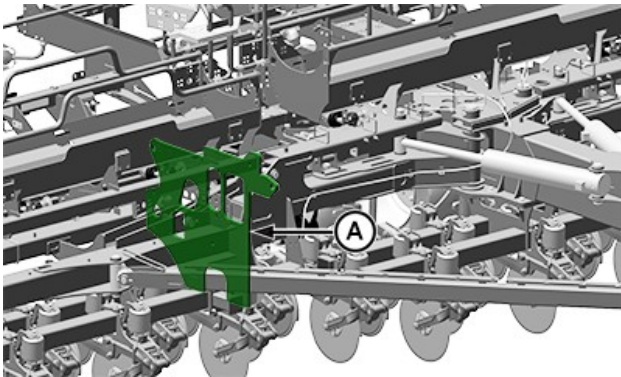
3123 and 3131	
Row Spacing (cm)	Distance (X) (mm)
45	140
50	190
60	140
70	190
76	37
90	Not Applicable ^a

^aIn this row spacing, there is not a fertilizer row assembled on swing arm.

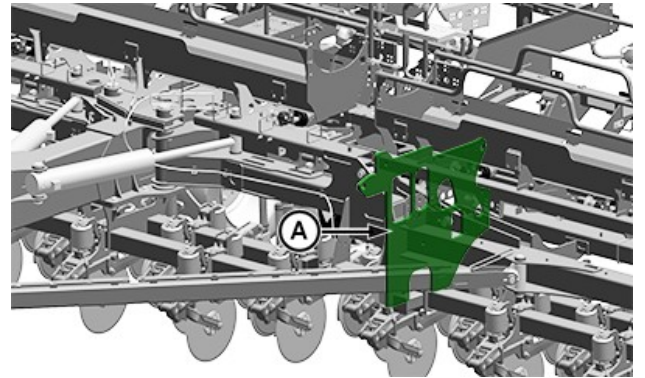
- Repeat the same procedure on other side swing arm.

Wing Rows Units

NOTE: For measurement purposes, it is recommended to use the inner surface of wing lateral plate (A) as reference.

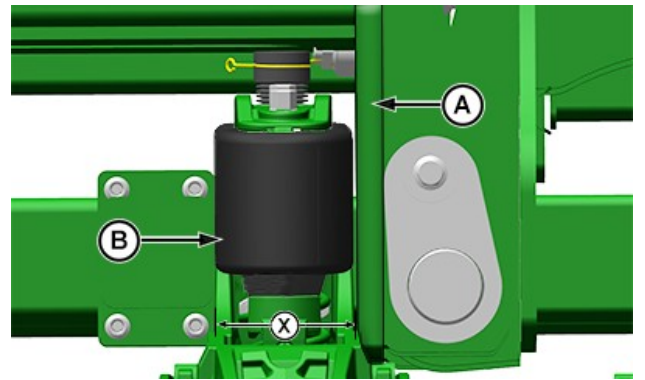


CQ1375429—UN—22AUG24
Right-hand Side Wing Lateral Plate



CQ1380008—UN—17OCT24
Left-hand Side Wing Lateral Plate

- Use wing lateral plate (A) as reference to position first fertilizer row unit.

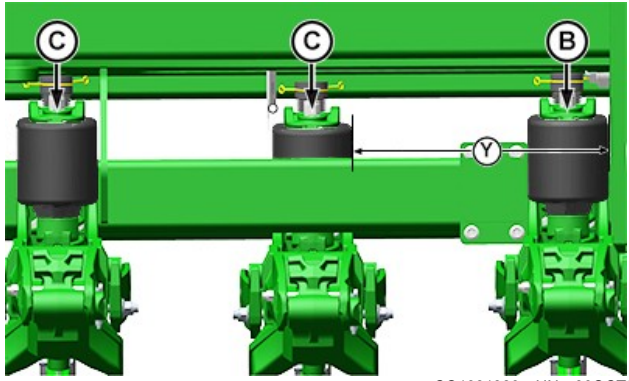


CQ1380021—UN—17OCT24

- Measure distance (X) between fertilizer row unit (B) and wing lateral plate (A).

3123 and 3131	
Row Spacing (cm)	Distance (X) (mm)
45	125
50	125
60	275
70	325
76	540
90	125

- Assemble fertilizer row unit (B). (See Remove and Install Fertilizer Row Unit in this section).



CQ1381389—UN—30OCT24

4. Once position first fertilizer row unit (B), position remaining fertilizer row units (C) using row spacing (Y).

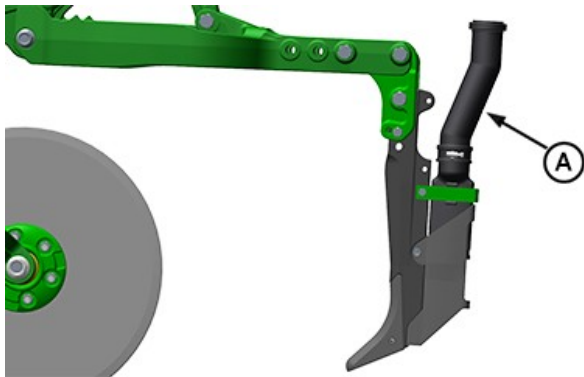
NOTE: Row spacing (Y) may vary by ± 10 mm.

NOTE: Some of the rows requires a angled joint to tight it

5. Repeat the same procedure on other side wing.

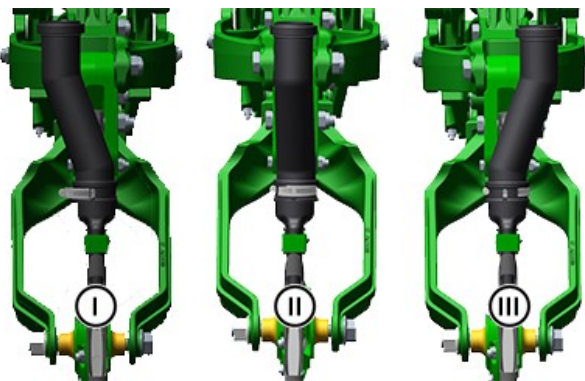
PS9EIDU,1773326018054-19-30MAR26

Assemble Fertilizer Row Unit Elbow— Chisel-Type Furrow Opener



CQ1380174—UN—18OCT24

Chisel-Type Furrow Opener

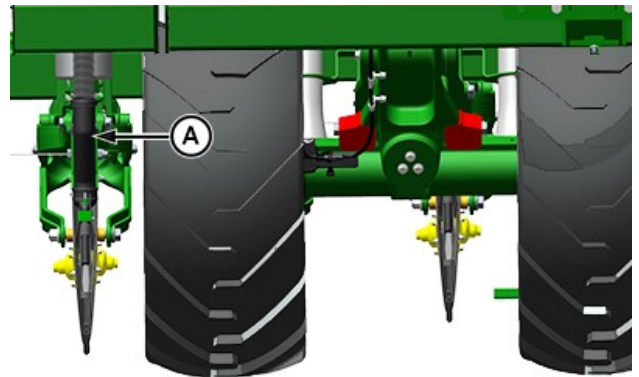


CQ1380175—UN—18OCT24

Fertilizer Elbow Positions

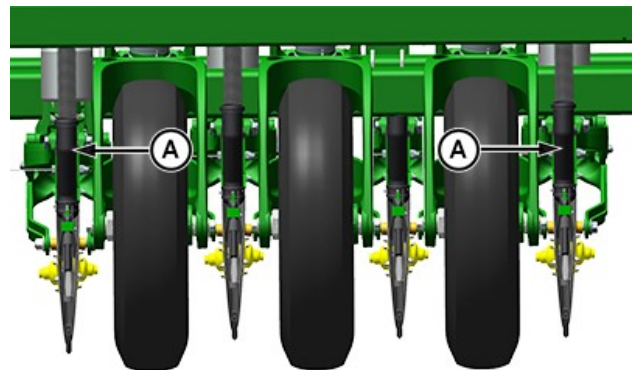
On chisel-type furrow openers, it is possible to assemble fertilizer elbow (A) at 0° degrees (II), and at 90° to the left (I) or right (III).

Fertilizer Elbow Near Center Frame Wheels



CQ1380195—UN—18OCT24

Center Frame Wheels

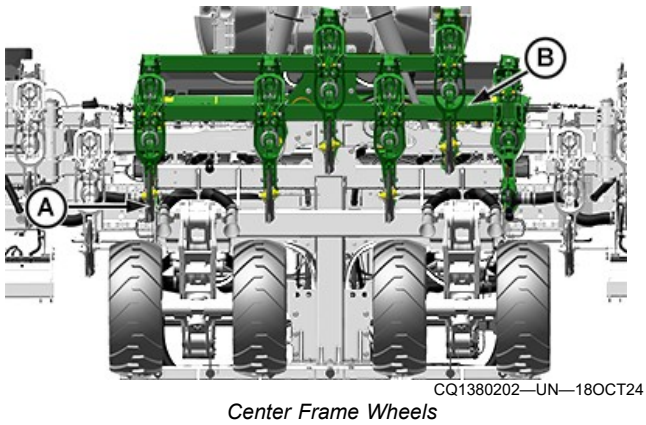


CQ1380197—UN—18OCT24

Wing Frame Wheels

On chisel-type furrow openers positioned next to the frame wheels, fertilizer elbow (A) must be assembled at 0° degrees. Otherwise, it can have interferences with the frame wheels.

Fertilizer Elbow at a 50 cm (19.68 in) Spacing



On chisel-type furrow openers positioned at the second draft tube (B), fertilizer elbow (A) must be assembled at 90° to the left (I). Otherwise, it can have interferences with the center frame.

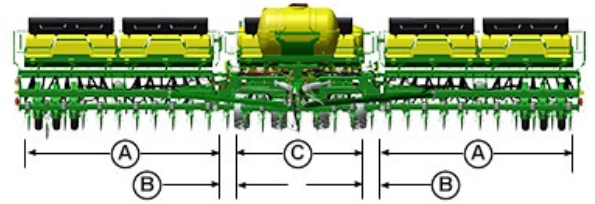
NOTE: This procedure is mandatory only to fertilizer rows with 50 cm (19.68 in) spacing. With regard to the other fertilizer rows, it is optional to turn the fertilizer elbow either to the right or to the left.

a3rfggt,1706005435038-19-24OCT24

Schematics—Fertilizer Row Unit Assembly Position

Schematics represent fertilizer rows assembly positions.

The schematics are oriented according to the operator's frontal view of the machine.

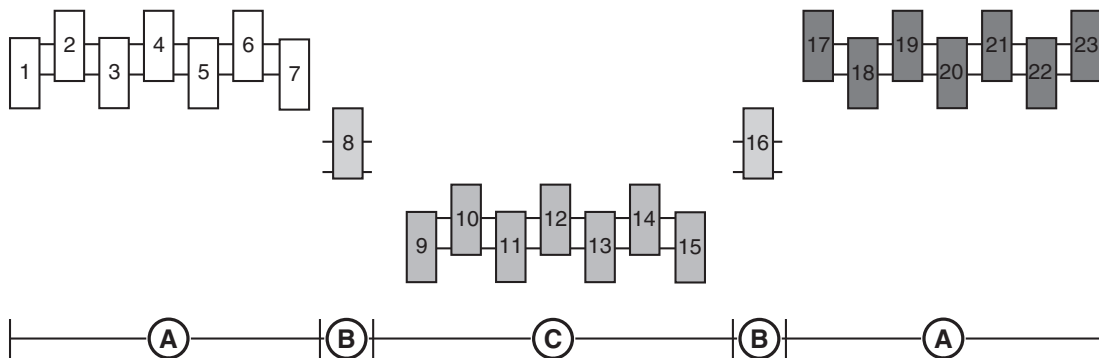


CQ1381020—UN—25OCT24

Machine Frontal View

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units
C—Center Frame Fertilizer Row Units

3123

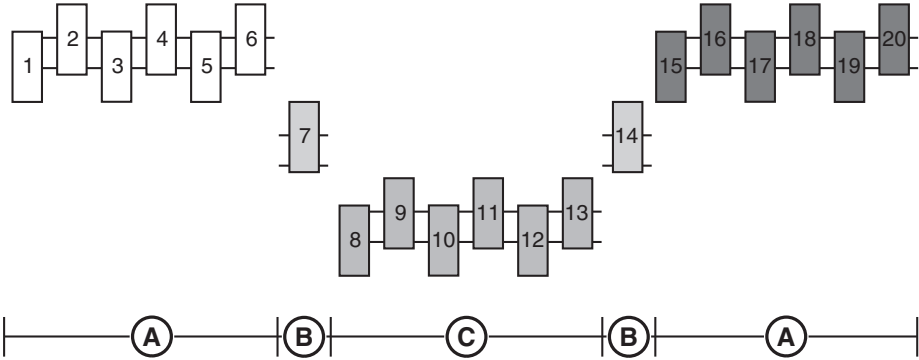


CQ1380947—UN—25OCT24

23-Row Units with 45 cm (17.71 in) Spacing

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units



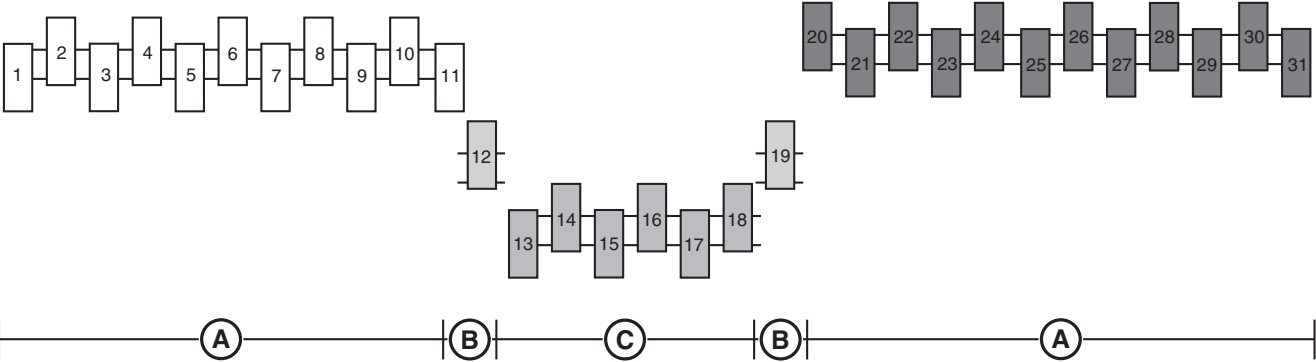
20-Row Units with 50 cm (19.68 in) Spacing

CQ1380949—UN—25OCT24

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units

3131



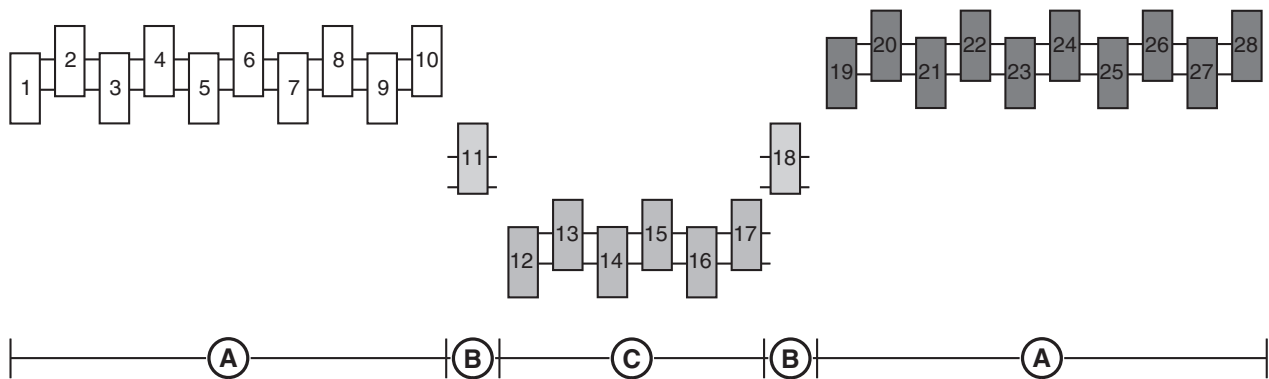
Fertilizer Row Spacing Conversion

CQ1380950—UN—25OCT24

31-Row Units with 45 cm (17.71 in) Spacing

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units

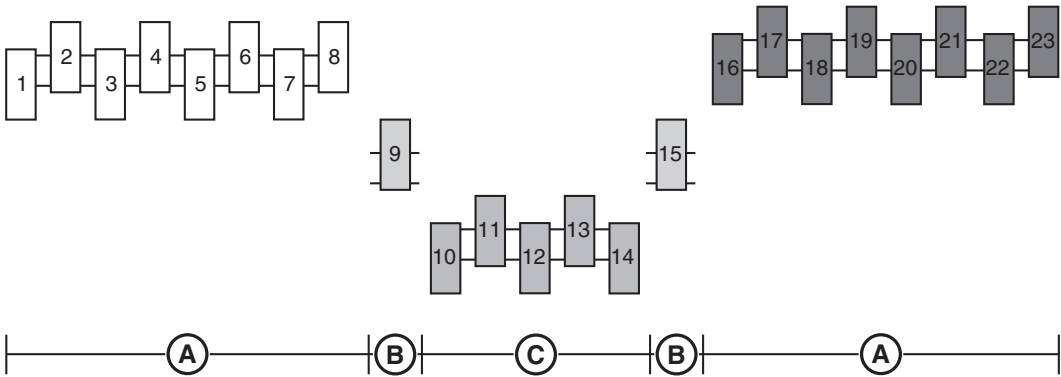


CQ1380952—UN—25OCT24

28-Row Units with 50 cm (19.68 in) Spacing

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units

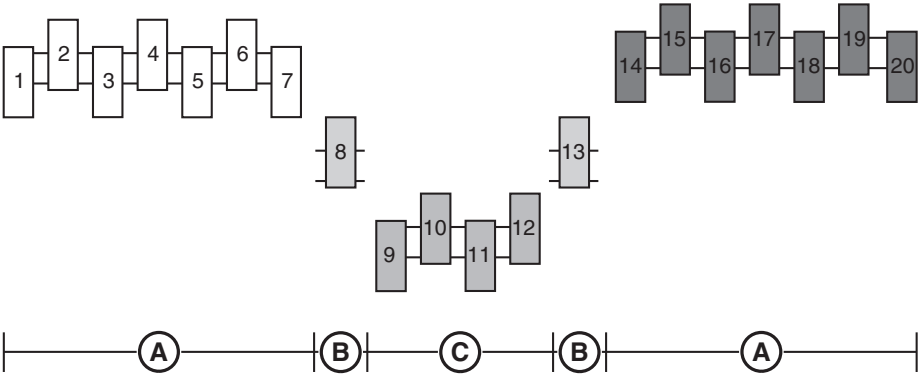


23-Row Units with 60 cm (23.62 in) Spacing

CQ1380020—UN—17OCT24

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units



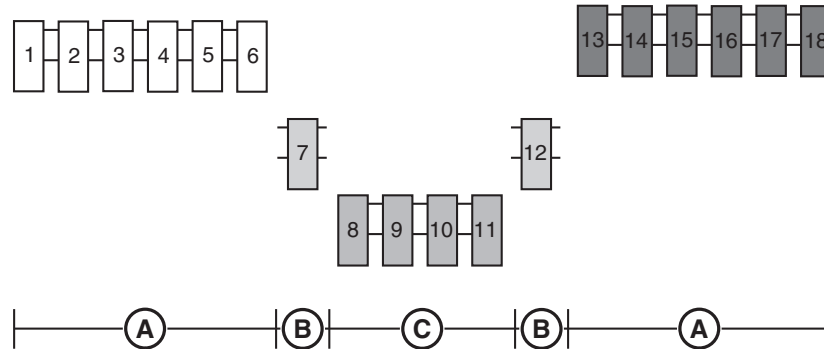
20-Row Units with 70 cm (27.56 in) Spacing

CQ1380025—UN—17OCT24

Fertilizer Row Spacing Conversion

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units

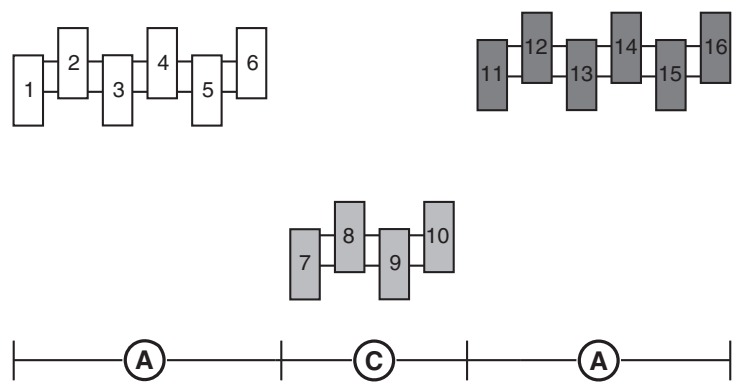


18-Row Units with 76 cm (29.92 in) Spacing

CQ1411619—UN—07JUL25

A—Wing Fertilizer Row Units
B—Swing Arm Fertilizer Row Units

C—Center Frame Fertilizer Row Units



16-Row Units with 90 cm (35.43 in) Spacing

CQ1380029—UN—17OCT24

A—Wing Fertilizer Row Units

C—Center Frame Fertilizer Row Units

E443CH7,1750698919858-19-30JUN25

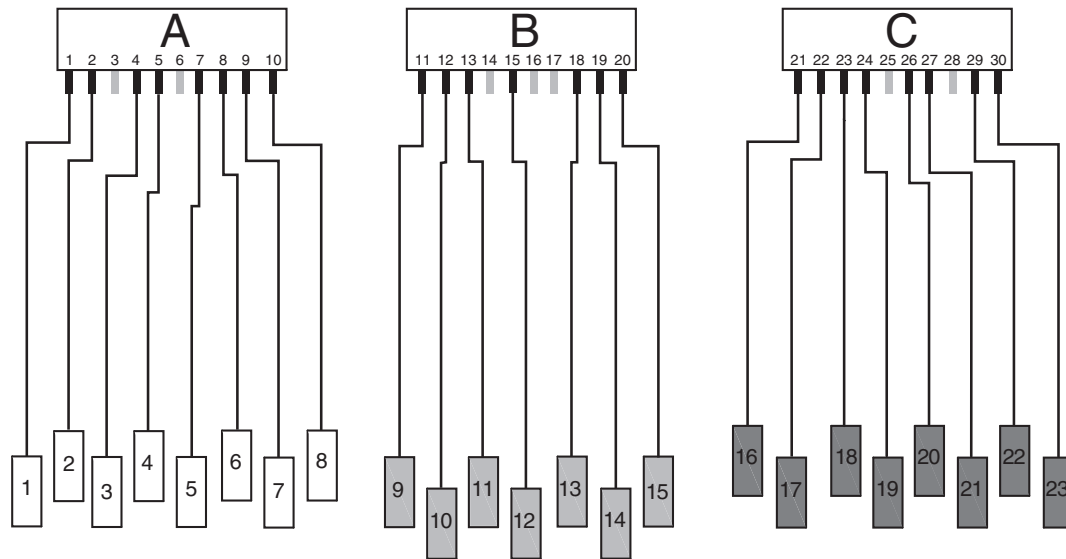
Schematics—Fertilizer Distribution Connections

Schematics represent fertilizer lines that are connecting fertilizer tanks with each row.

The schematics are oriented according to tractor and implement direction of forward movement.

NOTE: All connections without attached lines must be closed.

3123

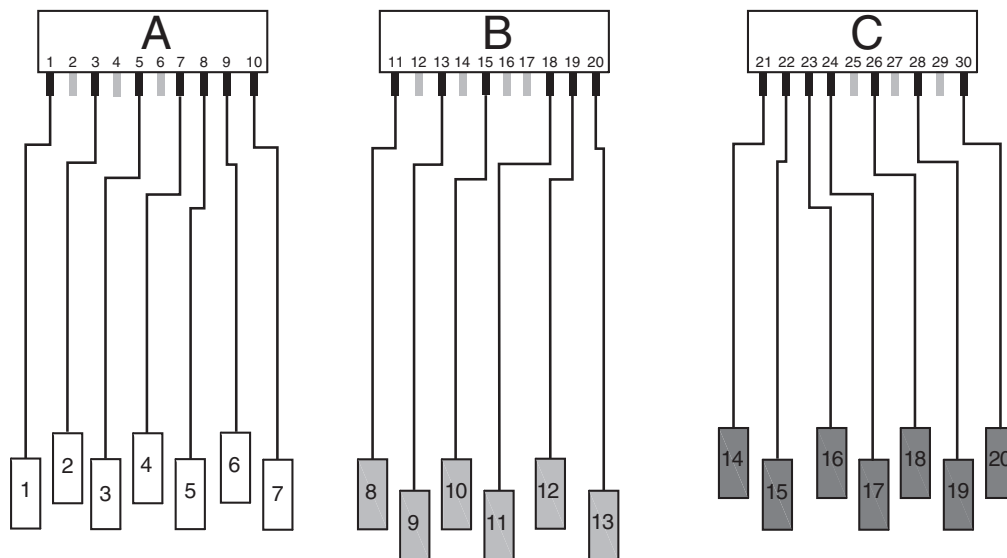


23-Row Units with 45 cm (17.71 in) Spacing

CQ1380955—UN—25OCT24

A—Left-hand Side Tube
B—Center Fertilizer Box

C—Right-hand Side Fertilizer Box



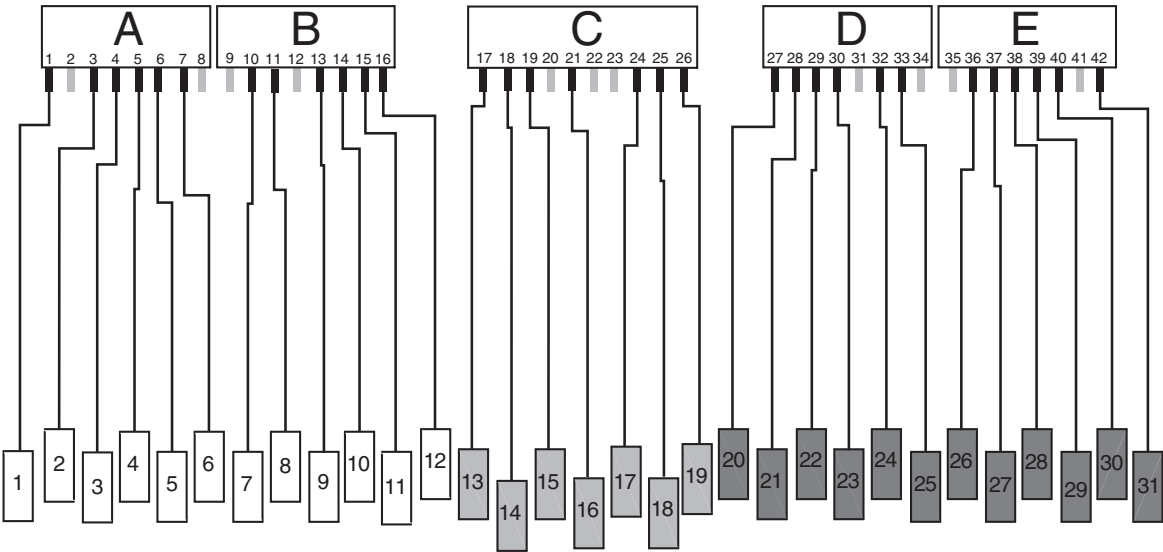
20-Row Units with 50 cm (19.68 in) Spacing

CQ1374408—UN—09AUG24

A—Left-hand Side Fertilizer Box
B—Center Fertilizer Box

C—Right-hand Side Fertilizer Box

3131



31-Row Units with 45 cm (17.71 in) Spacing

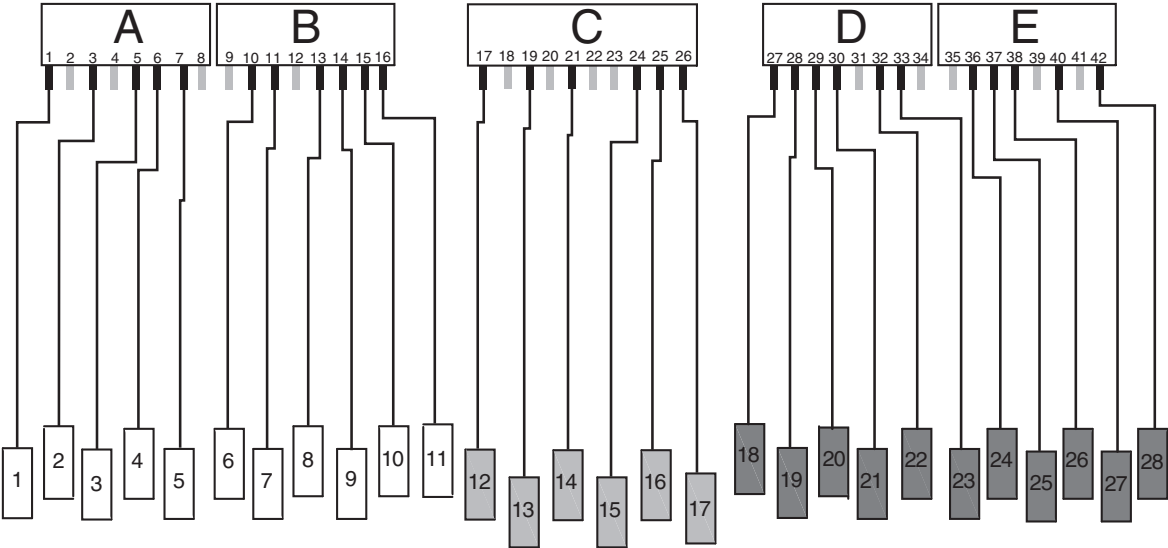
CQ1380959—UN—25OCT24

- A—Left-hand Side Fertilizer Box

B—Left-hand Side Fertilizer Box

C—Center Fertilizer Box
- D—Right-hand Side Fertilizer Box

E—Right-hand Side Fertilizer Box



28-Row Units with 50 cm (19.68 in) Spacing

CQ1380958—UN—25OCT24

Fertilizer Row Spacing Conversion

A—Left-hand Side Fertilizer Box
B—Left-hand Side Fertilizer Box
C—Center Fertilizer Box

D—Right-hand Side Fertilizer Box
E—Right-hand Side Fertilizer Box

a3rfggt,1706005439735-19-25OCT24

Fertilizer Unit Motor Position**3123****3123—23 Row Units 45 cm Spacing**

Row Counts Per Motor	1—4	5—8	9—12	13—15	16—19	20—23
Motor Identification	M1	M2	M3	M4	M5	M6

3123—20 Row Units 50 cm Spacing

Row Counts Per Motor	1—3	4—7	8—10	11—13	14—17	18—20
Motor Identification	M1	M2	M3	M4	M5	M6

3123—14 Row Units 76 cm Spacing

Row Counts Per Motor	1—2	3—5	6—7	8—9	10—12	13—14
Motor Identification	M1	M2	M3	M4	M5	M6

3123—12 Row Units 90 cm Spacing

Row Counts Per Motor	1—2	3—4	5—6	7—8	9—10	11—12
Motor Identification	M1	M2	M3	M4	M5	M6

3131**3131—31 Row Units 45 cm Spacing**

Row Counts Per Motor	1—4	5—8	9—12	13—16	17—19	20—23	24—27	28—31
Motor Identification	M1	M2	M3	M4	M5	M6	M7	M8

3131—28 Row Units 50 cm Spacing

Row Counts Per Motor	1—3	4—7	8—11	12—14	15—17	18—21	22—25	26—28
Motor Identification	M1	M2	M3	M4	M5	M6	M7	M8

3131—18 Row Units 76 cm Spacing

Row Counts Per Motor	1—2	3—4	5—7	8—9	10—11	12—14	15—16	17—18
Motor Identification	M1	M2	M3	M4	M5	M6	M7	M8

Fertilizer Row Spacing Conversion

3131—16 Row Units 90 cm Spacing

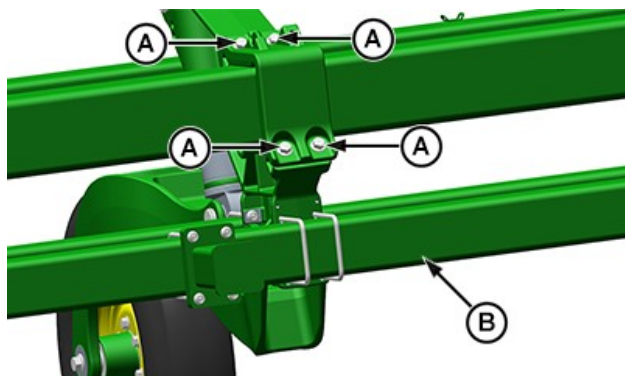
Row Counts Per Motor	1—2	3—4	5—6	7—8	9—10	11—12	13—14	15—16
Motor Identification	M1	M2	M3	M4	M5	M6	M7	M8

jgsjwxm,1729594741668-19-26OCT24

Wing Wheels and Handrails Spacing Conversion

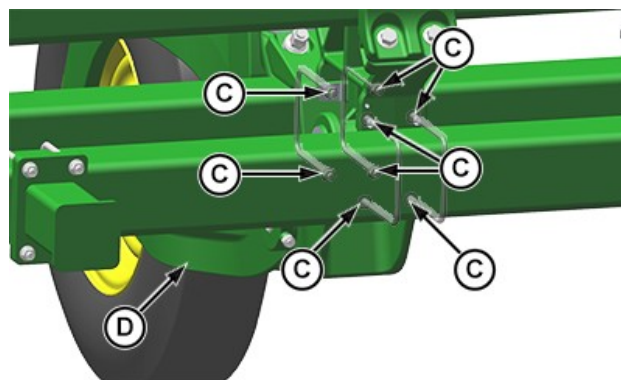
Wing Frame Wheels Position

1. Unfold the machine. (See Unfold and Fold Planters in Transport section.)



CQ1380833—UN—24OCT24

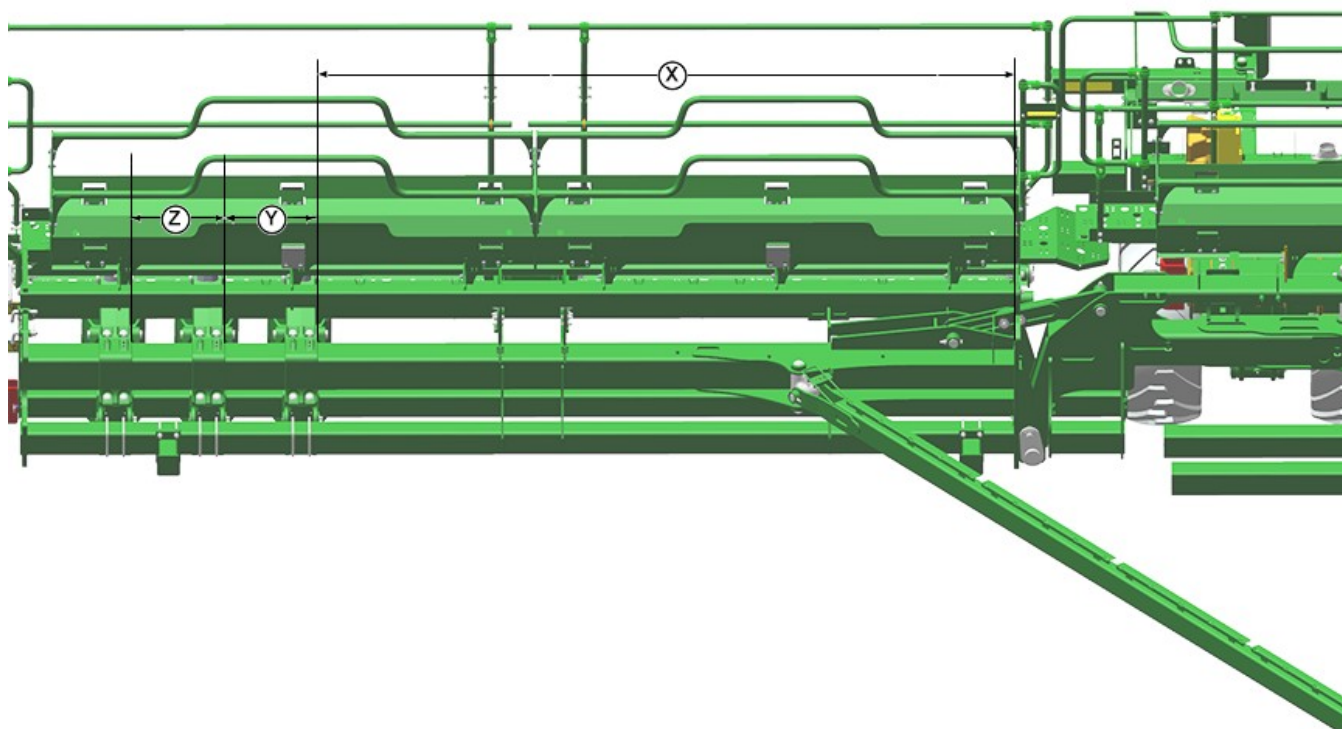
2. Using a suitable support, support wing frame (B).
3. Loosen four screws (A) from clamp.



CQ1380834—UN—24OCT24

4. Loosen eight nuts (C) from wing wheel arm.
5. Move wing wheels frame (D) to desired spacing, according to the following tables.

Wing Wheel Positions Tables



CQ1380830—UN—24OCT24

3123		
Spacing (cm)	Distance (X) (mm)	Distance (Y) (mm)
45	2020	450
50	1745	500
52.5	1945	525
60	1645	600
70	1945	700

Wing Wheels and Handrails Spacing Conversion

76	1645	600
90	2020	450

3131			
Spacing (cm)	Distance (X) (mm)	Distance (Y) (mm)	Distance (Z) (mm) ^a
45	3370	450	450
50	3245	500	500
52.5	2995	525	525
60	2845	600	600
70	2645	700	700
76	3100	640	640
90	3370	450	450

^aAvailable only to 3131 planters.

E443CH7,1750698994537-19-30JUN25

Adjust Handrails Position for Spacing Conversion

CAUTION: Failure to comply with safety instruction may cause accidents.

The position of the vertical handrail tubes needs to be adjusted according to the spacing used on the machine. The adjustments must be in accordance with the table provided below.

The change in position is made to ensure that the tube is between two planting rows, and thus avoids

interference between these two components when lifting the planter's wings for transportation.

NOTE: To adjust vertical tubes, see Assemble Handrails in this section.

3123FT Planter

Adjust the position of tubes (A1) and (A2) in relation with lateral tubes (B1) and (B2), to comply distances (X) and (Y).



A1—Right-hand Side Tube
B1—Right-hand Side Lateral Tube
X—Distance

A2—Left-hand Side Tube
B2—Left-hand Side Lateral Tube
Y—Distance

CQ1380832—UN—24OCT24

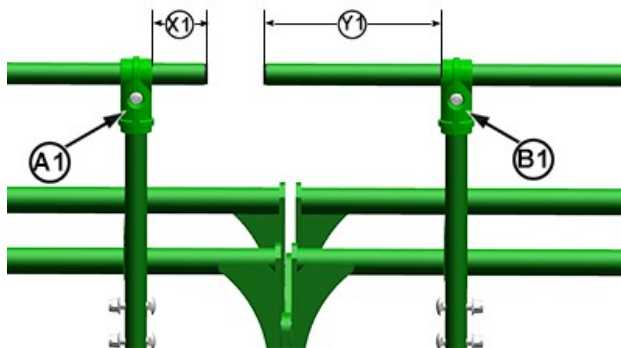
Rows Number	Rows Spacing (cm)	Distance X (cm)	Distance Y (cm)
23	45 (17.71 in)	154.5 (60.83 in.)	150.0 (59 in.)
20	50 (19.68 in)	180.4 (71 in.)	175.8 (69.21 in.)
17	60 (23.62 in)	154.5 (60.83 in.)	150.0 (59 in.)
14	70 (27.56 in)	180.4 (71 in.)	175.8 (69.21 in.)
14	76 (29.92 in)	180.4 (71 in.)	175.8 (69.21 in.)
12	90 (35.43 in)	154.5 (61 in.)	150.0 (59 in.)

3131FT Planter

Adjust position of center tubes to comply with distance to edge of handrail handlebars.

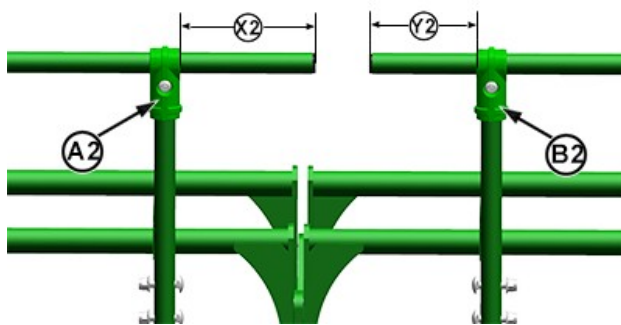


CQ1380268—UN—21OCT24



CQ1380265—UN—21OCT24

- A1—Right-Hand Side Center Tube 1
- B1—Right-Hand Side Center Tube 2
- X1—Distance Between Center Tube 1 and Handrail Edge
- Y1—Distance Between Center Tube 2 and Handrail Edge
- A2—Left-Hand Side Center Tube 1
- B2—Left-Hand Side Center Tube 2
- X2—Distance Between Center Tube 1 and Handrail Edge
- Y2—Distance Between Center Tube 2 and Handrail Edge

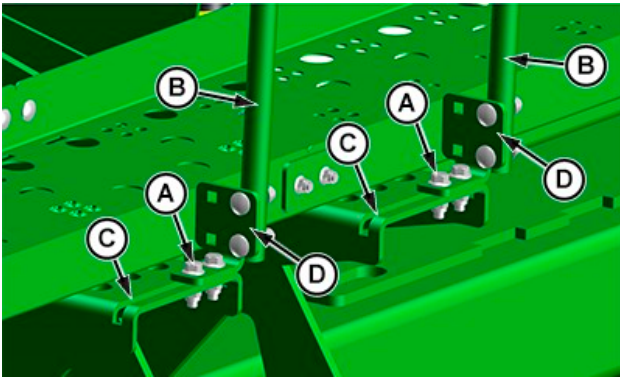


CQ1380479—UN—22OCT24

Wing Wheels and Handrails Spacing Conversion

Rows Number	Rows Spacing (cm)	Distance X1 (cm)	Distance Y1 (cm)	Distance X2 (cm)	Distance Y2 (cm)
31	45 (17.71 in.)	7.8 (3.07 in.)	24.7 (9.72 in.)	20.0 (7.87 in.)	15.8 (6.22 in.)
28	50 (19.68 in.)	28.5 (11.22 in.)	2.0 (0.79 in.)	2.0 (0.79 in.)	40.7 (16.02 in.)
23	60 (23.62 in.)	28.5 (11.22 in.)	2.0 (0.79 in.)	20.0 (7.87 in.)	40.7 (16.02 in.)
20	70 (27.56 in.)	10.5 (4.13 in.)	24.7 (9.72 in.)	20.0 (7.87 in.)	15.8 (6.22 in.)
18	76 (29.92 in.)	10.5 (4.13 in.)	2.0 (0.79 in.)	2.0 (0.79 in.)	15.8 (6.22 in.)
16	90 (35.43 in.)	7.8 (3.07 in.)	24.7 (9.72 in.)	20.0 (7.87 in.)	15.8 (6.22 in.)

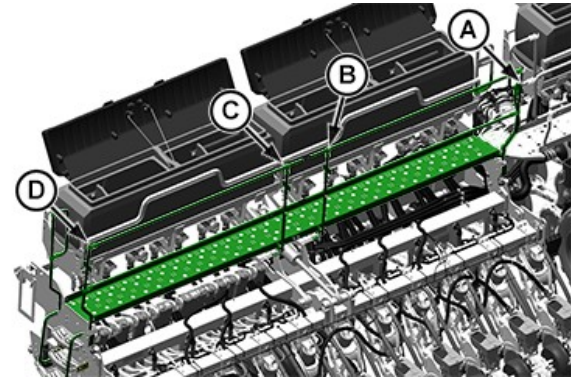
Adjust Vertical Tube Position



CQ1381026—UN—25OCT24

1. Loosen screws and nuts (A).
2. Adjust vertical tube (B) in the cut-out (C) to the required position according to the spacing of the planter.
3. If necessary, plate (D) can be installed in reverse to increase the lateral movement area.
4. Tighten the screws and nuts (A).

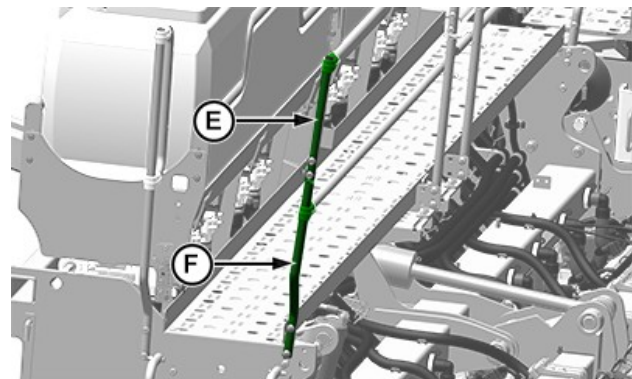
E443CH7,1750699012702-19-30JUN25



CQ1381042—UN—26OCT24

Handrails Adjustments Order

1. Start handrail adjustment by vertical tube (A) next to center platform.
2. Then, proceed handrail adjustment with center vertical tube (B).
3. After that, repeat the procedure on vertical (C) and center tube (D), respectively.

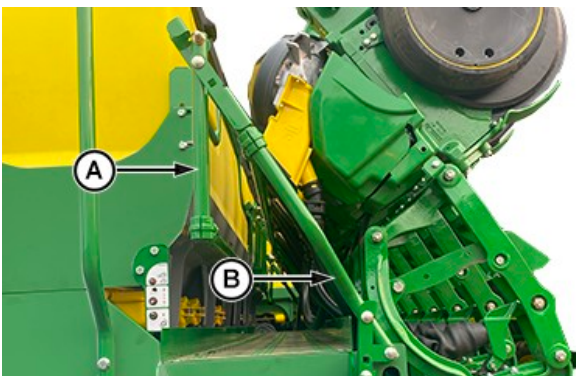


CQ1381043—UN—26OCT24

Corner Vertical Tube

Adjust the Handrails for Transport

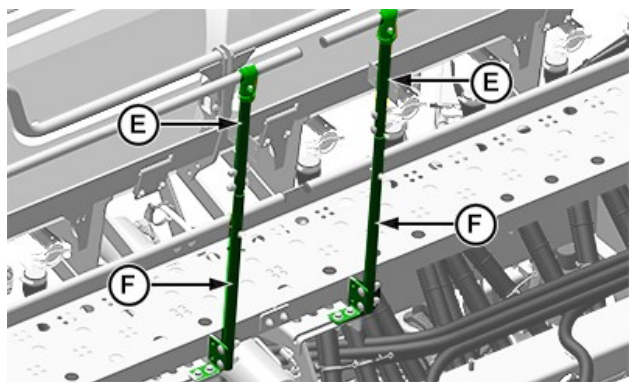
Wing Platform Handrail Adjustments



CQ1380308—UN—21OCT24

Handrail Positioned in Transport

The handrails must be adjusted to proceed with the machine transport. Otherwise, it can have interference between handrails and rows when the machine is folded. To prevent that, it is necessary to:

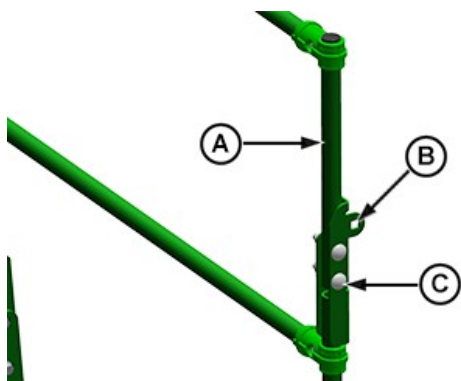


CQ1381044—UN—26OCT24

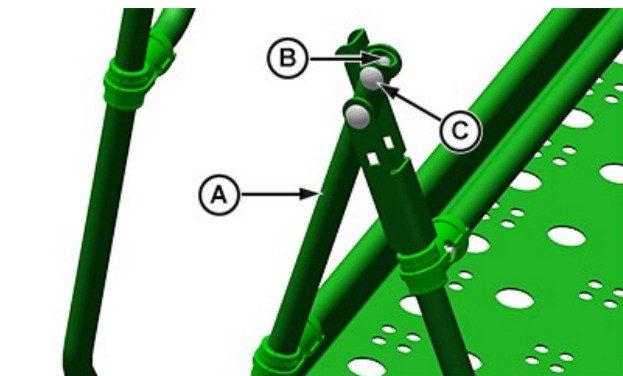
Center Vertical Tube

4. Always start adjustments by upper vertical tube (E). Once adjusted, proceed with lower vertical tube (F).

Upper Vertical Tube Adjustment



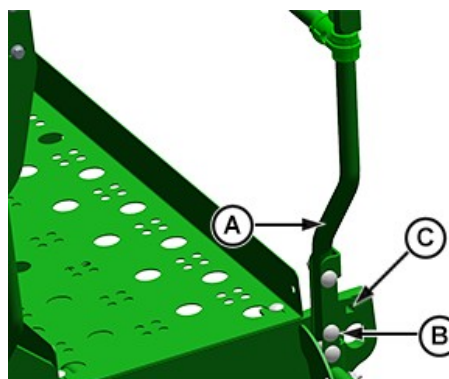
CQ1381045—UN—26OCT24



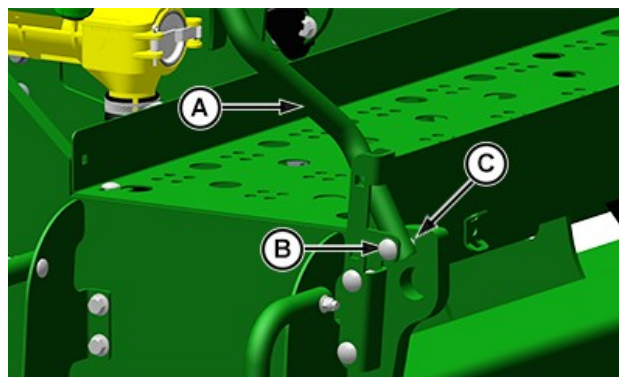
CQ1380310—UN—21OCT24

1. To adjust upper vertical tube (A), remove screw (C).
2. Position upper vertical tube (A) as shown, and install screw (C) on hole (B).
3. Repeat the same procedure on remaining vertical tubes, both corner and center.

Lower Vertical Tube Adjustment

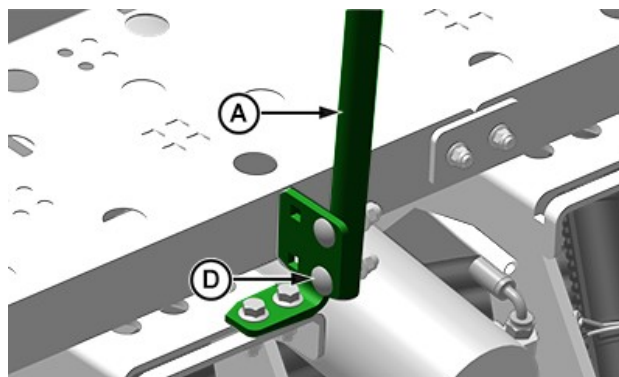


CQ1380311—UN—21OCT24



CQ1380312—UN—21OCT24

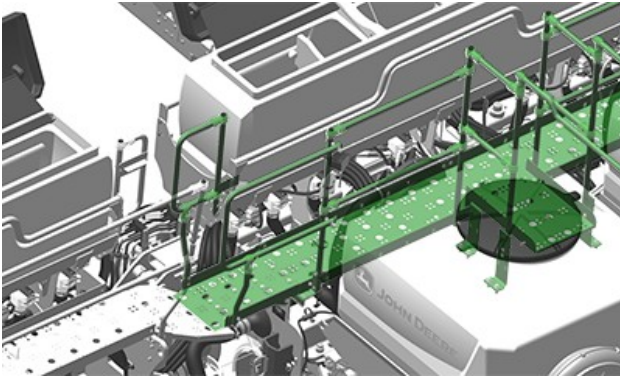
1. To adjust lower vertical tube (A), remove screw (B).
2. Position lower vertical tube (A) as shown, and install screw (B) on hole (C).
3. Repeat the same procedure on remaining corner vertical tubes.



CQ1381046—UN—26OCT24

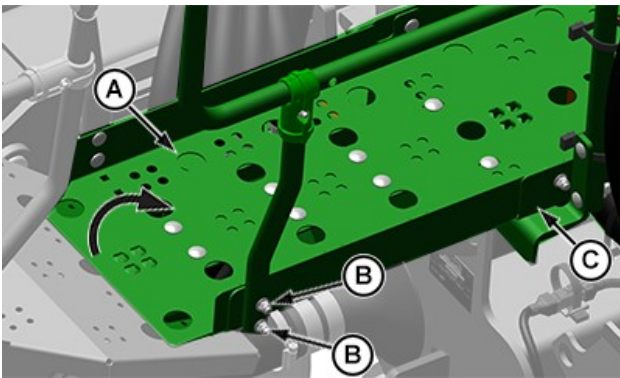
4. On center vertical tubes, remove screw (D) and position lower vertical tube (A).
5. After positioned, install screw (D) again.

Center Platform Handrail Adjustments



Center Platform General View

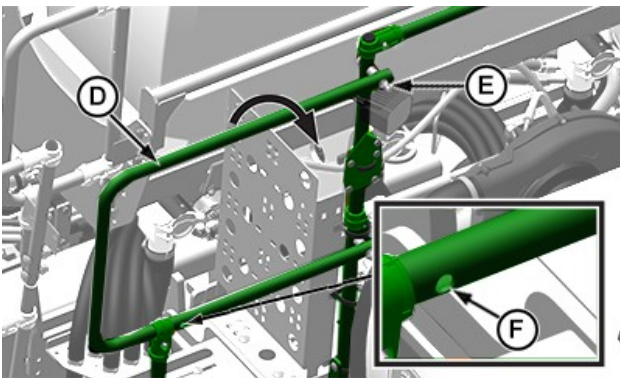
CQ1381047—UN—26OCT24



Center Pivot Platform

CQ1381048—UN—26OCT24

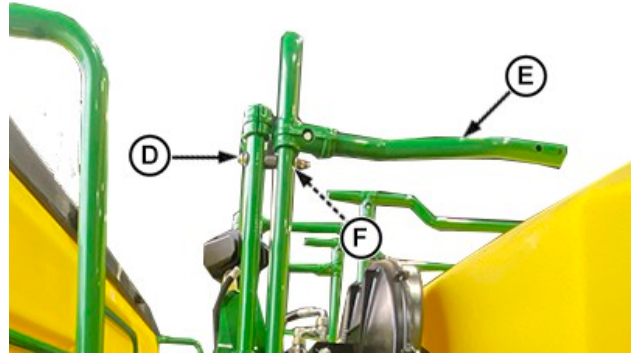
1. Remove screws (B), and flip center pivot platform (A) until it touches floor plate (C).



U-Handrail

CQ1381049—UN—26OCT24

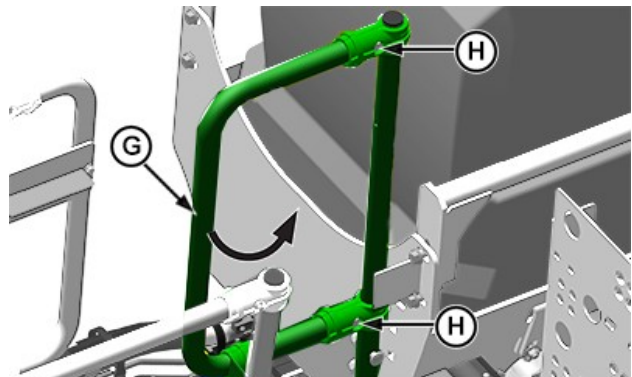
2. Remove screw (E), and flip U-handrail (D) until hole (F) is aligned with the hole where screw (E) was installed.



U-Handrail Positioned

CQ1381050—UN—26OCT24

3. Then, once U-handrail (D) is positioned, install screw (E) again on hole (F).



U-Handrail Positioned

CQ1381051—UN—26OCT24

4. To adjust C-handrail (G), loosen screws (H) and flip C-handrail (G) towards center platform.

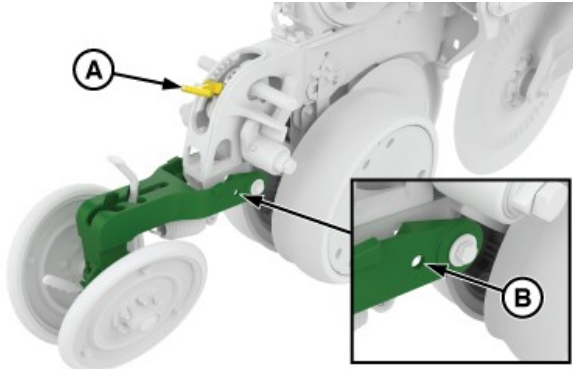
NOTE: While adjusting C-handrail (G), it may be necessary to rotate working lights to prevent interference.

a3rfggt, 1729253110286-19-26OCT24

Checking the Seed Population

Check Seed Population

NOTE: The procedure shown here refers to the manual check of the seed population. For the runoff procedure, see the SeedStar 5 Monitor Operator's Manual.



CQ1367895—UN—28MAY24

1. Insert a screw or pin on hole (B) to maintain closing wheels lifted.

NOTE: To carry out the check, the spring must be removed. Otherwise, the spring can fall off.

2. Adjust depth handle (A) two positions from minimum.
3. Plant over a short distance and check if the seeds are visible in the furrow. Adjust depth handle (A), if necessary.
4. Plant a selected area from table to obtain a sufficiently significant area to check the seed population.

Planting Distance for Population Check				
Row Width	45 cm (18 in)	50 cm (20 in)	76 cm (30 in)	90 cm (35 in)
Planting Distance	22 m (72 ft)	20 m (66 ft)	13 m (43 ft)	11 m (36 ft)



BM018304—UN—20MAR19

5. Mark out the distance planted with markers (C).

6. Count seeds (D) between the markers.

NOTE: When planting with little depth and with closing wheels raised, seeds tend to roll or jump. Precision of seed spacing is affected.

NOTE: If the machine is equipped with vacuum seed meter, and all settings are correct but the population is high, reduce the vacuum level by units of 1 inch until the correct population is reached. If the real population is low, increase vacuum level by half to 1 inch jumps until the correct population is reached.

kp318th,1719600817536-19-07OCT24

Accessories and General Equipment

General

For proper machine operation, it is important that the machine frame is fully lowered into the correct planting position. Achieving this position can be difficult with some implement combinations, especially when planting in hard soil conditions. If this situation is encountered, proceed as follows:

1. Reduce the implement downforce.
2. Avoid using more implement downforce than required.
3. Add ballast to wing frame when the conditions require.
4. This is important when the frame-mounted coulter is being used.

a3rfggt,1706005921645-19-03JUL24

RowCommand

The RowCommand system incorporates an electrical motor in each seed meter to manage seed output, reduce yield loss, and improve harvest capability. Individual meters are grouped into RowCommand sections. RowCommand sections are operated manually or with the John Deere Section Control for automatic operation. For more information, contact a John Deere dealer or other service provider.

PS9EIDU,1773323389893-19-16APR26

SeedStar Integrated Pneumatic Downforce System (If Equipped)

The SeedStar integrated pneumatic downforce (PDF) system provides “on-the-go” downforce pressure changes to the seed and fertilizer row units. The system air compressor supplies pressurized air to an air storage tank. The air storage tank provides extra air capacity for fast downforce changes.

With the SeedStar integrated PDF, the operator can:

- Make “on-the-go” downforce changes from the tractor cab.
- Change the downforce pressure for differing soil types or for irrigated versus dry land soils.

For more information, see SeedStar application help.

a3rfggt,1706005922414-19-22FEB24

SeedStar Electric Drive System

The seed meter ExactMerge and MaxEmerge 5e drive system uses electric motors to control the speed. The SeedStar monitor controls the speed of each motor.

- The operator matches the seed population to different soil types or to irrigated versus dry soils.
- Multiple rate selections are programmed and applied as required.

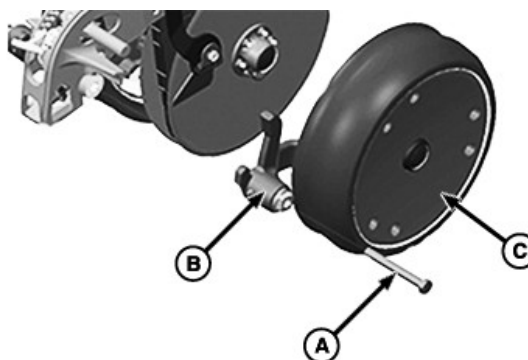
For more information, see SeedStar Application Help.

a3rfggt,1706005922517-19-21FEB24

Depth Gauge Wheel Spacer Bushing

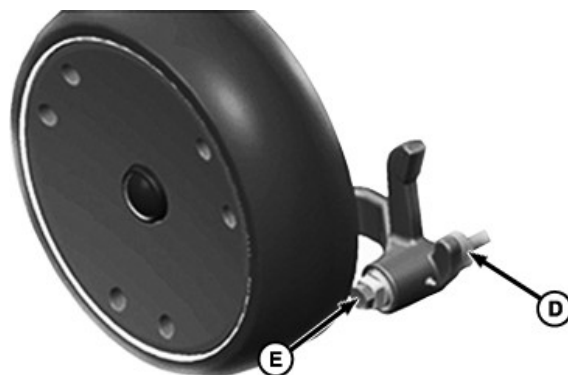
NOTE: In situations of humid soil or difficult handling, it is possible to install a kit, which allows a greater distance from the calibrating wheels of the seed disk. For more information, contact a John Deere dealer or other service provider.

To install the kit, proceed as follows:



BM028529—UN—07NOV18

1. Remove the screw (A).
2. Remove the pivot arm (B) and the depth gauge wheels (C).



BM028529—UN—07NOV18

3. Install the spacer bushing (D), the new screw (E), and reinstall the depth gauge wheel on the row unit.
4. Tighten the screw as specified.

Specification

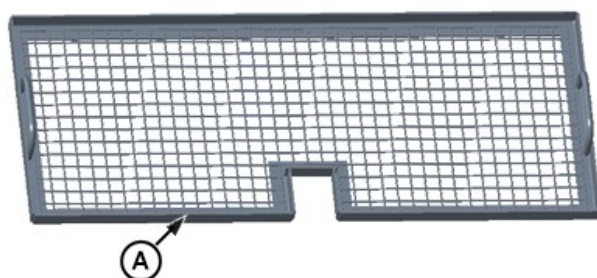
Depth Gauge Wheel Screw

(E)—Torque. 280 N·m
(206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the screw (E). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.

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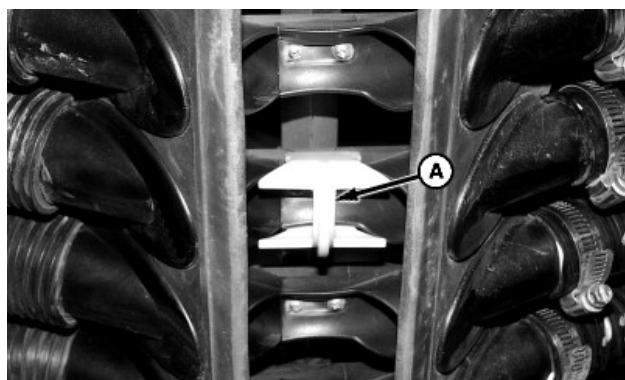
Sifter for Fertilizer Box



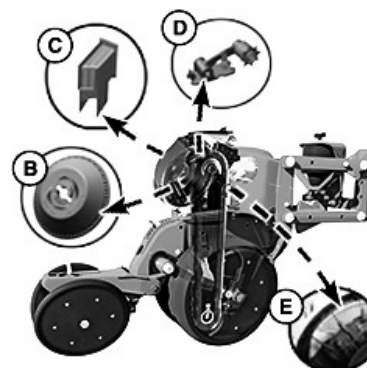
CQ1374460—UN—08AUG24

In situations of fertilizer agglomeration, it is possible to install a sifter (A), which prevents the operation of the metering device from being hindered. For more information, contact a John Deere dealer or other service provider.

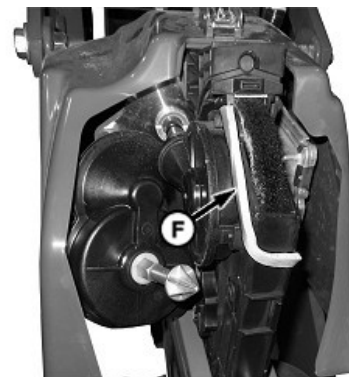
PS9EIDU,1773323729408-19-16APR26



A50710—UN—17OCT02



BML020059—UN—03APR20



BML008044—UN—13AUG20

Sorghum Kit for ExactEmerge

1. The sorghum kit consists of the following components:

Sorghum Kit Components	
A	Nozzle Insert
B	Seed Disk
C	Elbow
D	Seed Knockout Wheel
E	Double Eliminator
F	Cartridge Seal

- A—Nozzle Insert**
B—Seed Disk
C—Elbow
D—Seed Knockout Wheel
E—Double Eliminator
F—Cartridge Seal

2. Refer to the following procedures when installing the sorghum kit.

- a. See Preparing Mini-Hopper When Planting Small Seed Sizes in Preparing the Planter section.
- b. See Install the Seed Disk in Operating the Seed Meter—ExactEmerge section.
- c. See Install the Knockout Wheel Assembly in Operating the Seed Meter—ExactEmerge section.
- d. See Adjust the Double Eliminator in Operating the Seed Meter—ExactEmerge section.

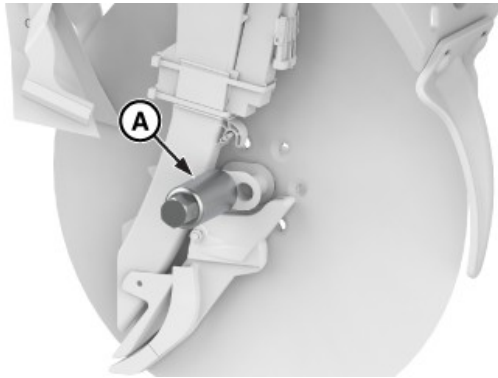
- e. See Remove and Install the BrushBelt Cartridge in Operating the Seed Meter—ExactEmerge section.

IMPORTANT: Avoid seed loss. Make sure the cartridge seal (F) is well placed.

NOTE: All the components are part of the bundle for growing sorghum. Contact a John Deere dealer or other service provider.

a3rfggt,1706005962719-19-14APR26

Special Wrench to Remove the Disk Shaft (MaxEmerge 5e Offset only)

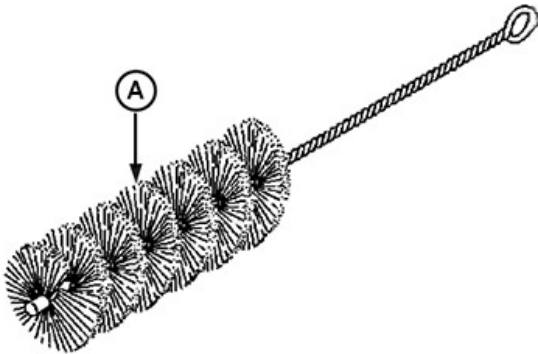


CQ1367899—UN—29MAY24

Special wrench (A) CQ80817 is used to remove the disk shaft on offset MaxEmerge 5 and 5e row units, and it accompanies the planter. It changes setting from offset to concentric disk.

kp318th,1719600118515-19-28JUN24

Cleaning Brush for MaxEmerge 5e

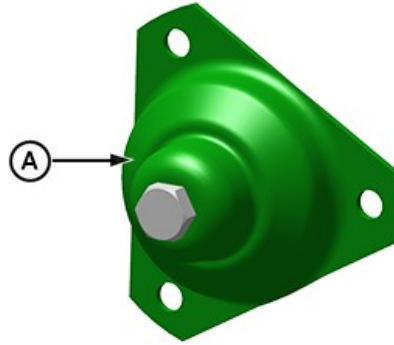


CQ1360555—UN—15MAY24

The cleaning brush (A) accompanies the planter. It is used to clean the seed tube on MaxEmerge 5e row units.

a3rfggt,1706005971783-19-26FEB24

Disk Disassembly Tool



CQ1360482—UN—15MAY24

The disk disassembly tool (A) accompanies the planter. It is used to disassembly the double disks blade and closing wheels on MaxEmerge 5e offset row units.

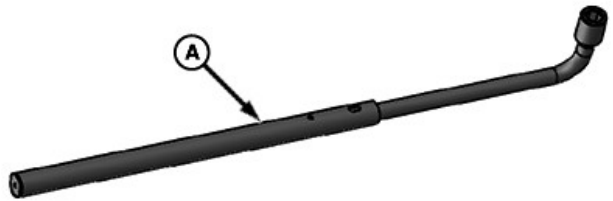
a3rfggt,1706005974510-19-23FEB24

Special Tool for Tightening Planter Screws

The special tool (A) accompanies the planter, is used in several points of the machine to ensure the application of a torque specified:

Specification

Special Tool for Tightening	
Planter Screws (A)—Torque.	280 N·m (206 lb·ft)



BML012202—UN—27JUL20

Store the tool (A) with the planter and use it whenever necessary.

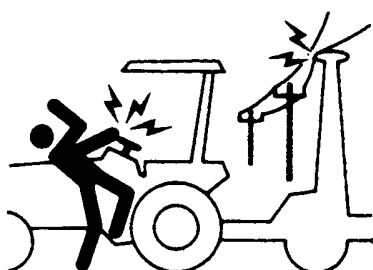
K2F379Y,00000E0-19-05SEP25

Transport

General



N43834—UN—20SEP91



N39394—UN—06OCT88

CAUTION: When transporting the planter on public roads at night or during the day, use the tractor's lights to warn other road users. This equipment may not comply to all legislation needed for transporting on public road. Check applicable legislation and permitted dimensions.

Maximum planter speed is 20 km/h (12.5 mph). **DO NOT** exceed this speed. Never drive at a speed which does not allow the complete control of the tractor. Reduce speed when traveling over uneven ground.

During field transport, do not transport planter with fertilizer and seed exceeding 1/3 of capacity.

For road transport with a truck, never transport the planter with commodities in tanks.

Ensure that bystanders remain at a safe distance from the planter when in operation.

Take care when traveling close to high-voltage power lines. If any part of the planter touches these lines, an accident of irreparable results may occur.

The maximum angle of inclination is 26°—above this, there is a risk of tipping over.

E443CH7,1750699920620-19-01JUL25

Unfold and Fold Planters

CAUTION: Avoid serious injury or death from contact with electric lines. Take care when moving or operating the planter near electric lines. Also, make sure that there is no-one near the planter.

NOTE: The maximum angle for Easy Fold to work correctly is 5°—above this, it will not close automatically.

Unfold Machine

Description	Commands
1. Raise the planter (central frame).	-
2. Access TRANSPORT.	On monitor, open STRUCTURE CONTROL > TRANSPORT
3. Access MANUAL MODE.	On monitor, open TRANSPORT MODE > MANUAL MODE
4. Access WING WHEEL LIFT.	On monitor, open STRUCTURE CONTROL VCR > WING WHEEL LIFT
5. Lower the wing wheel until the wheels touch the ground.	SCV I RETRACTION
6. Remove the service locks from lift cylinders (center and wings wheels). ^a	-
7. Uninstall U-bracket that locks wings to tongue. ^a	-
8. Remove seed row rockshaft assembly pin. ^a	-
9. Access REAR RANK LIFT.	On monitor, open STRUCTURE CONTROL SCV > REAR RANK LIFT
10. Lower rear rank lift.	SCV I PRESSURE
11. Place the tractor transmission in NEUTRAL position.	See Tractor Operator's Manual.
12. Lower hitch tube.	Two-point hitch: through the tractor's hydraulic arms. Drawbar (if equipped): on monitor, open AUXILIARY SCV > DRAWBAR RAISE SCV I EXTENSION
13. Access WING FOLD.	On monitor, open STRUCTURE CONTROL SCV > WING FOLD
14. Unfold the wings frame.	As the wings are released, raise (level) the hitch tube.
15. Access TONGUE LATCH.	On monitor, open AUXILIARY SCVs > TONGUE LATCH

Description	Commands
16. Close the tongue latch.	SCV II EXTENSION

^aIf machine was removed from storage.

Fold Machine

Description	Commands
1. Access PLANTING.	On monitor, open STRUCTURE CONTROL > PLANTING
2. Raise the planter (Central Frame and Wing Frame Lift Cylinder).	SCV I EXTENSION
3. Place the tractor transmission in NEUTRAL position.	See Tractor Operator's Manual.
4. Access TRANSPORT.	On monitor, open STRUCTURE CONTROL > TRANSPORT
5. Access MANUAL MODE.	On monitor, open TRANSPORT MODE > MANUAL MODE
6. Access TONGUE LATCH.	On monitor, open AUXILIARY SCVs > TONGUE LATCH
7. Open the hitch lock.	SCV II RETRACTION
8. Access WING FOLD.	On monitor, open STRUCTURE CONTROL SCV > WING FOLD
9. Fold the wings frame.	Lower the hitch tube for wing attachment.
10. Raise the hitch tube as the wings close.	Two-point hitch: through the tractor's hydraulic arms. Drawbar (if equipped): on monitor, open AUXILIARY SCV > DRAWBAR RAISE SCV I EXTENSION
11. Access REAR RANK LIFT.	On monitor, open STRUCTURE CONTROL SCV > REAR RANK LIFT
12. Raise the rear rank lift (seed row unit rockshaft assembly).	SCV I RETRACTION
13. Access WING WHEEL LIFT.	On monitor, open STRUCTURE CONTROL SCV > WING WHEEL LIFT
14. Raise the wing wheel lift.	SCV I RETRACTION

NOTE: When elevating the rockshaft with the planter in the open/planting position, the operation must be performed on level ground. Performing this procedure on uneven terrain may cause line interference with the structure of the central lines extension.

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Safe Transport

Road Transport with Truck

NOTE: Only transport the machine when it is empty, without seeds and fertilizer.

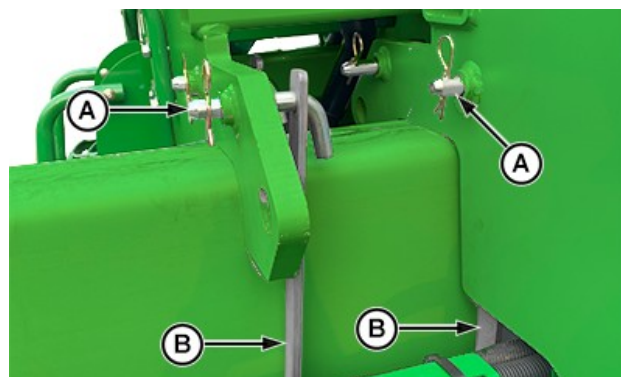
NOTE: See SeedStar 5 Operator's Manual for more informations about transport settings.

1. Fold handrails. (See Adjust the Handrails for Transport in Wing Wheels and Handrails Spacing Conversion.)
2. Fold center platform. (See Adjust the Handrails for Transport in Wing Wheels and Handrails Spacing Conversion.)

IMPORTANT: It is necessary to install service locks on every lift cylinders, both for the center and wing wheels.

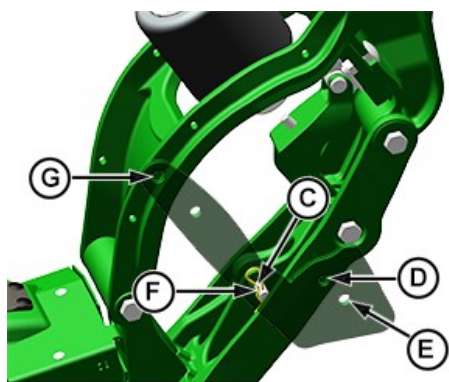
NOTE: For loading using a tractor, install service locks only when the machine is on top of the truck.

3. Install service locks on machine. (See Install the Service Locks in Maintenance and Service Intervals).



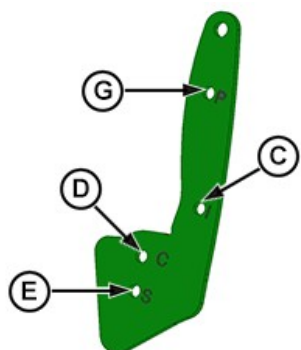
CQ1379933—UN—16OCT24

4. Install both U-bracket (B) at the junction of the wing frame and the tongue latch, and secure them with pins (A) as shown.
- 5.



CQ1389279—UN—16JAN25

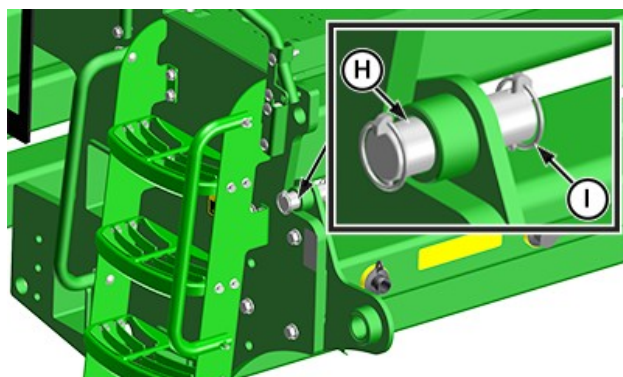
Lock Plate



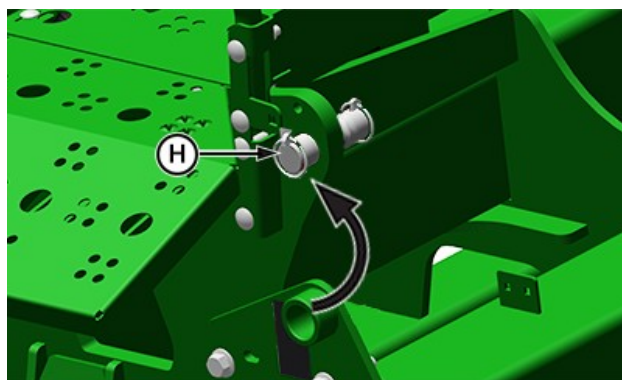
CQ1389324—UN—16JAN25

Lock Plate Holes Identification

- a. For transport operation, with pin and cotter pin (F):
 - Lock center row units in hole (C).
 - Lock rockshaft row units in hole (D).
 - Lock CCS extension row units in hole (E).
- b. For planting operation, with pin and cotter pin (F):
 - Lock center row units in hole (G).
 - Lock rockshaft row units in hole (G).
 - Lock CCS extension row units in hole (G).



CQ1389283—UN—16JAN25

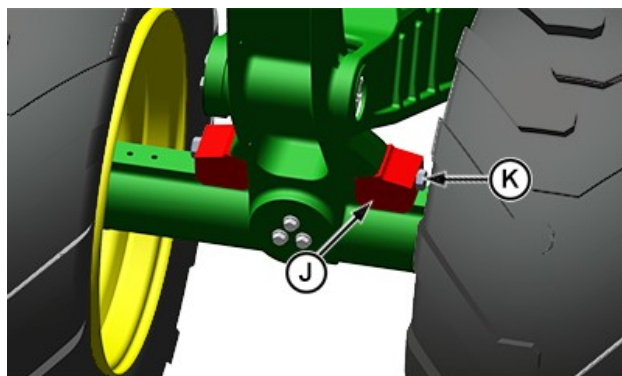


CQ1389284—UN—16JAN25

6. To lock the seed row unit rockshaft assembly, install pin (H) on the lower hole, and lock it with collar pin (I).

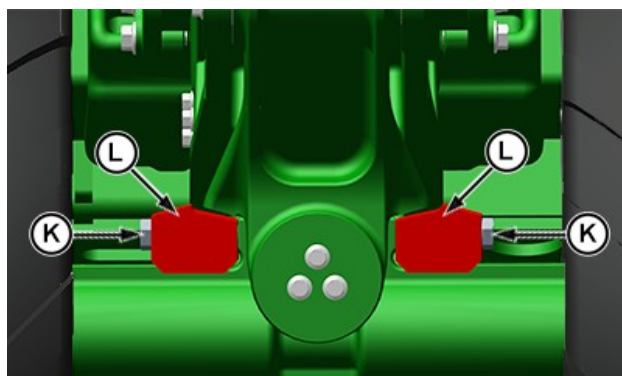
NOTE: For the planting operation, it is necessary to keep pin (H) on the upper hole.

7. Change wheels position. (See Center Wheels Position and Unlocking in Preparing the Planter.)
- 8.



CQ1389285—UN—16JAN25

Truck Transport Position



CQ1389286—UN—16JAN25

Planting Position

IMPORTANT: Center frame wheel articulation block on position (J) is allowed only to truck transport. Whenever the planter is out of the truck, the center wheels must be on position (L). If the center wheels are locked during planting, the machine can flip over.

IMPORTANT: At every start of the season, or if changing center frame wheel articulation block position, it is necessary to retighten screws according to specification.

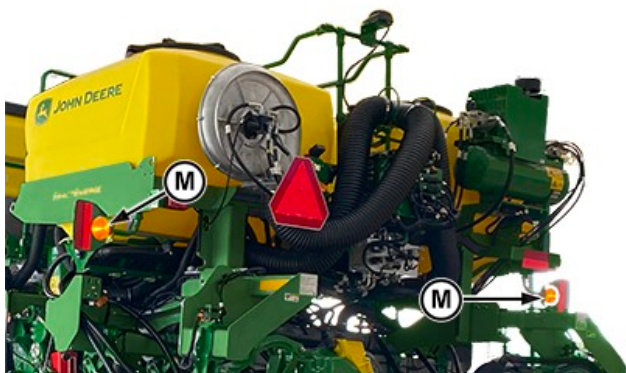
Center frame wheel articulation block has two positions:

- For truck transport**, lock center frame wheel articulation block on position (J) at both center wheels, by tighten screws (K) to specification.
- For planting**, lock center frame wheel articulation block on position (L) at both center wheels, by tighten screws (K) to specification.

Specification

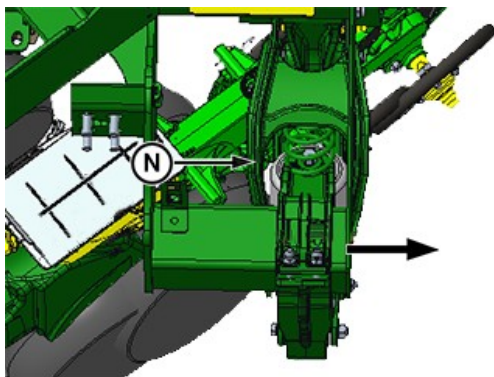
Screw—Torque. 475 N.m
(350.3 lb.ft)

- For changing center frame wheel articulation block position, flip it horizontally.



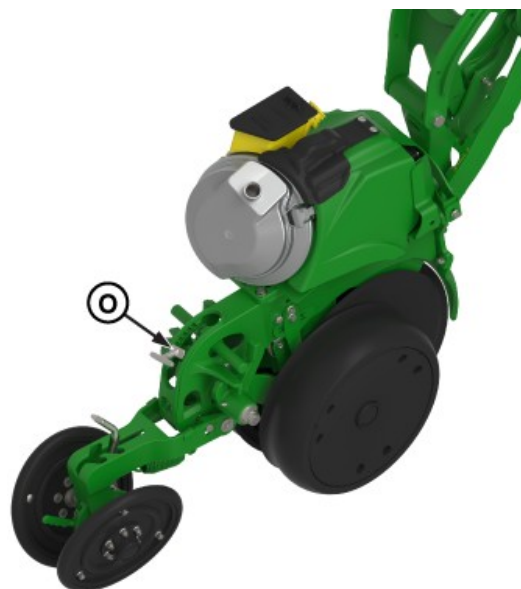
CQ1389289—UN—16JAN25

- Close amber warning lights (M) as shown on image.



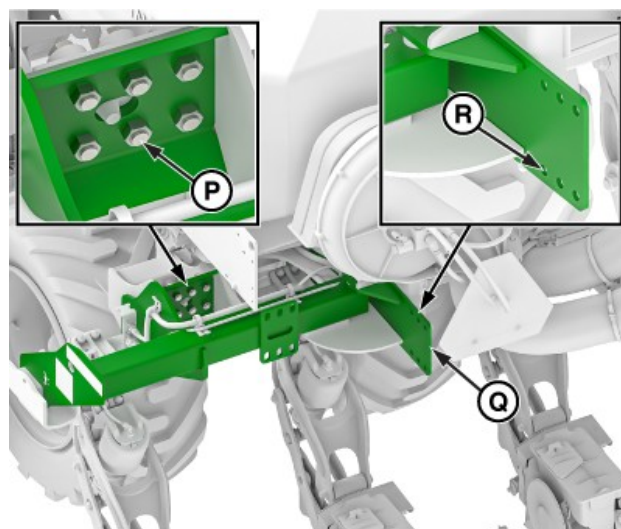
CQ1389290—UN—16JAN25

- Move seed row unit (N) laterally through extension.



CQ1451149—UN—19MAR26

- Place the calibration wheel pressure handle (O) completely below the center lines to prevent interference when folding.



CQ1457896—UN—20APR26

- To articulate CCS extension:

- Remove screws and nuts (P) from CCS extension base plate.
- Articulate CCS extension until plate latch touches CCS support (Q).
- Install screws and nuts (P) on CCS support holes (R).

Specification

Screw (P)—Torque. 300 N.m
(221.3 lb.ft)

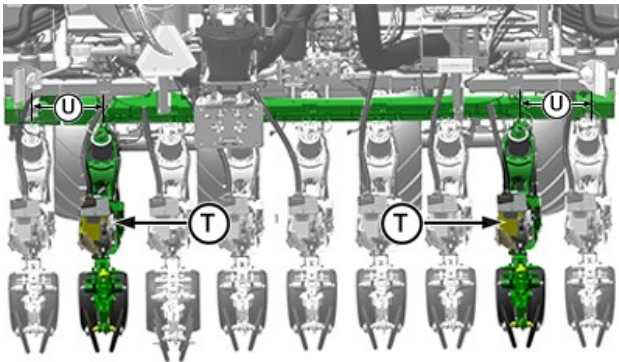
NOTE: On MaxEmerge 5e rows with offset depth gauge wheels, it is necessary to remove closing wheels when central frame extension is folded. Otherwise, the closing wheels will touch each other when folding the planter for transport.

NOTE: On MaxEmerge 5e with EmergePro rows, when central frame extension is folded, it is necessary to lock one of the closing wheels with a safety lock screw. Otherwise, the closing wheels will touch each other when folding the planter for transport.



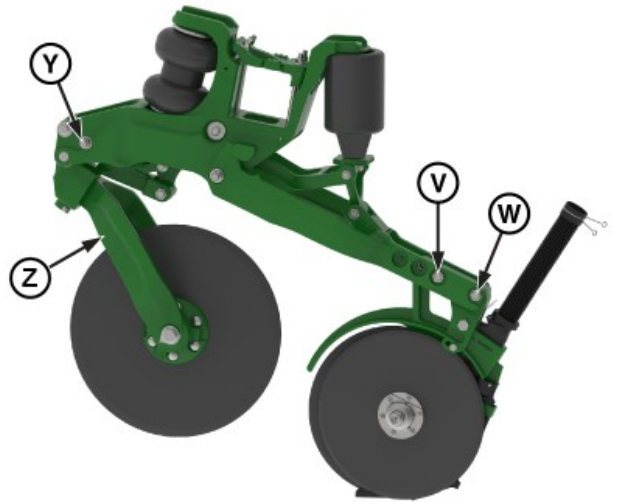
CQ1389295—UN—16JAN25

13. Articulate seed row unit (S) to position as shown on image.

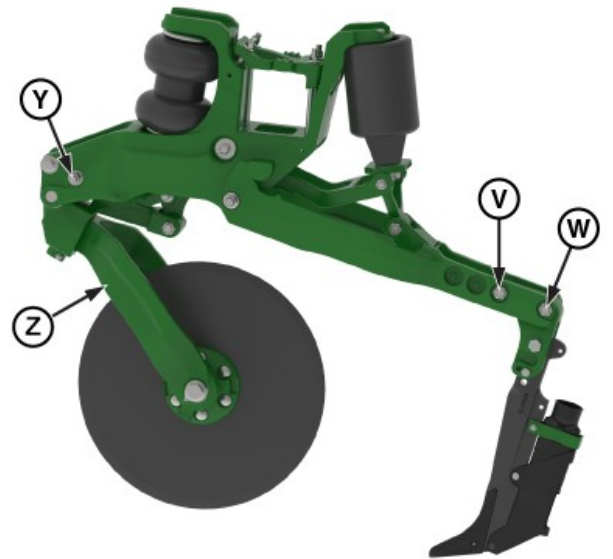


CQ1389296—UN—16JAN25

14. To reposition the CCS extension rows in the correct position for planting, the last seed rows of the center frame are used as a reference (T) to take measurement (U), corresponding to the row spacing.



CQ1451267—UN—16APR26



CQ1451268—UN—16APR26

15. For 3119FT and 3123FT, lock three fertilizer row units for each wing:
For 3127FT and 3131FT, lock five fertilizer row units for each wing:
- Lock the furrow opener in hole (V), and tighten screw (W).
 - Fold coultter to position (Z).
 - Install a screw on hole (Y) to lock coultter.
16. Fold machine. (See Unfold and Fold Planters in this section.)

Field Transport

NOTE: See SeedStar 5 Operator's Manual for more informations about transport settings.

1. Fold machine. (See Unfold and Fold Planters in this section.)
2. Transport safely.

IMPORTANT: Planter with two-point hitch coupling: when transporting, keep the tractor's hydraulic arms at a minimum level to prevent the tools from coming into contact with the ground, as this contributes to the planter's stability.

Road Transport with Tractor

NOTE: See SeedStar 5 Operator's Manual for more informations about transport settings.

NOTE: Verify current traffic legislation. On some countries, transport using tractor on a road may not be allowed.

1. Adjust machine frame and rows. (For more information, see Road Transport with Truck in this section.)
2. Fold machine. (See Unfold and Fold Planters in this section.)
3. Maintain amber warning lights open.
4. Transport safely.

FHSSYU9,1773752968433-19-20APR26

Storage

Cleaning the Machine After Planting

Wash planter immediately after use to reduce the corrosion provoked by climatic factors in the field. Perform washing from the top to the bottom. If detergent is used, it must be used in the correct concentration and rinsed off immediately and thoroughly from top to bottom. Only use detergent recommended by high-pressure washer manufacturer. John Deere detergents are highly recommended.

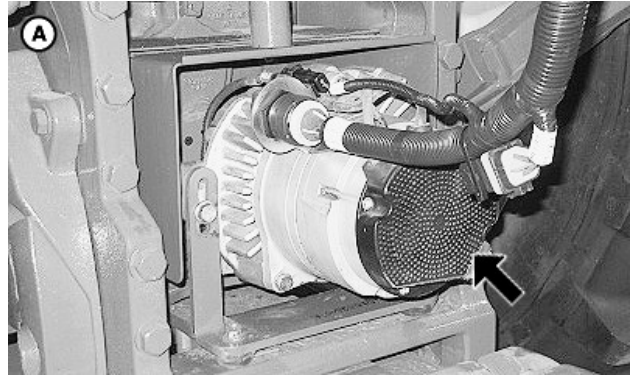
NOTE: For more information, contact a John Deere dealer or other service provider.

IMPORTANT:

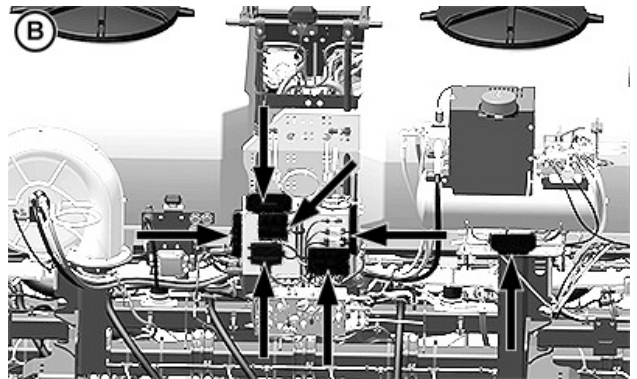
- **Prevent machine damage:** Always remove the BrushBelt cartridges from row units before washing the planter. Store the BrushBelt cartridges in a safe place, preventing contact with rain and other severe climatic conditions.
- High-pressure washers can damage electrical components, bearings, hoses, and hoppers if direct contact is applied. Be careful when using power washing machine.
- As a rule, always be careful while washing near electrical components. This includes, but is not limited to, controllers, sensors, and RowCommand clutches. Minimize pressure washer contact with these components.
- Perform the equipment cleaning in a sunny day. This helps to dry components properly and prevents failures caused by moisture exposure.
- Make sure that all chemical solution used with water to wash the planter was removed, it avoids components to rust.
- Compressed air can be used to dry faster between parts that has water accumulated. Take care using compressed air to clean or dry electrical components. The moisture can enter to the components instead of drying them out.
- Use neutral products to clean the machine, following the safety and handling guidelines provided by the manufacturer.
- Spray the entire machine, especially the zinc parts, with protective oil, following the application guidelines of the manufacturer.
- The protective oil also prevents the adhesion of dirt on the machine, facilitating subsequent washings.

Cleaning the Electric Drive Components

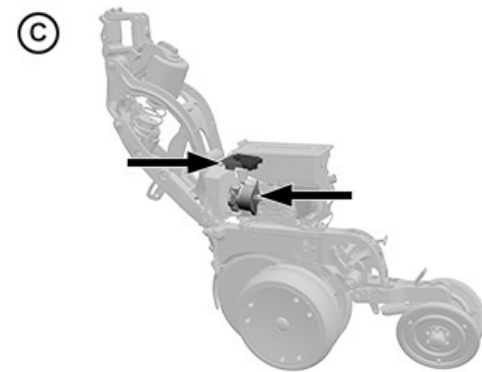
For MaxEmerge 5e or ExactEmerge planters, avoid directing the pressure washer at the following electrical components shown.



BML026017—UN—25MAY21
Electronic Power Take-Off (EPTO) Alternator

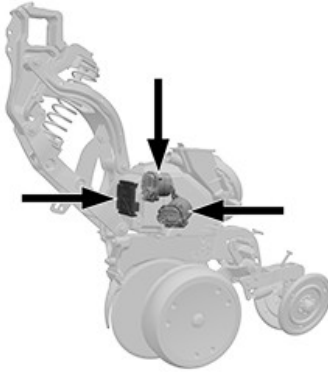


CQ1379192—UN—09OCT24
Electronic Control Units on Main Frame



CQ1360366—UN—15MAY24
Electronic Control Unit and Meter Motor—MaxEmerge 5e Planters

Ⓓ



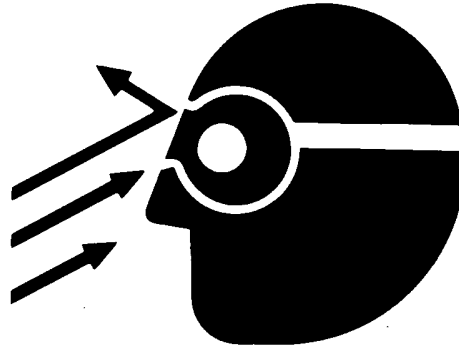
CQ1360367—UN—15MAY24
Electronic Control Unit, Meter Motor, and BrushBelt Motor—
ExactEmerge Planters

- A—Electronic Power Take-Off (EPTO) Alternator
- B—Electronic Control Units on Main Frame
- C—Row Unit Control Unit and Meter Motor (for MaxEmerge 5e planters)
- D—Row Unit Control Unit, Meter Motor, and BrushBelt Motor (for ExactEmerge planters)

a3rfggt,1706007955672-19-09OCT24

⚠ CAUTION: Avoid personal injury or death. Reduce the compressed air pressure to less than 200 kPa (2 bar) (30 psi) to clean the tanks. Make sure all bystanders are clear of the machine. Use protective equipment, including goggles.

IMPORTANT: Avoid damage to the machine. Cleaning with compressed air is recommended to prevent the formation of sticky deposits (caused by contact with water) in the air lines.



TS266—UN—23AUG88

Prepare for Storage

⚠ CAUTION: Avoid skin, eye, and respiratory injury. Follow chemical manufacturer's precautions when handling parts coated with chemicals or treatments. Use proper skin, eye, and respiratory protection.

IMPORTANT: Avoid damage to electrical components, bearings, hoses, or hoppers. Avoid direct spray at sensitive components. Use caution, if power washing the planter.

1. When planting is completed for one season, store the planter under a cover with all parts in operating condition.
2. Store the planter in a raised position with the service locks and rockshaft assembly planting unit lockout pins installed.
3. Paint all parts which are chipped or worn. If necessary, repaint the exposed metallic areas to prevent rust.
4. Clean the planter thoroughly to remove dirt and residue that hold moisture on the planter components.

IMPORTANT: Avoid damage to the machine. It is recommended to clean the contacts of all the electrical connectors to prevent oxidation.

5. Lubricate the planter as outlined in the Lubrication section. Apply protective oil to the exposed area of all the hydraulic cylinder rods.
6. Empty and clean the hoppers.

7. Using compressed air, dry the seed tank.
8. Check for loose or damaged components. Replace or tighten as required.
9. Store the planter in a clean, dry and covered location.
10. Relieve the pressure from the closing wheels.
11. Adjust the downforce pressure from the planting row unit and fertilizer row unit:

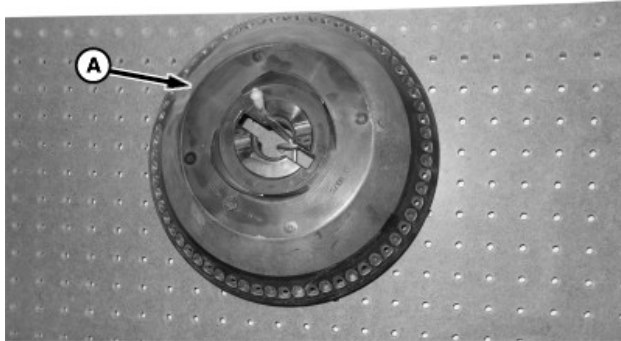
NOTE: On the air springs: maintain a pressure of 35 kPa (0.35 bar) (5 psi). (See Adjust Seed Row Downforce in Operating the Planter.)

NOTE: On the mechanical springs: release downforce pressure. (See Adjust Seed Row Downforce in Operating the Planter.)

12. Cover the offset disks and/or the furrow openers with a layer of oil, and then lower onto a plank for storage.
13. Thoroughly flush liquid systems with clean water and winterize in cold climates. Follow the chemical manufacturer's label.
14. Remove the seed disk from the meter. (See the section Inspect and Service the Seed Meter for your corresponding planter.)

NOTE: Identify the seed disk and meter housing in the field (with adhesive or a permanent inscription) and always use the same disk in the same meter housing. This improves the durability as well as the adjustment and performance of the system.

15. Clean the meter housing, meter chamber, and seed disk with mild detergent and a soft brush.
16. Spray the seed disk with a graphite lubricant.

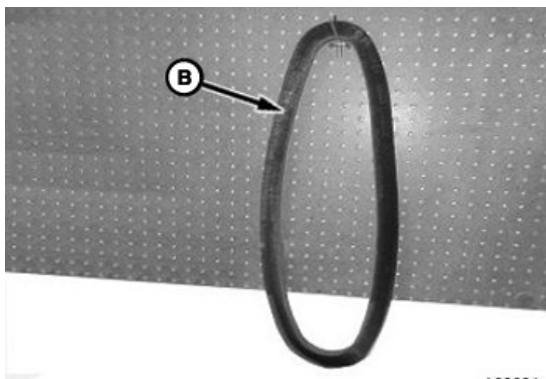


A83680—UN—12SEP14

17. Store the seed disk (A) in a box or hang the seed disks on the wall.

IMPORTANT: Store the seed disks away from extreme heat or direct sunlight. Do not leave the seed disks in the meters during the off season. Do not store under heavy parts.

18. Clean the vacuum system. (Clean the Vacuum System in Service—Vacuum System section.)
19. Relieve system pressure before disconnecting hydraulic hoses.
20. Check for hydraulic leaks.
21. Place covers on the ends of the hydraulic hoses, and place them in their supports on the planter.
22. Check and clean the seed meters.
23. Check and replace the necessary seed meter seals.



BM030077—UN—15FEB19

24. Ensure that the BrushBelt (B) is clean and purged of all remaining seed. (See the SeedStar Operator's Manual for additional information on the purge instructions.)
25. BrushBelt can be stored in the planter during the off-season. Remove the tension from the cartridge for extended storage periods.

NOTE: Store the BrushBelt in a suitable place, to avoid damaging or bristle buckling.

26. If BrushBelt is removed for storage, clean the belt (B) and hang as shown for best results.
27. Adjust the tires. (See Tire Inflation Pressure in Preparing the Planter.)

a3rfggt,1706007956336-19-24OCT24

Remove from Storage

CAUTION: Ensure that all protective shields are kept in place.

1. Check pressure of all tires.
2. Carefully clean the machine.
3. Check all tubes for obstructions.
4. Lubricate all necessary parts. (See Lubrication section.)
5. Check torque of all screws. Retighten where required.
6. Check interior of seed tanks and remove all obstructions.

IMPORTANT: Thoroughly clean vacuum lines to prevent entry of impurities that may damage machine parts.

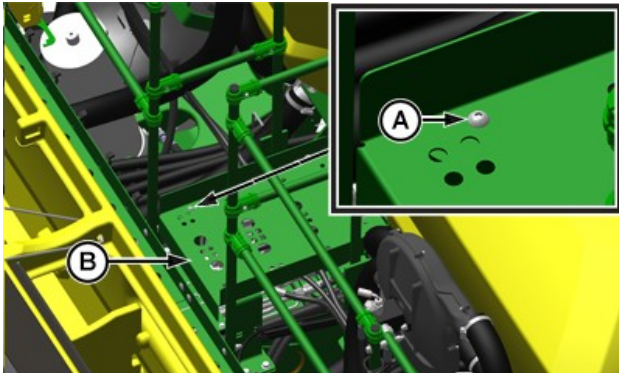
7. Make sure all joints move freely, otherwise the machine will perform poorly.

a3rfggt,1706007956470-19-28JUN24

Access to Service Points

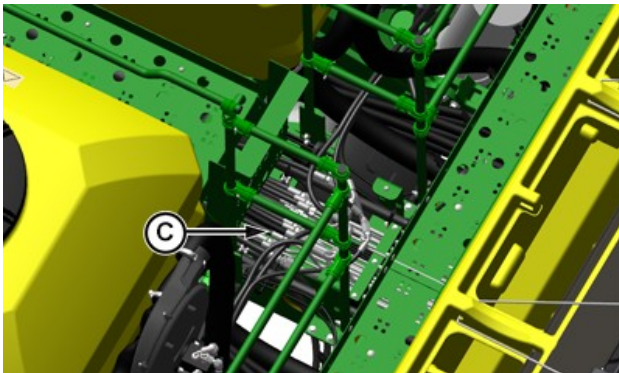
Center Frame Platform—Pipe and Hydraulic Hoses Connections

The center frame platform provides access to hydraulic connections, to access remove the platform:



CQ1380213—UN—18OCT24

1. Remove screws (A) on both sides.
2. Fold center frame platform (B).

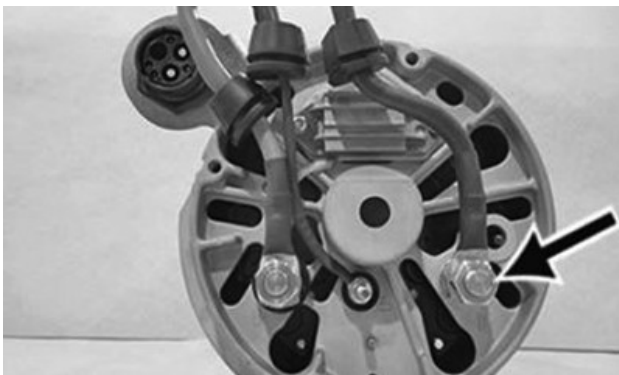


CQ1380210—UN—18OCT24

3. Service hydraulic connections (C) as necessary.

kp318th,1720181187914-19-18OCT24

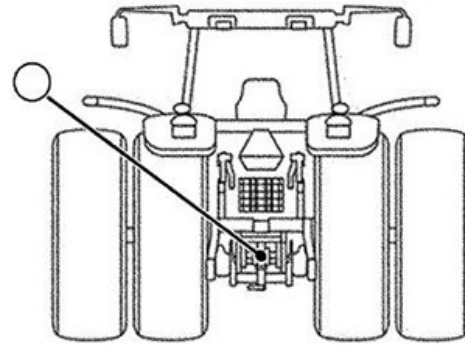
Tractor Alternator Negative Connector



BM030002—UN—04FEB19

Tractor Alternator Negative Connector

The alternator negative connector is a ground point for the power generator.



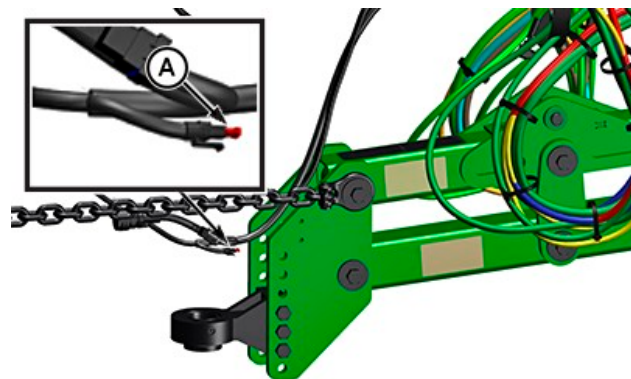
BM029992—UN—04FEB19

Tractor Alternator Negative Connector Location

This connector is located near the power generator on the tractor power take-off (PTO).

ER40675,0000B9B-19-07MAR20

Tractor Power Generation Fuse



CQ1371752—UN—22JUL24

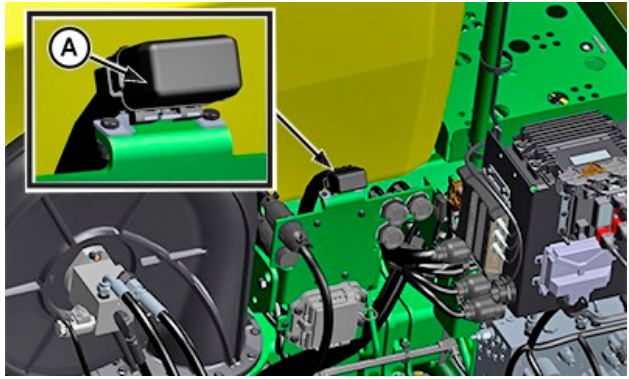
Tractor Power Generation Fuse—10 A

Power protection fuse of the 9-pin tractor connection.

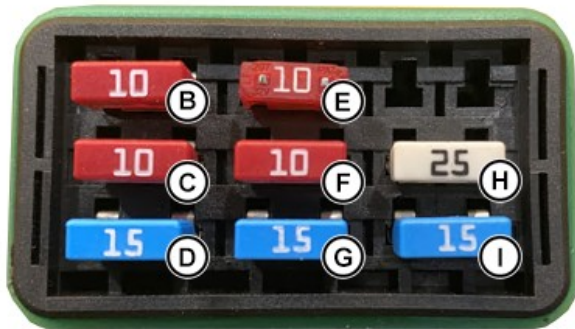
a3rfgg,1706008249162-19-05JUL24

12V Fuse Box

IMPORTANT: Avoid damage to the machine electrical system. Do not replace an original fuse with a higher rate fuse. This causes damage to the machine electrical system. If the original capacity fuse does not support the electrical load and continues to burn, contact a John Deere dealer or other service provider.



CQ1371754—UN—22JUL24



CQ1380166—UN—18OCT24

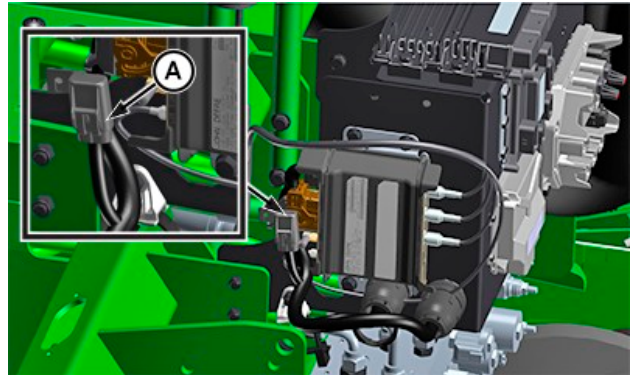
Fuse box (A) is located near the CCS fan.

A fuse box is essential for protecting the electrical circuits of the equipment from overloads and short circuits. The operator must ensure proper maintenance and troubleshooting by reading the list of fuses and their corresponding functions.

- B- Fuse EPG Controller
- C- Fuse SMU Power
- D- Fuse Left Rows
- E- Fuse ECU Power
- F- Fuse MCU Power
- G- Fuse Center Rows
- H- Fuse IAC Power
- I- Fuse Right Rows

PS9EIDU,1773333330060-19-17APR26

MTG/JD Link R-Modem



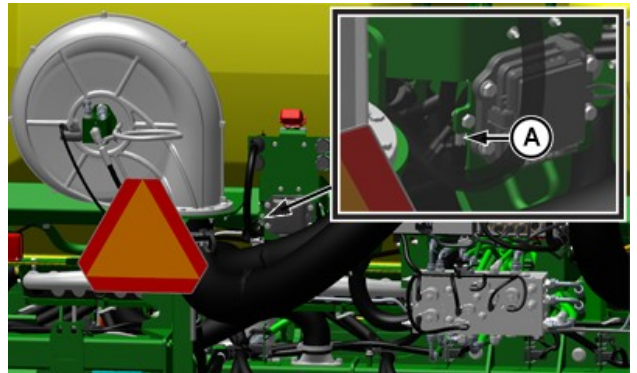
CQ1371812—UN—15JUL24

Fuse of the electronic control unit (ECU) power protection from the 9-pin tractor connection.

The MTG/JD Link R-Modem fuse (A) is located near the MTG/JD Link R-Modem.

a3rfggt,1706008250171-19-18OCT24

Ground Distribution Connector



CQ1380204—UN—18OCT24

Ground Distribution Connector

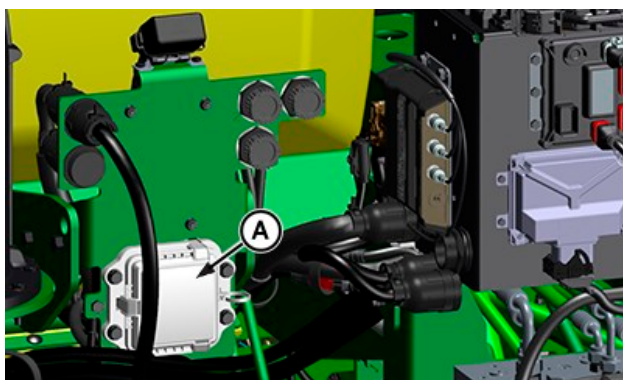
The function of ground distribution connector (A) is to be a ground point for the power generator.

This connector is located behind the fuse box.

a3rfggt,1706008250686-19-18OCT24

56V Fuse Box

IMPORTANT: Avoid damage to the machine electrical system. Do not replace an original fuse with a higher rate fuse. This causes damage to the machine electrical system. If the original capacity fuse does not support the electrical load and continues to burn, contact a John Deere dealer or other service provider.



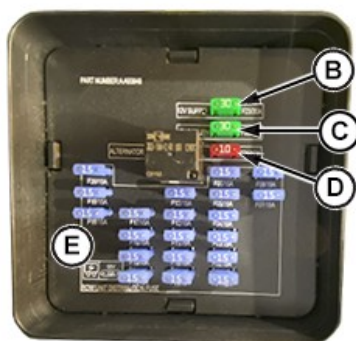
Fuse Box

CQ1371859—UN—15JUL24

- A—Fuse Box
- B—12 V Supply Fuse (30 A)
- C—12 V Return Fuse (30 A)
- D—Pre Relay Monitor Fuse (10 A)
- E—Fuses of the Row Units

Fuse box (A) is on the right-hand side of the machine, near controllers box.

To check which row unit motor is related to each fuse of row units (E), see the following charts:



CQ1380200—UN—18OCT24

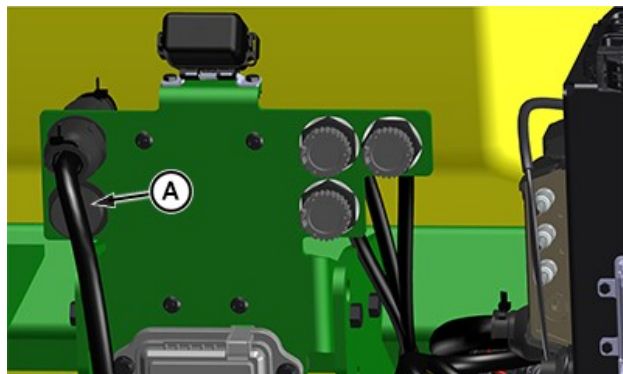
Fuses of the Row Units Motors—Fuse Box

Row Unit Fuses	Fuse Box		
	Circuit	3123	3131
F01	502	Fertilizer Motors 01 and 02	Fertilizer Motors 01 and 02
F02	512	Fertilizer Motor 04	Fertilizer Motors 03 and 04
F03	522	Fertilizer Motor 05	Fertilizer Motors 05 and 06
F04	532	Fertilizer Motors 07 and 08	Fertilizer Motors 07 and 08
F05	542	Planting Unit Motors 01 and 02	Planting Unit Motors 01 and 02
F06	552	Planting Unit Motors 03 and 04	Planting Unit Motors 03 and 04
F07	562	Planting Unit Motors 05 and 06	Planting Unit Motors 05 and 06
F08	572	Planting Unit Motor 07	Planting Unit Motors 07 and 08
F09	582	Spare Fuse	Planting Unit Motors 09 and 10
F10	592	Planting Unit Motor 08	Planting Unit Motors 11 and 12
F11	602	Planting Unit Motors 09 and 10	Planting Unit Motors 13 and 14
F12	612	Planting Unit Motors 11 and 12	Planting Unit Motors 15 and 16
F13	622	Planting Unit Motors 13 and 14	Planting Unit Motors 17 and 18
F14	632	Planting Unit Motors 15 and 16	Planting Unit Motors 19 and 20
F15	642	Planting Unit Motors 17 and 18	Planting Unit Motors 21 and 22
F16	652	Planting Unit Motors 19 and 20	Planting Unit Motors 23 and 24
F17	662	Planting Unit Motors 21 and 22	Planting Unit Motors 25 and 26
F18	672	Planting Unit Motor 23	Planting Unit Motors 27 and 28
F19	682	Spare Fuse	Planting Unit Motors 28 and 29
F20	692	Spare Fuse	Planting Unit Motor 31

NOTE: Depending on the machine configuration, not all the fuses of the row units shown at the chart are used.

E443CH7,1750700317952-19-17APR26

CAN Terminator



CQ1372174—UN—18OCT24

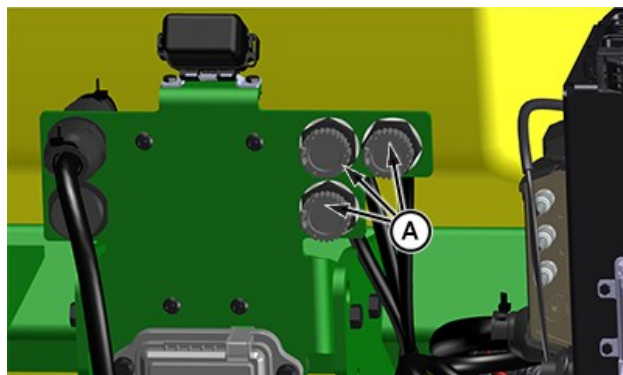
CAN terminator prevent signal reflections and ensure proper signal propagation.

CAN terminator (A) is located near the 12V fuse box.

The other terminators of the different networks and sub-networks are distributed throughout the machine.

PS9EIDU,1773334144139-19-12MAR26

CAN Diagnostic Port



CQ1372288—UN—15JUL24

CAN diagnostic ports allow technicians to retrieve diagnostic trouble codes, monitor live data, perform tests, and make adjustments to systems within the planter for troubleshooting and maintenance purposes.

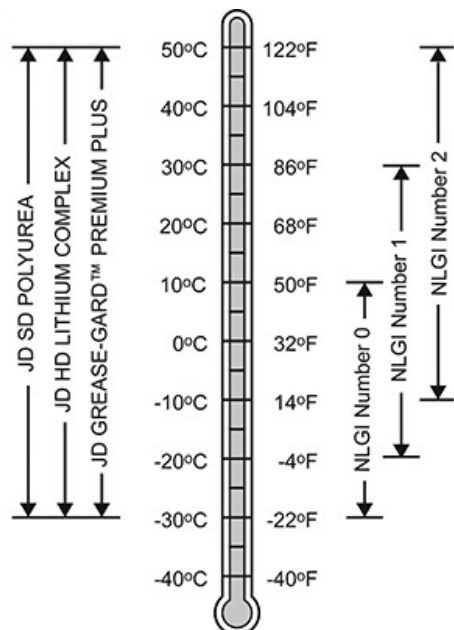
The 3 CAN diagnostic ports (A) are located near the fuse box.

a3rfgg,1706008309194-19-11JUL24

Lubrication

Multipurpose Extreme Pressure (EP) Grease

IMPORTANT: For automated lubrication systems, different ambient air temperatures must be considered.



RG30199—UN—08MAR18

Greases for Air Temperature Ranges

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere Grease-Gard Premium Plus

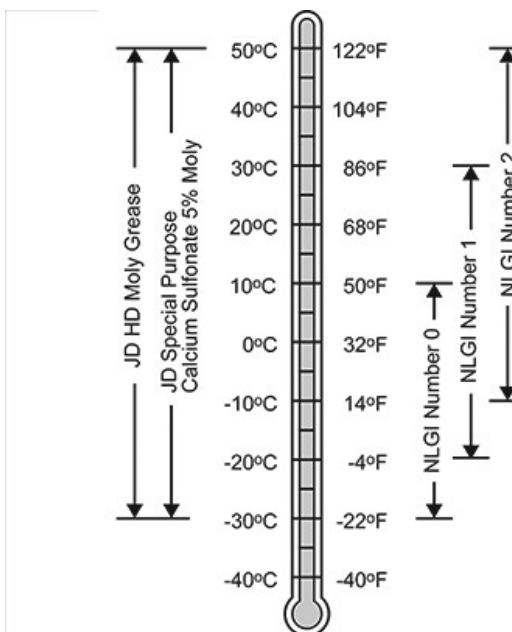
Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB
- ISO-L-X-BDHB 2 or DIN KP 2 N-10 Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm²/s @ 40°C)

IMPORTANT: Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

DX,GREA1(T)-19-06APR22

Grease with Molybdenum Disulfide



RG30201—UN—08MAR18

Greases for Air Temperature Ranges

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere HD Moly Grease is preferred.

Also recommended for wet or extreme conditions:

JD Special Purpose Calcium Sulfonate 5% Moly Grease

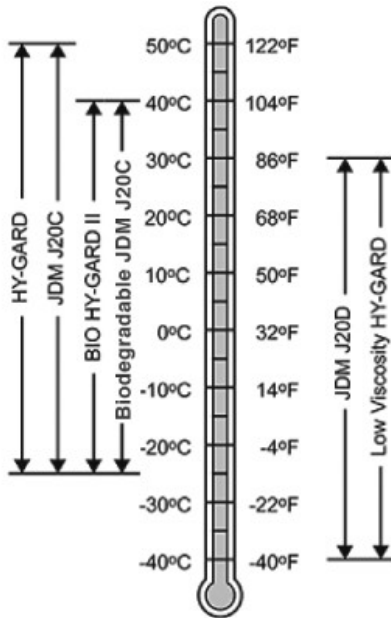
Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB with 3% to 5% molybdenum disulfide
- ISO-L-X-BDHB 2 (per ISO 6743-9) or DIN KPF 2 N-10 (per DIN 51825) Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm²/s @ 40°C) with 3% to 5% molybdenum disulfide

IMPORTANT: Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

DX,GREA4-19-13JAN18

Transmission, Steering, Brake, Hydraulic, and Gear Case Oil



DX1434115—UN—26NOV25

Oils for Air Temperature Ranges

Use an oil viscosity based on the expected air temperature range during the period between oil changes.

The following oils are preferred:

- John Deere Hy-Gard
- John Deere Low Viscosity Hy-Gard

Other oils may be used if they meet one of the following:

- John Deere Standard JDM J20C
- John Deere Standard JDM J20D

If biodegradable fluid is required, the following oil is preferred:

- John Deere Bio Hy-Gard II¹

Other biodegradable oils can be used if they meet the following:

- John Deere Standard JDM J20C

DX,OIL1(T)-19-25NOV25

Oil of the Pneumatic Downforce (PDF) Compressor

IMPORTANT: For more information, contact a John Deere dealer or other service provider.

The recommended oil for the pneumatic downforce (PDF) compressor is the John Deere synthetic air compressor oil ISO 100.

The factory also authorizes the use of the oil from other suppliers. The oil must meet the following requirements:

- The oil must be indicated for use in compressors.
- Approved by ISO100 or SAE 30.
- It should not contain detergent in its composition.

NN32476.00003B8-19-17JUL25

Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

DX,LUBMIX-19-18MAR96

Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

DX,LUBST-19-11APR11

¹ Bio Hy-Gard II meets or exceeds the minimum biodegradability of 80% within 21 days according to CEC L-33-T-82 test method. Bio Hy-Gard II should not be mixed with mineral oils because this reduces the biodegradability and makes proper oil recycling impossible.

Maintenance and Service Intervals

Practice Safe Maintenance



TS218—UN—23AUG88

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving. Keep hands, feet, and clothing away from power-driven parts. Disengage all power and operate controls to relieve pressure. Lower equipment to the ground. Stop the engine and secure the machine. If equipped, remove the key, disconnect the battery, and allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.

Falling while cleaning or working at height can cause serious injury. Use a ladder or platform to easily reach each location. Use sturdy and secure footholds and handholds.

DX,SERV-19-20JAN26

Welding Near Electronic Control Units



TS953—UN—15MAY90

IMPORTANT: Do not jump-start engines with arc welding equipment. Currents and voltages are too high and may cause permanent damage.

1. Disconnect the negative (-) battery cable(s).
2. Disconnect the positive (+) battery cable(s).
3. Connect the positive and negative cables together. Do not attach to vehicle frame.
4. Clear or move any wiring harness sections away from welding area.
5. Connect welder ground close to welding point and away from control units.
6. After welding, reverse Steps 1—5.

DX,WW,ECU02-19-14AUG09

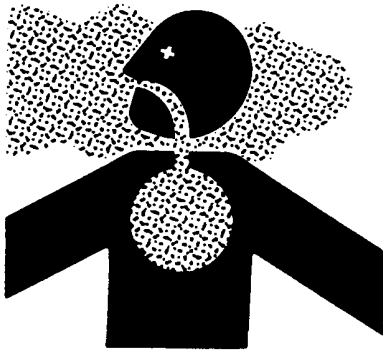
Keep Electronic Control Unit Connectors Clean

IMPORTANT: Do not open control unit and do not clean with a high-pressure spray. Moisture, dirt, and other contaminants may cause permanent damage.

1. Keep terminals clean and free of foreign debris. Moisture, dirt, and other contaminants may cause the terminals to erode over time and not make a good electrical connection.
2. If a connector is not in use, put on the proper dust cap or an appropriate seal to protect it from foreign debris and moisture.
3. Control units are not repairable.
4. Since control units are the components LEAST likely to fail, isolate failure before replacing by completing a diagnostic procedure.
5. The wiring harness terminals and connectors for electronic control units are repairable.

DX,WW,ECU04-19-11JUN09

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471

A34471—UN—11OCT88

Chemicals used in agricultural applications such as fungicides, herbicides, insecticides, pesticides, rodenticides, and fertilizers can be harmful to your health or the environment if not used carefully.

Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.

- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

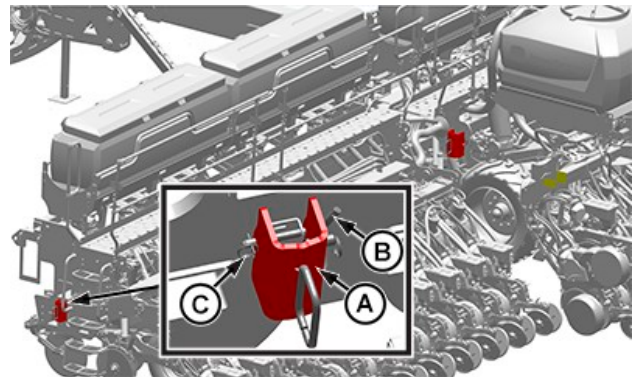
uqtm1iv,1729798439519-19-24OCT24

Install the Service Locks

⚠ CAUTION: Avoid personal injury or death.
Always install the service locks when working on or near the machine.

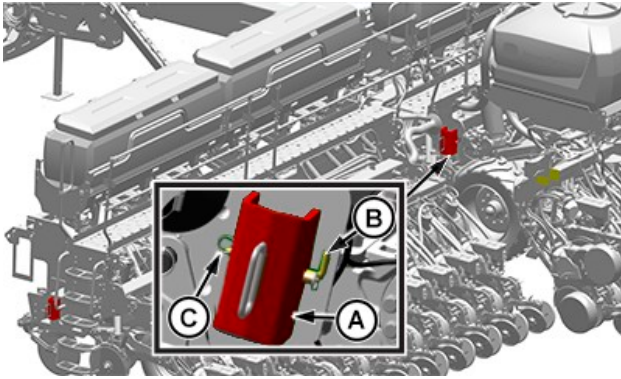
IMPORTANT: Prevent accidents by placing the four available service locks on the center cylinders and wing cylinders.

NOTE: Service locks (A) provide safety when performing normal maintenance and adjustments with the machine raised.

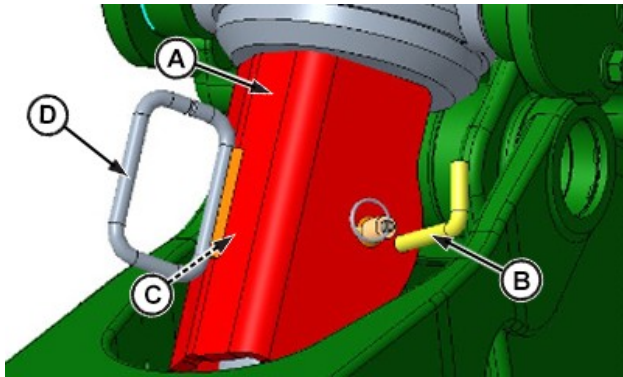


CQ1383407—UN—19NOV24

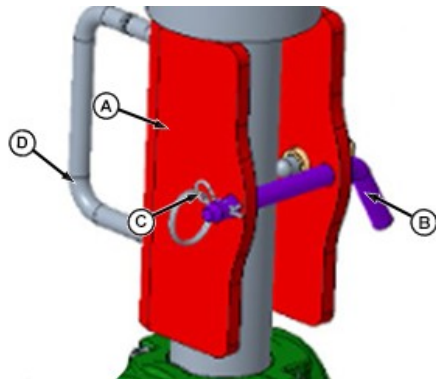
Wing Wheel Lift Cylinder Service Locks



CQ1383408—UN—19NOV24
Center Wheel Lift Cylinder Service Locks



CQ1383410—UN—19NOV24
Center Wheel Lift Cylinder Service Locks



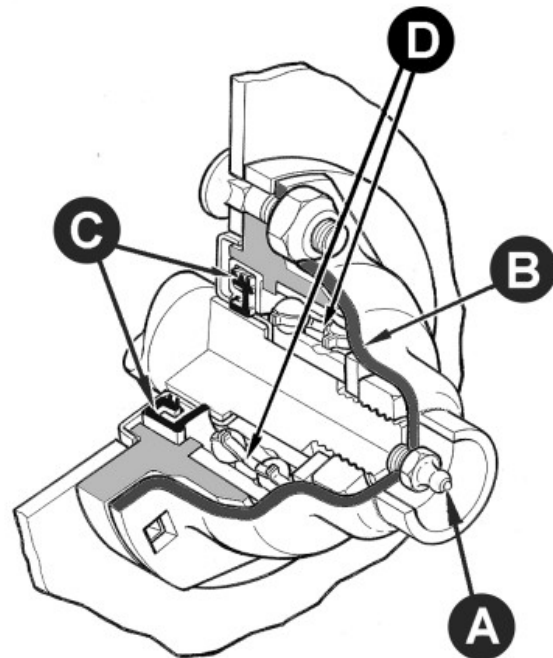
CQ1383441—UN—19NOV24
Wing Wheel Lift Cylinder Service Locks

1. Raise the planter.
2. Unlock the hitch.
3. To access the center wheel, partially close the wings, by at least 10°.
4. Set tractor's park brake, and turn off engine.
5. Remove service lock (A) from the machine support by removing cotter pin (C) and pin (B).
6. Install service lock (A) using handle (D).
7. Add pin (B) and cotter pin (C) to lock the service lock onto the cylinder rod.

IMPORTANT: The service lock (A) for the wing wheel cylinder shall be installed on the outer wheel cylinder. This way, it is not too necessary to access the bottom of the planter. If you need to install the other service locks (A), first make sure that the outer cylinder has the lock (A) installed.

UZ9X5WJ,1755802683155-19-21AUG25

Lubrication of Veda System (MaxEmerge 5e Offset only)



CQ189040
CQ189040—UN—19AUG99

A—Fitting
B—Cover
C—Shaft Seal
D—Bearing

Veda System is a special sealing system for the bearings on John Deere planters, which is designed to extend the service life of parts containing bearings.

The Veda System bearings are protected by 3 and 5 lip shaft seals and a labyrinth system that guarantees the most perfect seal.

The lubrication period is 50 hours.

IMPORTANT: The maximum pressure of the VedaSystem grease pump is 2 bar.

If you apply excessive amount of grease to system, bearings will seize.

E443CH7,1750700540032-19-30JUN25

Maintenance Intervals Chart

Periodicity	System	Service
First 10 Hours	Wheels and Hardware	Check the Wing Wheel Screws Torque
		Check the Wing Wheel Bracket Torque
		Check the Wing Wheel Clamp Torque
		Check the Center Frame Wheel Screws Torque
	Fertilizer Unit—Coulter	Check the Coulter Support Screws Torque
		Check the Coulter Cast Bracket Torque
	Planting Unit—Frame	Check the Bracket Clamp Torque
First 20 Hours	Planting Unit—Depth Gauge Wheels	Check the Depth Gauge Wheel Pivot Arm Torque
First 20 Hours	Pneumatic Downforce (PDF) System	Change the Pneumatic Downforce (PDF) Compressor Oil
First 50 Hours	Fertilizer Unit—Coulter	Check the Coulter Hub Screw Torque
First 100 Hours	Fertilizer Unit—Coulter	Check the Coulter Cast Bracket Torque
Start of the Season	Electrical	Check Electrical Routing and Connectors
		Check Ethernet Switch Dust Cap
		Clean the Electronic Power Take-Off (EPTO) Alternator
		Check and Clean Planter Wheel Motion Sensor
	Drives	Clean the Electronic Power Take-Off (EPTO) Alternator Gear Case
		Lubricate the Electronic Power Take-Off (EPTO) Alternator Gear Case Coupling
		Check the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil Level
		Change the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil
	Hydraulics	Lubricate the Central Frame Lift Cylinders
		Lubricate the Fold Cylinders
		Lubricate the Wing Frame Lift Cylinders
		Lubricate the Rockshaft Cylinders
		Lubricate the Hitch Tube Cylinder—If Equipped
	Wheels and Hardware	Check the Center Frame Wheel Screws Torque
		Check the Wing Wheel Screws Torque
		Check the Wing Wheel Bracket Torque
		Check the Wing Wheel Clamp Torque
		Lubricate the Center Wheel Hub
		Lubricate the Center Wheel Pivots
		Lubricate the Wing Wheel Pivots
		Lubricate the Wing Fold Pivots
		Lubricate the Swing Arm Flex Pivots
		Lubricate the Hitch Link—If Equipped
		Lubricate the Two-Point Hitch Pivot—If Equipped
		Lubricate the Two-Point Hitch Head Pivot—If Equipped
		Lubricate the Front Hitch Pivots—If Equipped
		Lubricate the Rear Hitch Pivots—If Equipped
		Lubricate the Wishbone Pivot
		Lubricate the Central Commodity System (CCS) Extension Pivots
		Lubricate the Rockshaft Pivots
	Fertilizer Unit—Coulter	Fertilizer Arm Set Screw
		Check the Coulter Cast Bracket Torque
		Check the Coulter Hub Screw Torque
		Check the Coulter Bearings
		Check the Coulter Bushing and Pin
	Fertilizer Unit—Double Disks	Check Double Disks Blade Bearings
		Check and Adjust the Double Disk Blade
		Check the Double Disk Blade Scrapers

Maintenance and Service Intervals

Periodicity	System	Service
	Fertilizer Unit—Chisel	Check Chisel Tip Wear
	Fertilizer Unit—Boxes	Clean the Fertilizer Boxes
	Fertilizer Unit—Meter	Clean the Fertilizer Meters
		Check the Fertilizer Meters Electric Drive Operation
		Lubricate the Fertilizer Meter Bearings
		Check the Meter Protective Cap
	Planting Unit—Double Disk Blade	Check Double Disk Blade Bearings
		Check and Adjust the Double Disk Blade
		Check the Double Disk Blade Scrapers
		Check and Adjust the Double Disk Blade—MaxEmerge 5e Offset Only
		Check the Double Disk Blade Scrapers—MaxEmerge 5e Offset Only
	Planting Unit—Frame	Check the Bracket Clamp Torque
	Planting Unit—Depth Gauge Wheels	Check the Depth Gauge Wheel Pivot Arm Torque
		Check Depth Gauge Wheel Bearings
		Check Scraper Rings—If Equipped
	Planting Unit—Closing Wheels	Check Closing Wheel Bearings
	Planting Unit—Seed Meter and Hopper	Clean Seed Delivery System
		Clean Seed Tube—Only for MaxEmerge 5e
		Clean BrushBelt Cartridge—Only for ExactEmerge
		Clean Seed Meter
		Clean Row Unit Hopper Screen—Only for MaxEmerge 5e
		Inspect and Service the Seed Meter—Only for MaxEmerge 5e
		Inspect and Service the Seed Meter—Only for ExactEmerge
		Adjust the Meter Latch—Only for ExactEmerge
		Check Cartridge Guard—Only for ExactEmerge
		Lubricate Vacuum Seal and Seed Disk
	Pneumatic Downforce (PDF) System	Drain the Pneumatic Downforce (PDF) System Tank
		Check the Pneumatic Downforce (PDF) System Pressure Sensors
		Change the Pneumatic Downforce (PDF) Compressor Oil
		Check for Pneumatic Downforce (PDF) System Connectors Leaks
		Check for Leaks on Pneumatic Downforce (PDF) System Air Springs
		Check the Downforce System Spring Guide Wear
	Vacuum System	Check Vacuum Motor
		Check and Clean Vacuum Housing and Impeller
		Clean the Vacuum Pressure Sensor Hose
		Check the Vacuum System Couplings
	Central Commodity System (CCS)	Check Central Commodity System (CCS) Hoses Routing
		Clean Central Commodity System (CCS) Manifold
		Check and Clean the Central Commodity (CCS) System Tank Level Sensors
		Check Central Commodity System (CCS) Blower Pressure Gauge Filter
Every 50 Hours	Fertilizer Unit—Double Disks	Lubricate the Fertilizer Double Disk Bearings
	Planting Unit—Double Disk Blade	Lubricate Double Disk Blade Hub—MaxEmerge 5e Offset Only
	Planting Unit—Depth Gauge Wheels	Lubricate the Depth Gauge Wheel Hub—MaxEmerge 5e Offset Only
	Planting Unit—Closing Wheels	Lubricate the Closing Wheels Hub—MaxEmerge 5e Offset Only
	Planting Unit—Seed Meter and Hopper	Clean BrushBelt Cartridge—Only for ExactEmerge
		Lubricate Vacuum Seal and Seed Disk
	Pneumatic Downforce (PDF) System	Clean the Pneumatic Downforce (PDF) Compressor Air Filter
Every 100 Hours	Drives	Clean the Electronic Power Take-Off (EPTO) Alternator Gear Case
		Lubricate the Electronic Power Take-Off (EPTO) Alternator Gear Case Coupling

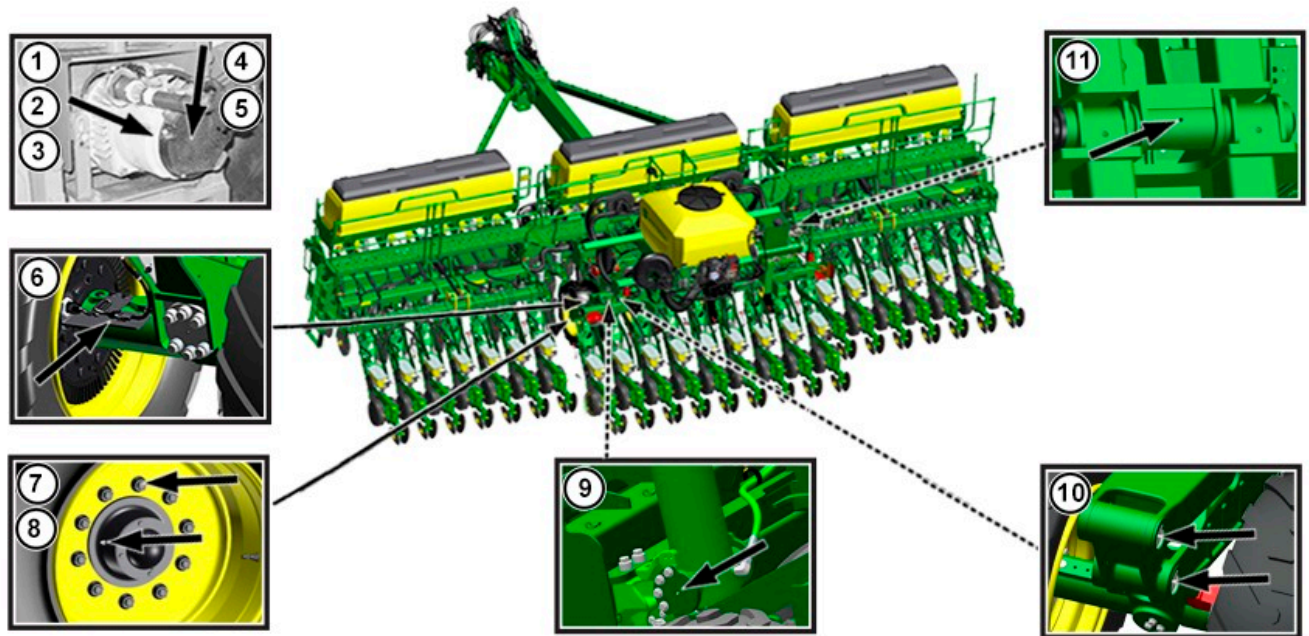
Maintenance and Service Intervals

Periodicity	System	Service
		Check the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil Level
	Wheels and Hardware	Lubricate the Center Wheel Hub
		Lubricate the Center Wheel Pivots
		Lubricate the Wing Wheel Pivots
		Lubricate the Swing Arm Flex Pivots
		Lubricate the Two-Point Hitch Pivot—If Equipped
		Lubricate the Two-Point Hitch Head Pivot—If Equipped
	Planting Unit—Depth Gauge Wheels	Lubricate the Depth Gauge Wheel Arms—MaxEmerge 5e without offset and Exact Emerge
	Pneumatic Downforce (PDF) System	Replace the Pneumatic Downforce (PDF) Compressor Air Filter
Every 200 hours	Drives	Change the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil
Every 1000 Hours	Downforce System	Replace the Downforce System Spring Guide
As Required	Electrical	Clean the Electronic Power Take-Off (EPTO) Alternator
		Check and Clean Planter Wheel Motion Sensor
	Drives	Clean the Electronic Power Take-Off (EPTO) Alternator Gear Case
	Wheels and Hardware	Check the Center Wheel Bracket Torque
		Check the Wing Wheel Bracket Torque
		Lubricate the Central Commodity System (CCS) Extension Pivots
	Fertilizer Unit—Coulter	Check the Coulter Cast Bracket Torque
		Replace the Coulter Bearings
	Fertilizer Unit—Double Disks	Check and Adjust the Double Disk Blade
	Fertilizer Unit—Chisel	Replace Chisel Tip
	Fertilizer Unit—Boxes	Clean the Fertilizer Boxes
	Fertilizer Unit—Meter	Clean the Fertilizer Meters
		Check the Fertilizer Meters Electric Drive Operation
	Planting Unit—Double Disk Blade	Install Double Disk Blade Bearings—If Equipped with Shielded Bearings
		Replace Double Disk Blade Bearings—MaxEmerge 5e Offset Only
	Planting Unit—Depth Gauge Wheels	Adjust the Depth Gauge Wheels
		Install Depth Gauge Wheel Bearings—If Equipped with Shielded Bearings
		Replace Depth Gauge Wheel Bearings—MaxEmerge 5e Offset Only
		Remove and Install Scraper Ring—If Equipped
	Planting Unit—Closing Wheels	Install Closing Wheel Bearings—If Equipped with Shielded Bearings
		Replace Closing Wheel Bearings—MaxEmerge 5e Offset Only
	Planting Unit—Seed Meter and Hopper	Clean Seed Delivery System
		Clean Seed Tube—Only for MaxEmerge 5e
		Clean BrushBelt Cartridge—Only for ExactEmerge
		Clean Seed Meter Drive
		Replace BrushBelt—Only for ExactEmerge
		Replace or Clean the Seed Guide—Only for ExactEmerge
		Replace Meter Motor and BrushBelt Motor—Only for ExactEmerge
		Replace Meter Wear Pads—Only for ExactEmerge
		Install New Vacuum Seal
		Remove and Install Standard Flush Face Seed Tubes—Only for MaxEmerge 5e
		Disengage the Electric Drive—Only for MaxEmerge 5e
		Engage the MaxEmerge 5e Drive—Only for MaxEmerge 5e
		Replace the Meter Shear Hub—Only for MaxEmerge 5e
	Pneumatic Downforce (PDF) System	Clean the Pneumatic Downforce (PDF) Compressor Air Filter
		Replace the Pneumatic Downforce (PDF) System Connectors
		Replace the Pneumatic Downforce (PDF) System Air Springs
		Check the Pneumatic Downforce System Spring Link
		Replace the Pneumatic Downforce System Spring Link

Periodicity	System	Service
	Mechanical Downforce System	Replace the Mechanical Spring
		Check the Mechanical Downforce System Spring Link
		Replace the Mechanical Downforce System Spring Link
	Vacuum System	Clean the Vacuum Pressure Sensor Hose
		Clean the Vacuum System
	Central Commodity System	Check and Clean the Central Commodity (CCS) System Tank Level Sensors
		Zeroing Central Commodity System (CCS) Blower Pressure Gauge
		Check Central Commodity System (CCS) Blower Pressure Gauge Filter

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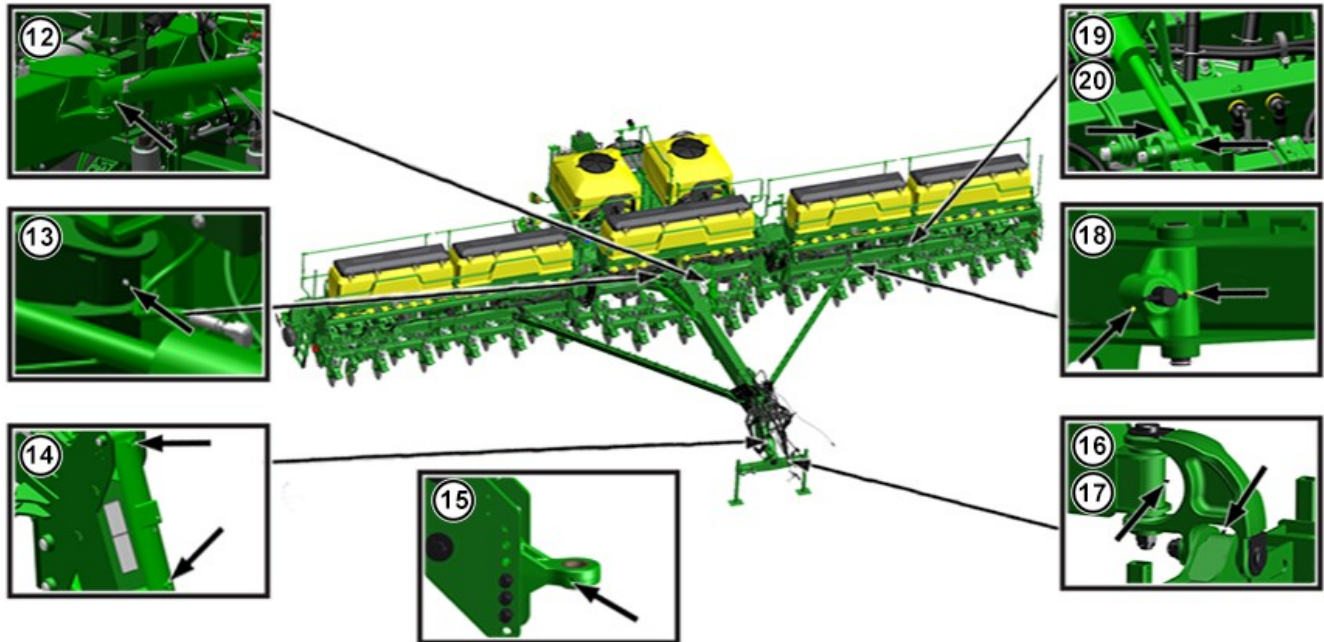
Service—Start of the Season



CQ1381488—UN—31OCT24

- 1—Clean the electronic power take-off (EPTO) alternator.
- 2—Clean the electronic power take-off (EPTO) alternator gear case.
- 3—Lubricate the electronic power take-off (EPTO) alternator gear case coupling.
- 4—Check the electronic power take-off (EPTO) alternator gear case oil level.

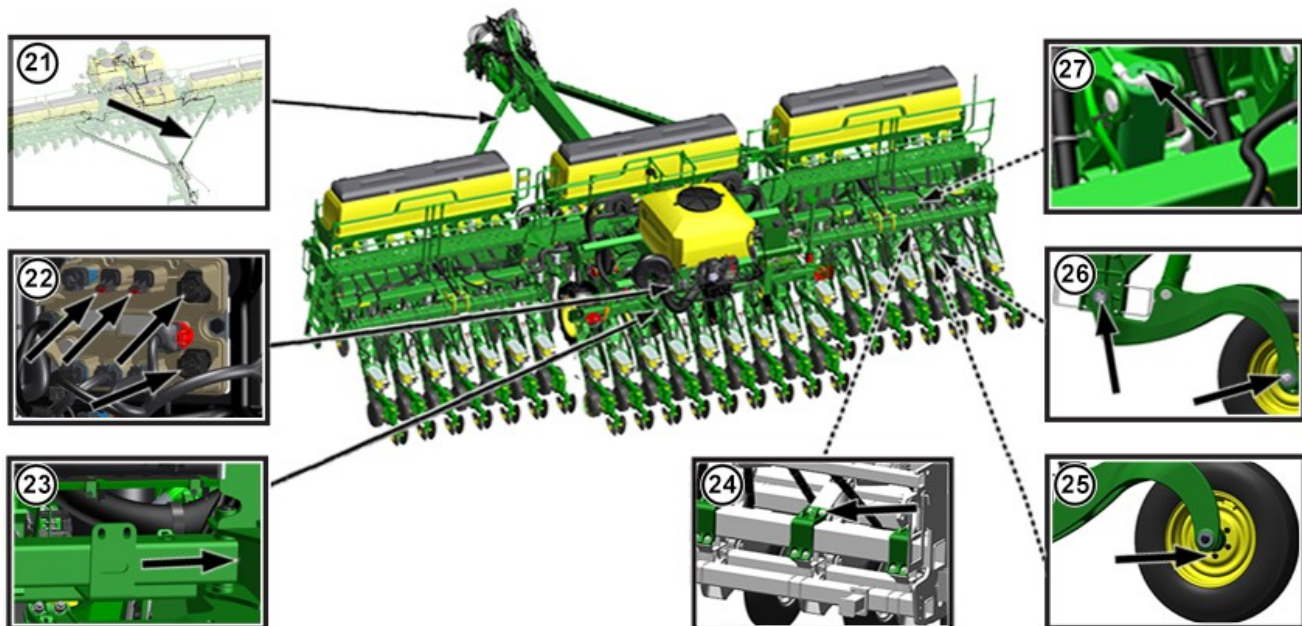
- 5—Change the electronic power take-off (EPTO) alternator gear case oil.
- 6—Check and clean planter wheel motion sensor.
- 7—Check the center frame wheel screws torque.
- 8—Lubricate the center wheel hub.
- 9—Lubricate the central frame lift cylinders.
- 10—Lubricate the center wheel pivots.
- 11—Lubricate the swing arm flex pivots.



CQ1381490—UN—31OCT24

- 12—Lubricate the fold cylinders.
- 13—Lubricate the wing fold pivots.
- 14—Lubricate the hitch tube cylinder.
- 15—Lubricate the hitch link.
- 16—Lubricate the two-point hitch head pivot (if equipped).

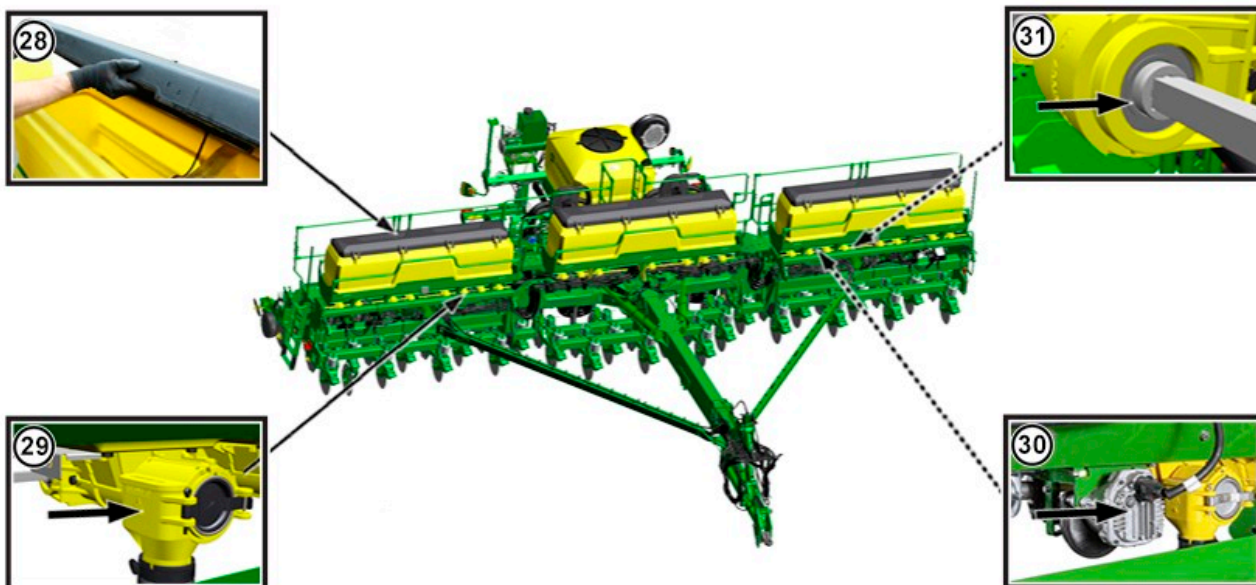
- 17—Lubricate the two-point hitch pivot (if equipped).
- 18—Lubricate the wishbone pivot.
- 19—Lubricate the rockshaft cylinders.
- 20—Lubricate the rockshaft pivots.



CQ1386724—UN—19DEC24

- 21—Check electrical routing and connectors.
- 22—Check ethernet switch dust cap.
- 23—Lubricate the central commodity system (CCS) extension pivots.

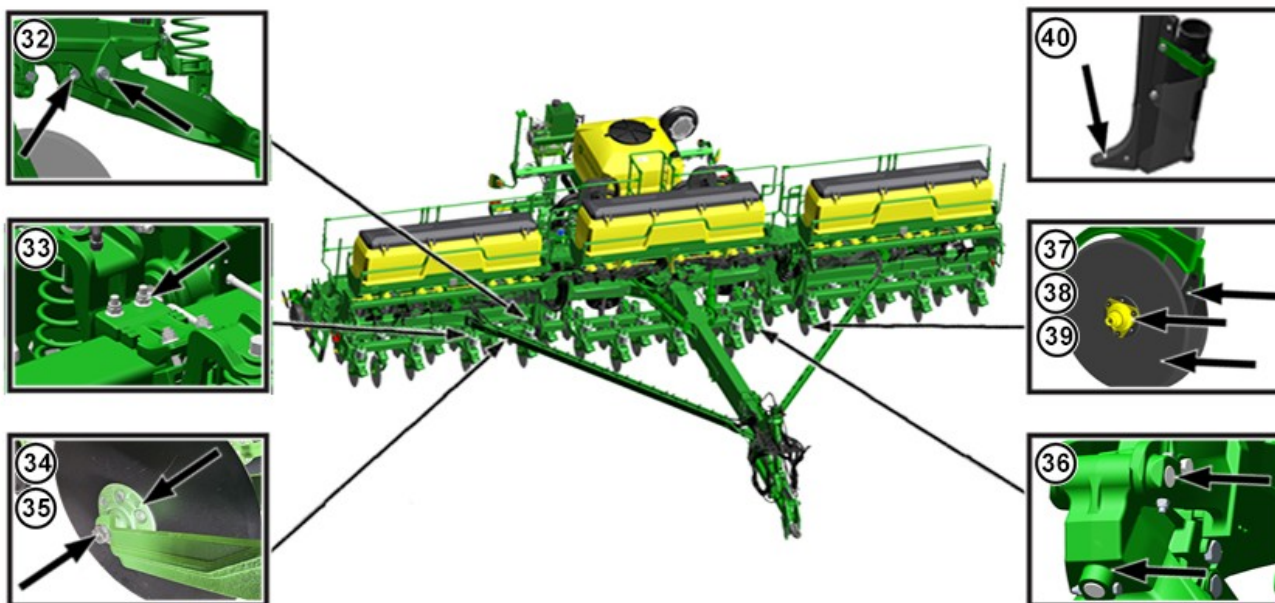
- 24—Check the wing wheel clamp torque.
- 25—Check the wing wheel screws torque.
- 26—Check the wing wheel bracket torque.
- 27—Lubricate the wing frame lift cylinders.



CQ1386743—UN—19DEC24

28—Clean the fertilizer boxes.
29—Clean the fertilizer meters.

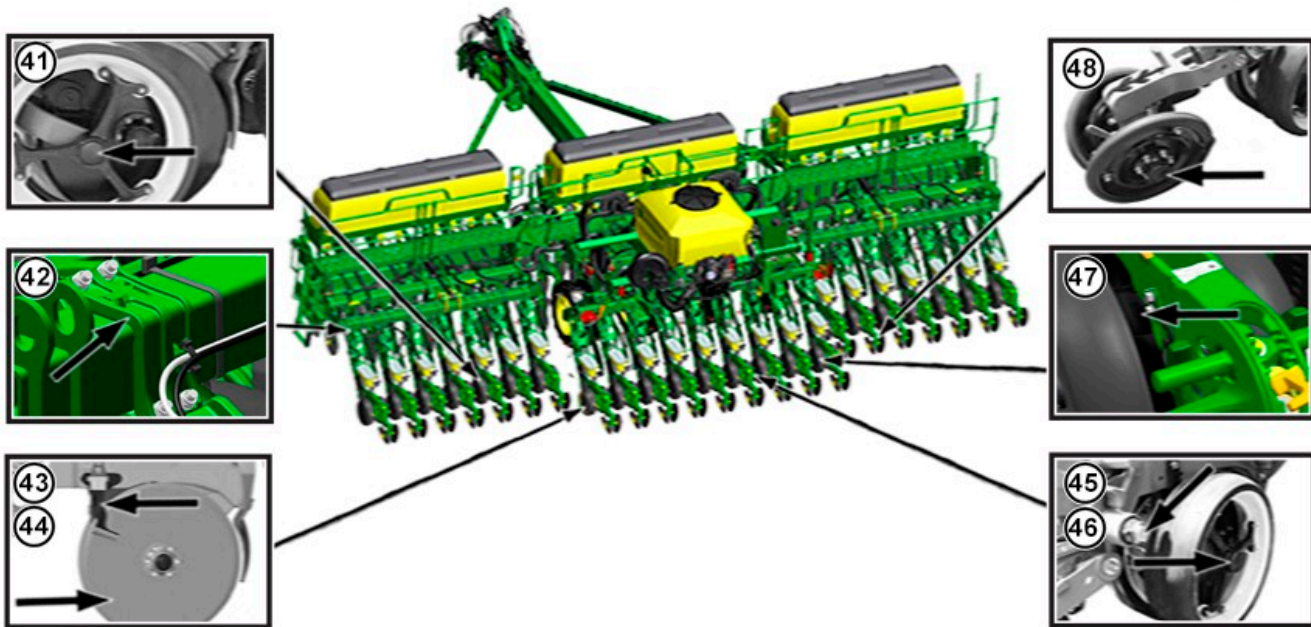
30—Check the fertilizer meters electric drive operation.
31—Lubricate the fertilizer meter bearings.



CQ1386744—UN—19DEC24

32—Check the fertilizer arm set screws torque.
33—Check the coultter cast bracket torque.
34—Check the coultter hub screw torque.
35—Check the coultter bearings.
36—Check the coultter bushing and pin.

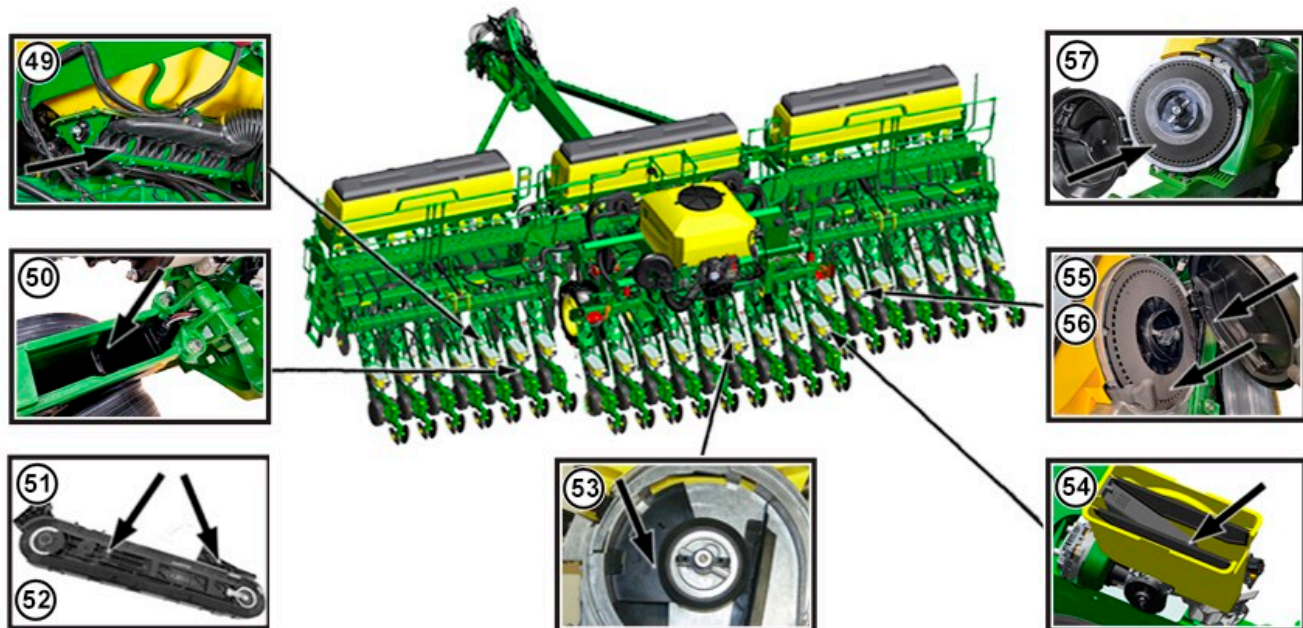
37—Check the double disk blade scrapers.
38—Check double disk blade bearings.
39—Check and adjust the double disk blade.
40—Check chisel tip wear.



CQ1386745—UN—19DEC24

- 41—Check double disk blade bearings.
- 42—Check the bracket clamp torque.
- 43—Check the double disk blade scrapers.
- 44—Check and adjust the double disk blade.

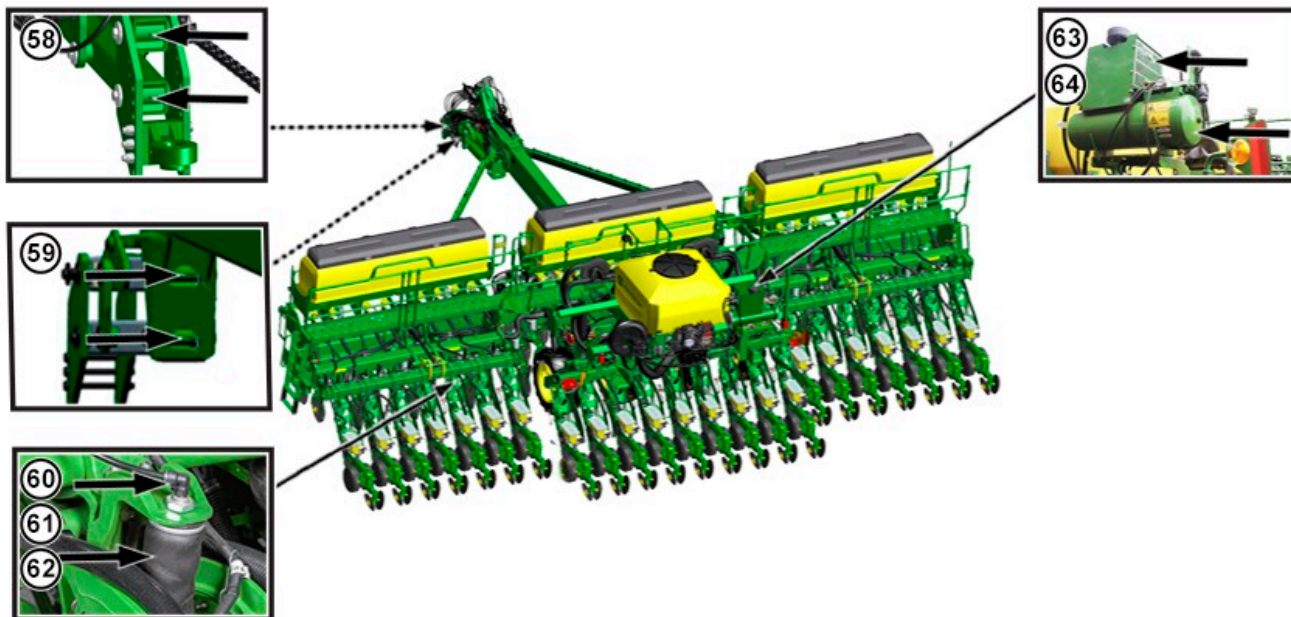
- 45—Check the depth gauge wheel pivot arm torque.
- 46—Check depth gauge wheel bearings.
- 47—Check scraper rings (if equipped).
- 48—Check closing wheel bearings.



CQ1386746—UN—19DEC24

- 49—Clean seed delivery system.
- 50—Clean seed tube (only for MaxEmerge 5e).
- 51—Clean BrushBelt cartridge (only for ExactEmerge).
- 52—Check cartridge guard (only for ExactEmerge).
- 53—Clean seed meter.

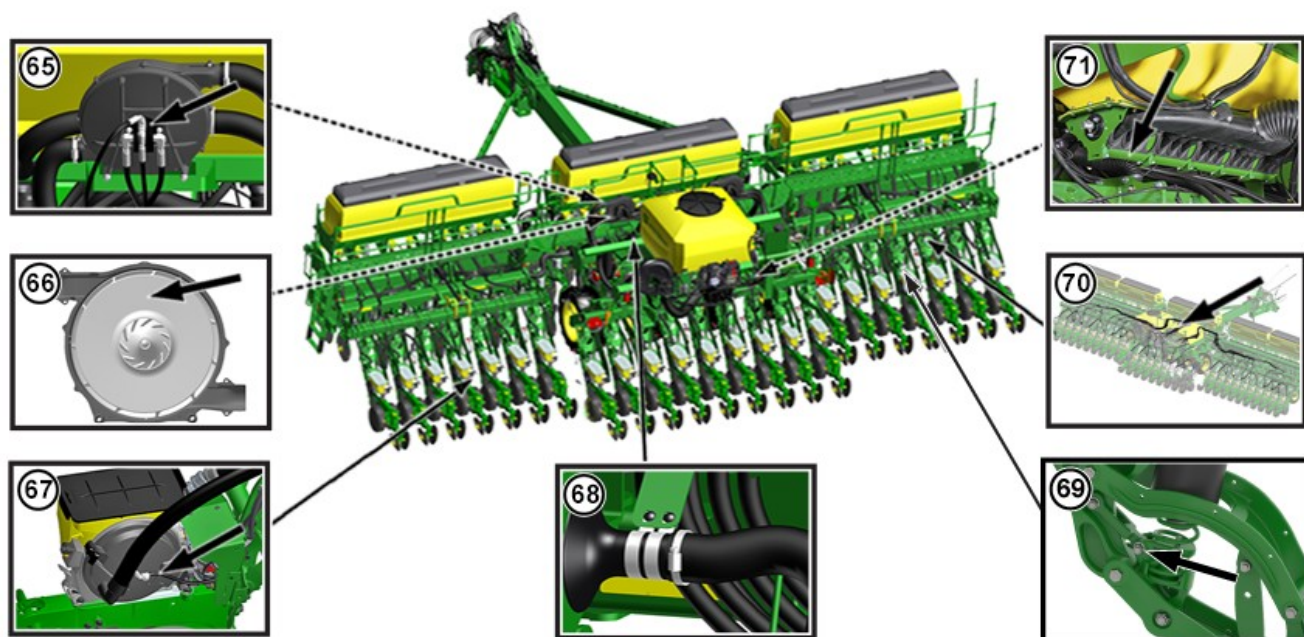
- 54—Clean row unit hopper screen (only for MaxEmerge 5e).
- 55—Lubricate vacuum seal and seed disk.
- 56—Inspect and service the seed meter (only for MaxEmerge 5e).
- 57—Inspect and service the seed meter (only for ExactEmerge).



CQ1386747—UN—19DEC24

- 58—Lubricate the front hitch pivots (if equipped).
- 59—Lubricate the rear hitch pivots (if equipped).
- 60—Check the pneumatic downforce (PDF) system pressure sensors.
- 61—Check for pneumatic downforce (PDF) system connectors leaks.

- 62—Check for leaks on pneumatic downforce (PDF) system air springs.
- 63—Drain the pneumatic downforce (PDF) system tank.
- 64—Change the pneumatic downforce (PDF) compressor oil.

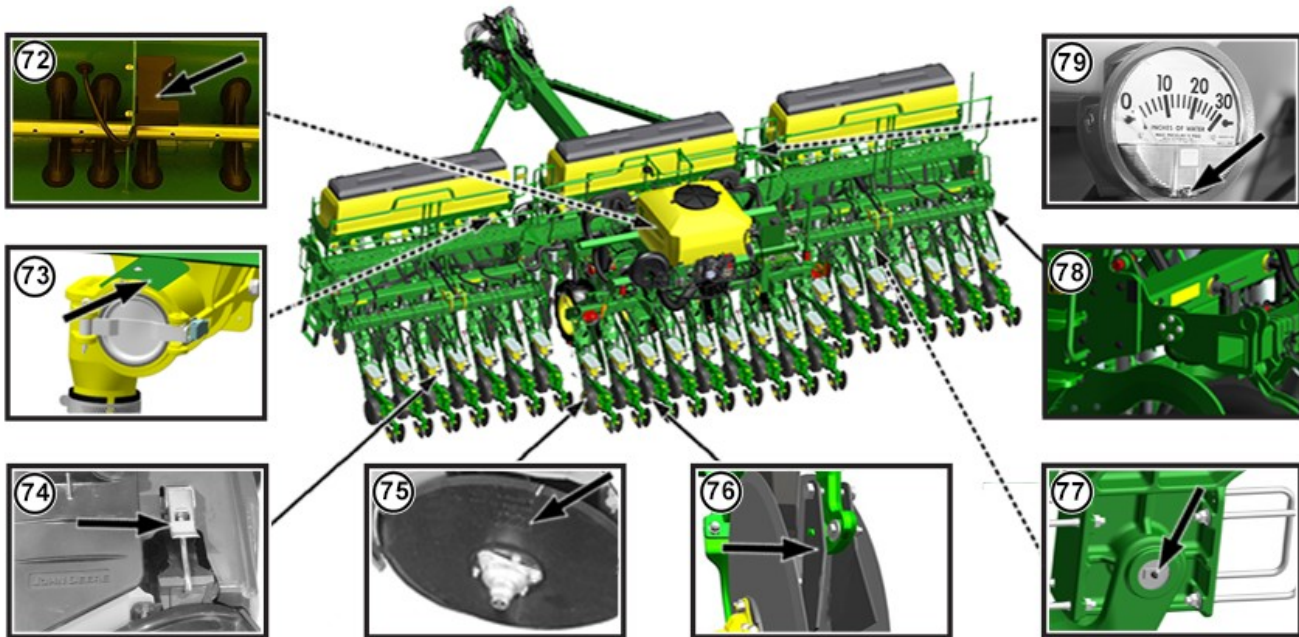


CQ1450502—UN—13MAR26

Service — Start of the Season

- 65—Check vacuum motor.
- 66—Check and clean vacuum housing and impeller.
- 67—Clean the vacuum pressure sensor hose.
- 68—Check the vacuum system couplings.

- 69—Check spring linkage bushing wear.
- 70—Check central commodity system (CCS) hoses routing.
- 71—Clean central commodity system (CCS) manifold.



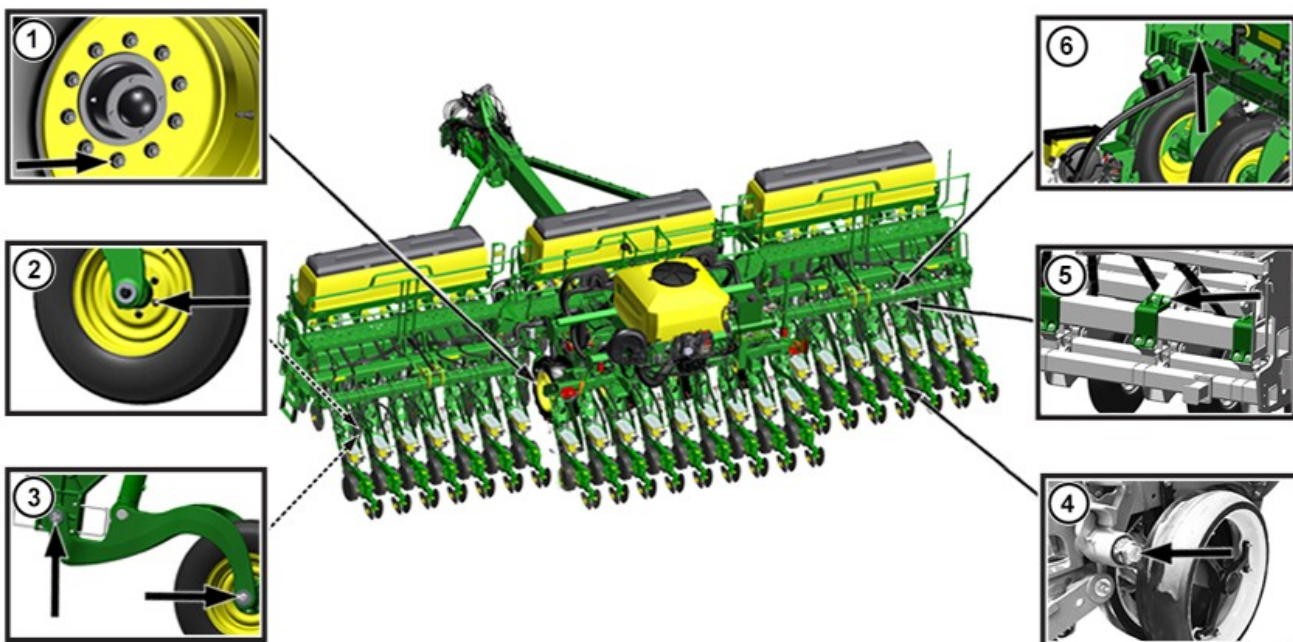
CQ1386751—UN—19DEC24

- 72—Check and clean the central commodity system (CCS) tank level sensors.
- 73—Check the meter protective cap.
- 74—Adjust the meter latch (only for ExactEmerge).
- 75—Check and adjust the double disk blade (MaxEmerge 5e Offset Only).

- 76—Check the double disk blade scrapers (MaxEmerge 5e Offset Only).
- 77—Lubricate the wing wheel pivots.
- 78—Lubricate the rockshaft end pivot.
- 79—Check central commodity system (CCS) blower pressure gauge filter.

PS9EIDU,1773336180268-19-20APR26

Service—First 10 Hours



CQ1386709—UN—19DEC24

- 1—Check the center frame wheel screws torque.
- 2—Check the wing wheel screws torque.
- 3—Check the wing wheel bracket torque.

- 4—Check the depth gauge wheel pivot arm torque.
- 5—Check the wing wheel clamp torque.
- 6—Check the bracket clamp torque.

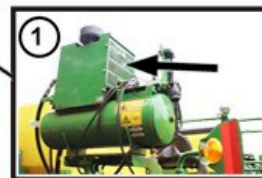
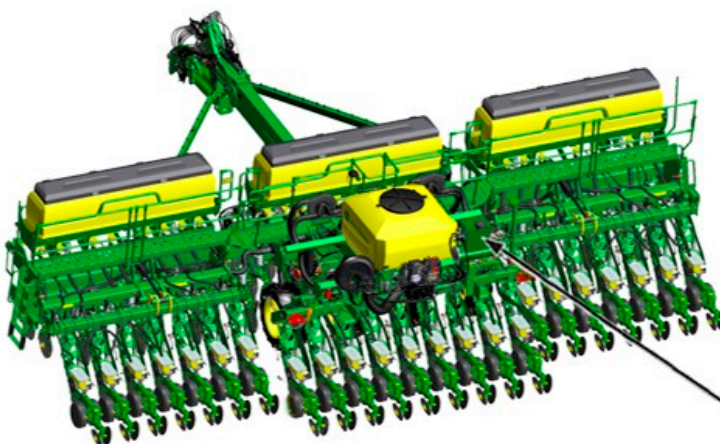


CQ1386710—UN—19DEC24

- 7—Check the coulters support screws torque.

- 8—Check the coulters cast bracket torque.

Service—First 20 Hours



CQ1373091—UN—23JUL24

- 1—Change the pneumatic downforce (PDF) compressor oil.

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Service—First 50 Hours



CQ1385320—UN—09DEC24

1—Check the coulter hub screw torque.
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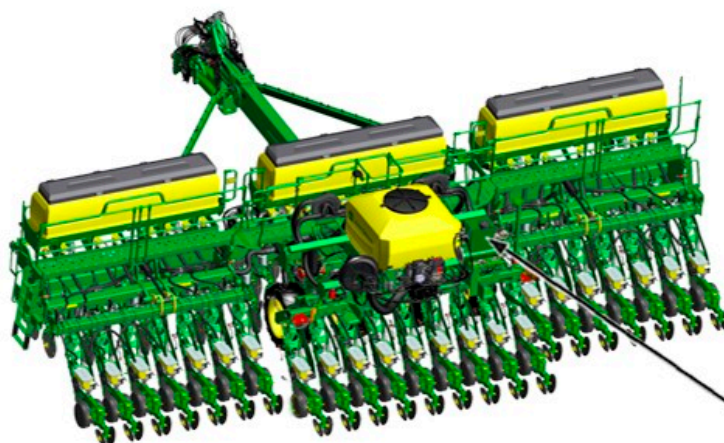
Service—First 100 Hours



CQ1373036—UN—23JUL24

1—Check the coulter cast bracket torque.
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Service—10 Hours or Daily



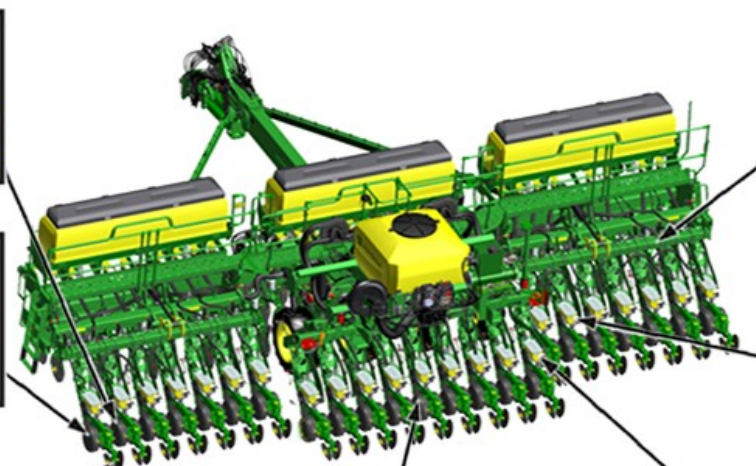
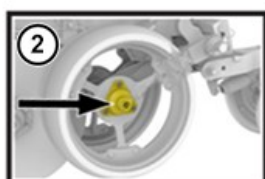
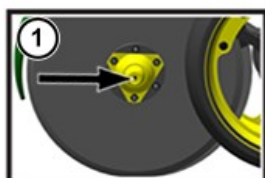
CQ1373093—UN—23JUL24

1—Drain the pneumatic downforce (PDF) system tank.

2—Check the pneumatic downforce (PDF) compressor oil level.

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Service—Every 50 Hours



CQ1373099—UN—11OCT24

1—Lubricate double disk blade hub.

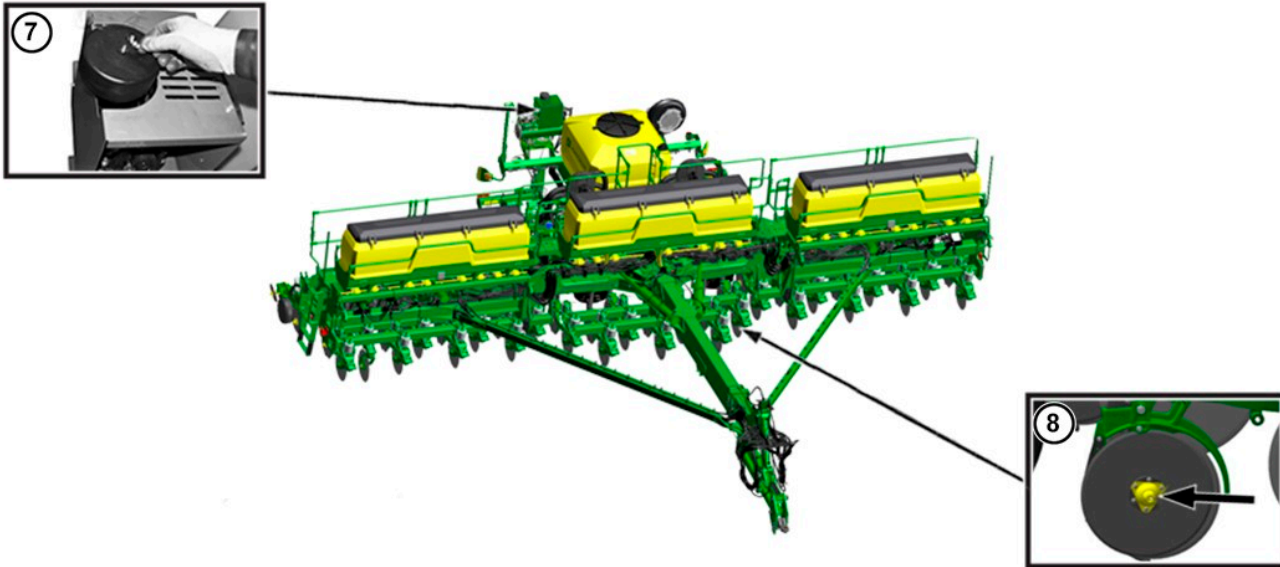
2—Lubricate the depth gauge wheel hub (MaxEmerge 5e offset only).

3—Lubricate the closing wheels hub (MaxEmerge 5e offset only).

4—Clean BrushBelt cartridge (only for ExactEmerge).

5—Lubricate vacuum seal and seed disk.

6—Clean the vacuum system.



CQ1373100—UN—25JUL24

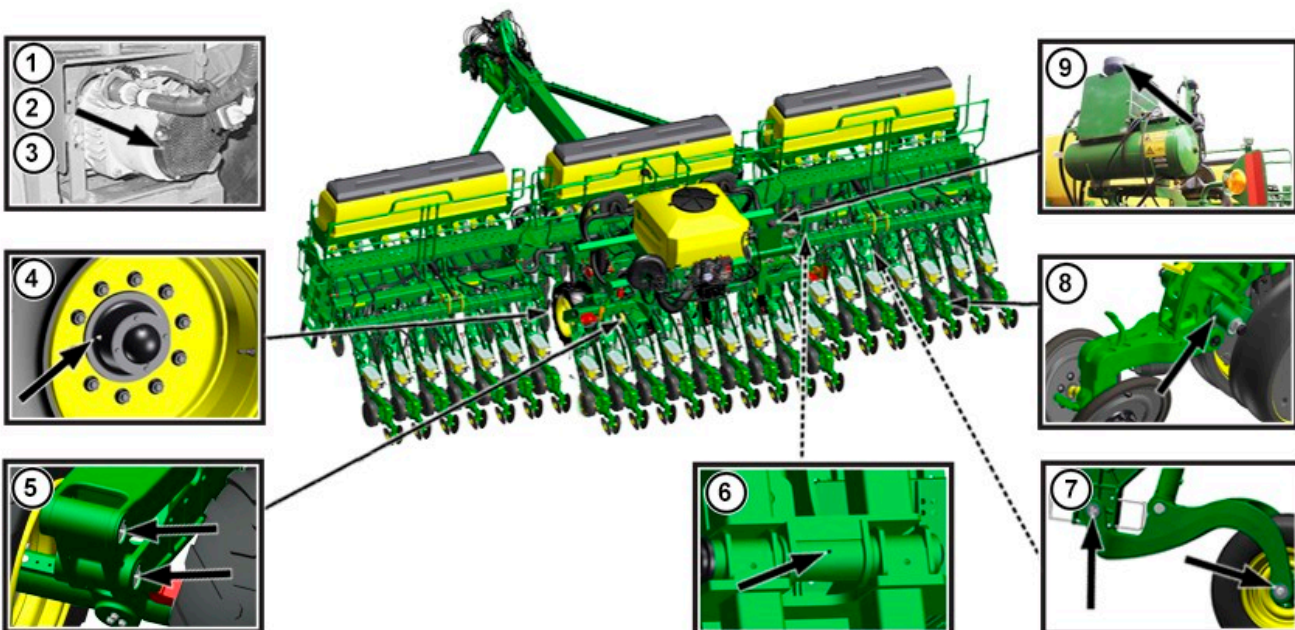
7—Clean the pneumatic downforce (PDF) compressor air filter.

8—Lubricate the fertilizer double disk bearings.

a3rfggt,1706012021167-19-25JUL24

Service—Every 100 Hours

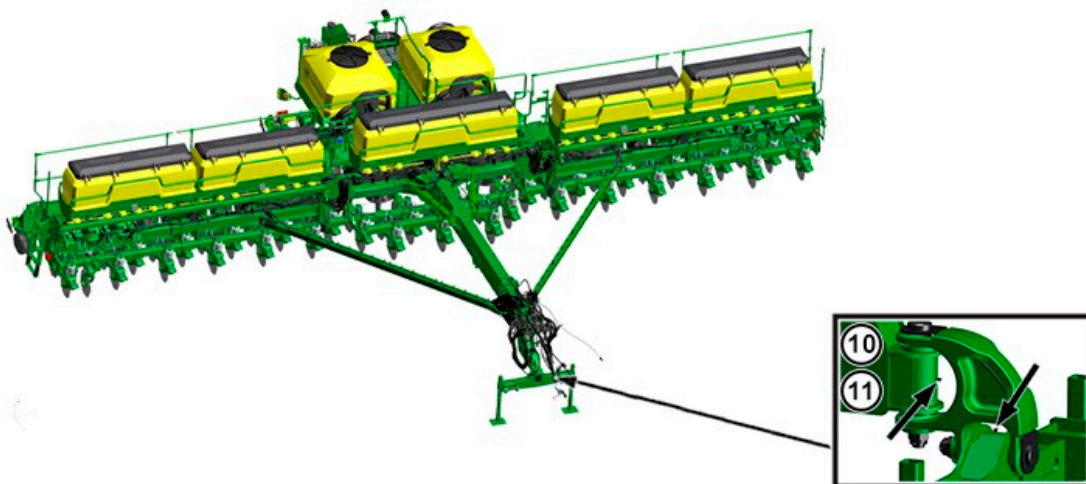
NOTE: The electronic power take-off (EPTO) is not shown at the main image because it is attached to the tractor. For more information, see the related system service section.



CQ1381484—UN—31OCT24

- 1—Clean the electronic power take-off (EPTO) alternator gear case.
- 2—Lubricate the electronic power take-off (EPTO) alternator gear case coupling.
- 3—Check the electronic power take-off (EPTO) alternator gear case oil level.

- 4—Lubricate the center wheel hub.
- 5—Lubricate the center wheel pivots.
- 6—Lubricate the swing arm flex pivots.
- 7—Lubricate the wing wheel pivots.
- 8—Lubricate the depth gauge wheel arms.¹
- 9—Replace the pneumatic downforce (PDF) compressor air filter.



- 10—Lubricate the two-point hitch head pivot (if equipped).

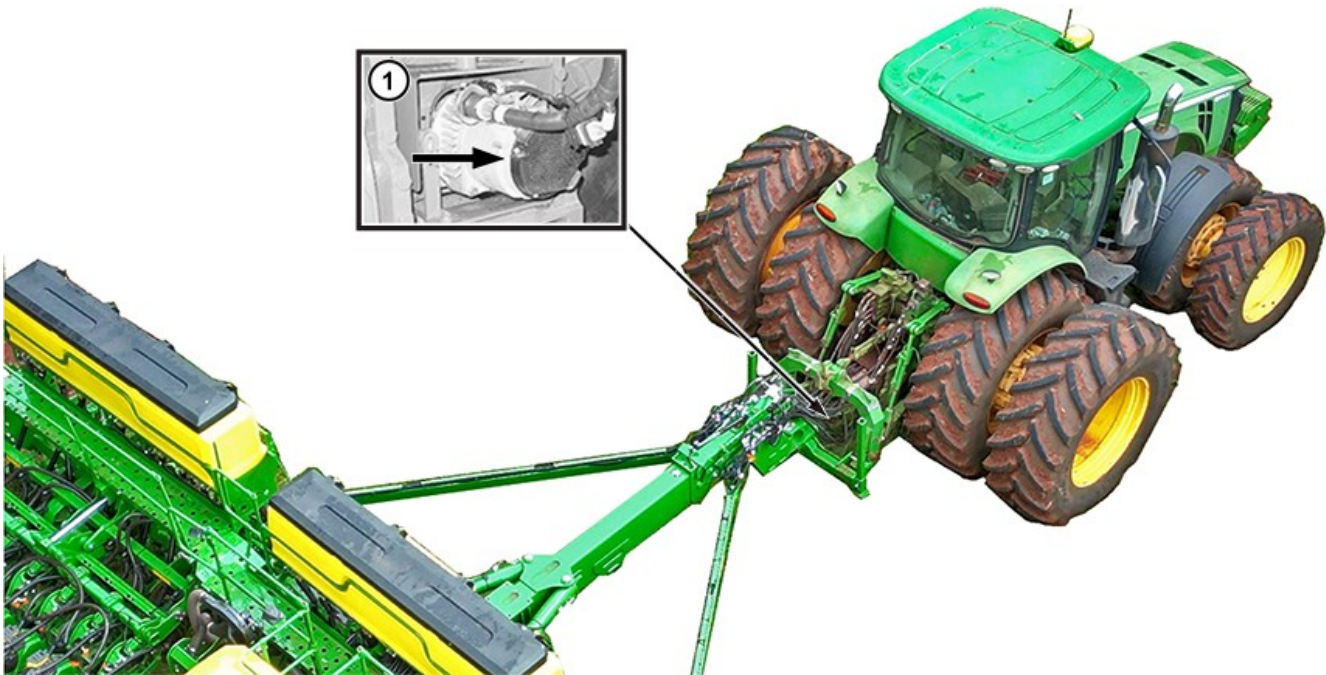
- 11—Lubricate the two-point hitch pivot (if equipped).

CQ1381485—UN—31OCT24

a3rfggt,1706012021005-19-31OCT24

¹ MaxEmerge 5e EmergePro and ExactEmerge

Service—Every 200 Hours



CQ1373180—UN—23JUL24

1—Change the electronic power take-off (EPTO) alternator gear case oil.

NOTE: The image is for illustrative proposes. Use the tractor Operator's Manual for detailed information, as procedures vary by equipment.

UZ9X5WJ,1749815029483-19-13JUN25

Service—Electrical

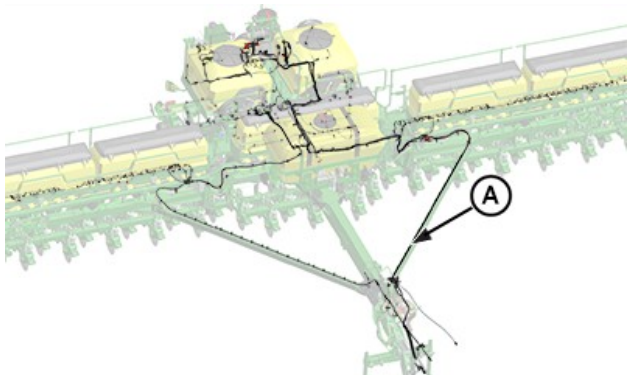
Check Electrical Routing and Connectors

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

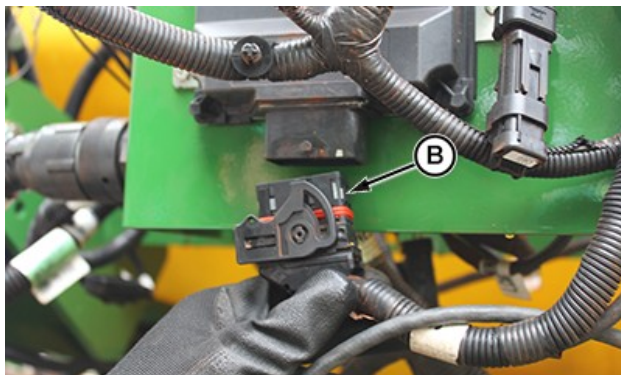
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1372160—UN—15JUL24

Electrical Routing



CQ1372164—UN—15JUL24

2. Check if the wiring harness (A) is properly routed.
3. Check if the wiring harness (A) is folded or damaged.
4. Check the connectors (B) integrity and connectivity.
5. If necessary, replace wiring harness (A) and connectors (B).

a3rfggt,1706013995698-19-30JUL24

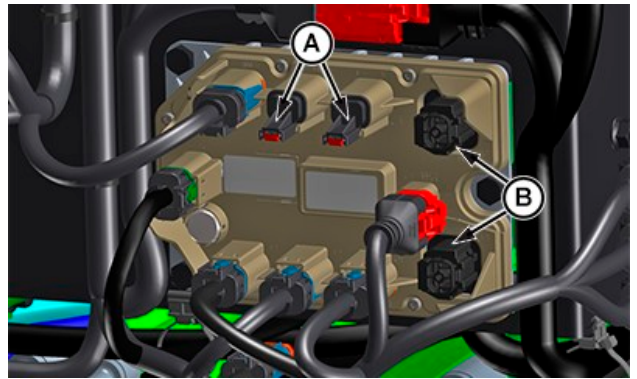
Check Ethernet Switch Dust Cap (If Equipped)

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

1. Park the planter on level ground.

NOTE: Dust cap must be properly installed to prevent dust or water from entering.



CQ1379035—UN—09OCT24

2. Check if ethernet switch dust caps (A) and (B) are properly installed.
3. Replace as needed.

PS9EIDU,1773342668822-19-12MAR26

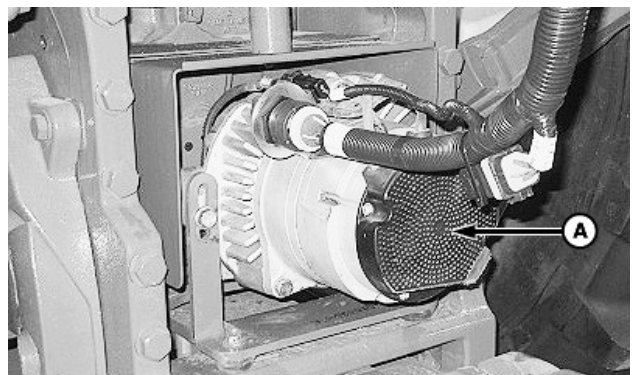
Clean the Electronic Power Take-Off (EPTO) Alternator

Perform this service at the start of the season and as required.

Make sure to comply with all the safety conditions before servicing.

IMPORTANT: Avoid damage to the machine. This procedure is important to prevent damage to the electronic power take-off (EPTO).

1. If the electronic power take-off (EPTO) alternator is attached to the tractor, turn off the tractor and remove the ignition key.



BM029362—UN—09MAY18

2. Clean the alternator grille (A) with a bristled brush.

a3rfggt,1706013995931-19-10JUL24

Check and Clean the Planter Wheel Motion Sensor

Perform this service at the start of the season and as required.

Make sure to comply with all the safety conditions before servicing.

1. Park the planter on level ground.
2. Check if planter wheel motion sensor (A) is properly installed.



CQ1372159—UN—15JUL24

3. Clean planter wheel motion sensor (A).
4. Replace as needed.

E443CH7,1750701338813-19-30JUN25

Service—Drives

Clean the Electronic Power Take-Off (EPTO) Alternator Gear Case

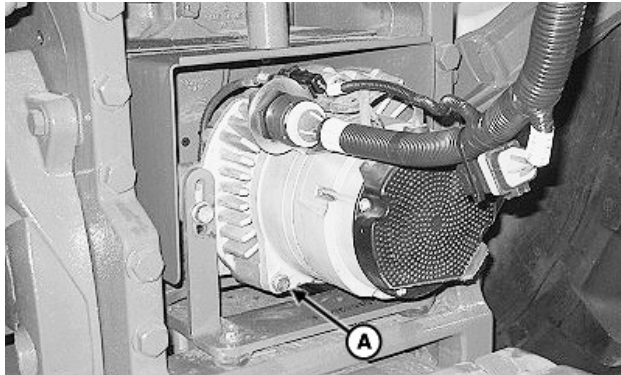
Perform this service at the start of the season, at every 100 hours, or as required.

Make sure to comply with all the safety conditions before servicing.

IMPORTANT: Avoid damage to the electronic power take-off (EPTO) system. Clean the alternator, the gear case, and the surrounding areas whenever necessary to ensure the proper function of the system.

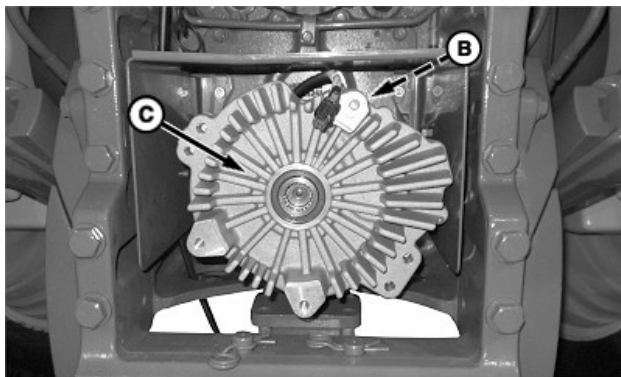
1. If the electronic power take-off (EPTO) alternator is attached on the tractor, turn off the ignition key.
2. Check the alternator grille and surrounding areas. Clean as necessary.

NOTE: Clean the alternator grille with a bristled brush.



BM029298—UN—25APR18

3. Remove the screws (A) and remove the EPTO alternator from the tractor.



BML008008—UN—24APR20

4. Check the area (B) behind the gear case and clean it as necessary.

NOTE: If necessary, for a better cleaning, remove the gear case from the tractor. (See Remove the Tractor Power Generation System in Tractor Power Generation.)

5. Check the area (C) for accumulated debris and clean it as necessary.



BML008009—UN—24APR20

6. Check the area (D) from the alternator and clean it as necessary.
7. Proceed with the regular lubrication and service of the alternator. (See Lubricate the Electronic Power Take-Off (EPTO) Alternator Gear Case Coupling and Check the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil Level later in this section.)

a3rfggt,1706014177155-19-04JUL24

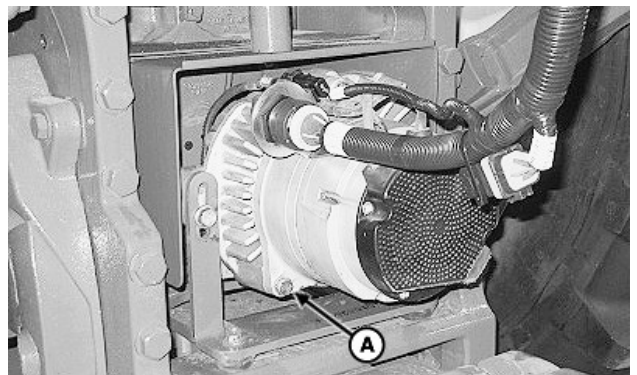
Lubricate the Electronic Power Take-Off (EPTO) Alternator Gear Case Coupling

Perform this service at the start of the season, and at every 100 hours.

Make sure to comply with all the safety conditions before servicing.

IMPORTANT: Avoid damage to the electronic power take-off (EPTO) system. Before lubrication it is recommended to clean the alternator, the gear case, and the surrounding areas to ensure the proper function of the system. (See Clean the Electronic Power Take-Off (EPTO) Alternator Gear Case procedure in this section.)

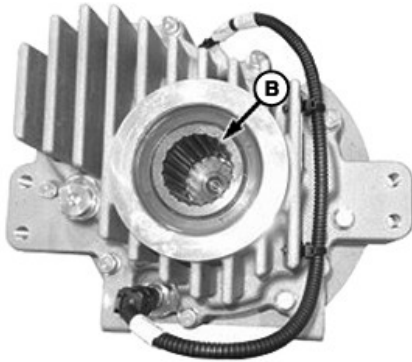
1. If the electronic power take-off (EPTO) alternator is attached on the tractor, turn off the ignition key.



BM029298—UN—25APR18

A—Screws (3 used)

2. Remove the screws (A) and remove the EPTO alternator from the tractor.



BM044824—UN—01OCT19



BM044825—UN—01OCT19

3. Apply a generous amount of the recommended grease to the alternator bronze gear (C) and in the gear case (B). (See Grease with Molybdenum Disulfide in the Lubrication section.)
4. Install the EPTO alternator on the tractor with the screws (A).

PS9EIDU,1773682612104-19-16MAR26

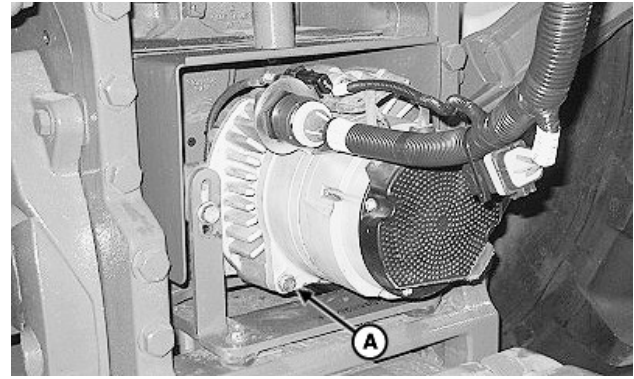
Check the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil Level

Perform this service at the start of the season, and at every 100 hours.

Make sure to comply with all the safety conditions before servicing.

NOTE: Check the alternator grille and clean as necessary.

1. If the electronic power take-off (EPTO) alternator is attached to the tractor, turn off the ignition key.



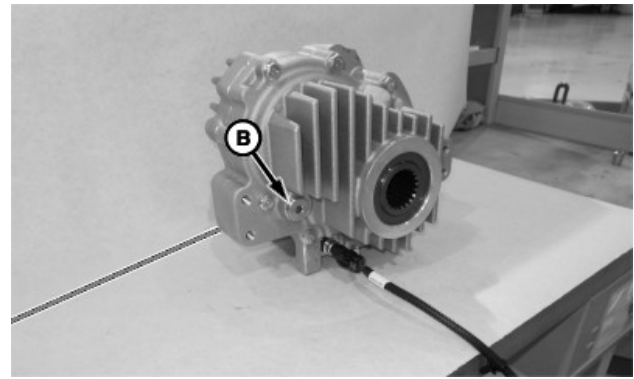
BM029298—UN—25APR18

A—Screws (3 used)

2. Remove the screws (A) and remove the alternator from the tractor.

IMPORTANT: Avoid damage to the gear and the shaft. Lubricate the gear every time that the alternator is installed and annually.

3. Lubricate the gears of the gear case. (See Lubricate the Electronic Power Take-Off (EPTO) Alternator Gear Case Coupling in this section.)



BM044823—UN—01OCT19

4. Place the gear case on a level surface with the vanes in vertical position (as shown).
5. Remove the plug (B).
6. Check the oil level: It must be level with the bottom of the hole.
7. If necessary, complete with the correct oil. (See the Lubrication section for information about the correct oil.)

a3rfgg,1706014178128-19-04JUL24

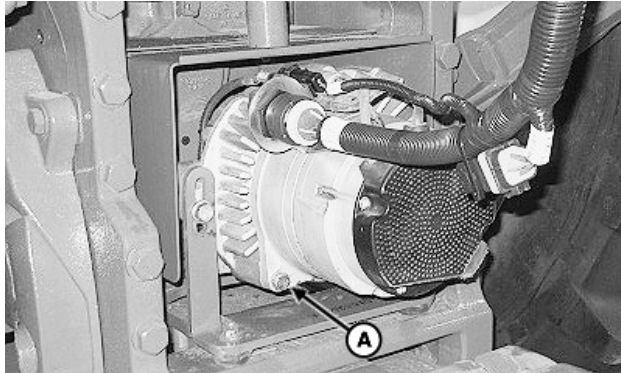
Change the Electronic Power Take-Off (EPTO) Alternator Gear Case Oil

Perform this service at the start of the season, and at every 200 hours.

Make sure to comply with all the safety conditions before servicing.

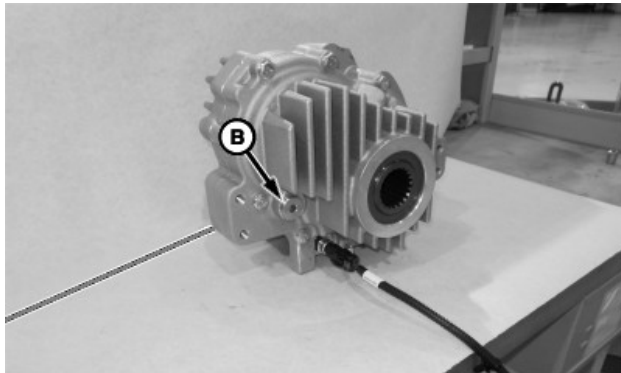
NOTE: The alternator grille must be checked and cleaned as necessary.

1. If the electronic power take-off (EPTO) alternator is attached to the tractor, turn off the ignition key.



BM029298—UN—25APR18

2. Remove the screws (A) and remove the EPTO alternator from the tractor.



BM044823—UN—01OCT19

3. Place the gear case on a level surface with the vanes in vertical position (as shown).
4. Remove the plug (B).
5. Drain all the oil into a suitable container.
6. Fill the gear case with new oil up to the bottom of the hole from the plug (B). The gear case oil capacity is as specified:

Specification

Gear Case Oil—Capacity. 0.5 L
(16.6 fl oz)

NOTE: Check the correct oil in Transmission, Steering, Brake, Hydraulic, and Gear Case Oil in the Lubrication section.

7. Install the plug (B).
8. Install the EPTO alternator on the tractor.

UZ9X5WJ,1749813548645-19-13JUN25

Service—Hydraulics

Lubricate the Central Frame Lift Cylinders

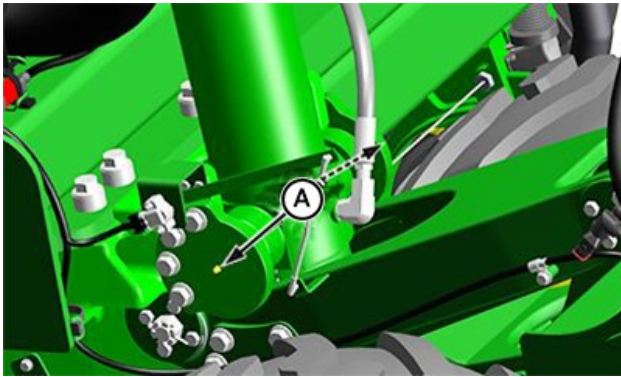
Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.
2. Thoroughly clean all the grease fittings.

NOTE: Damaged grease fittings must be replaced.

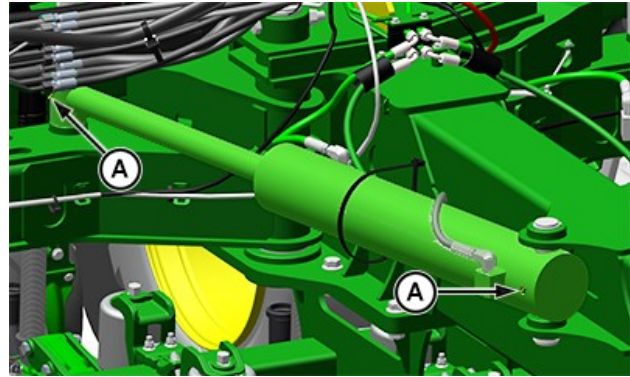


Central Frame Lift Cylinder

3. Lubricate grease fittings (A) on both central frame lift cylinders.

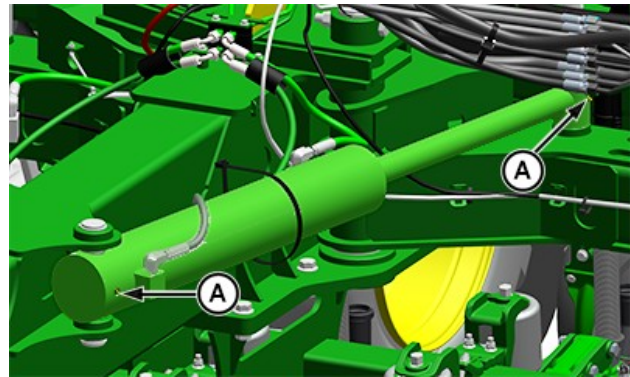
NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706014271915-19-12OCT24



Fold Cylinder

CQ1379503—UN—12OCT24



Fold Cylinder

CQ1379504—UN—12OCT24

Lubricate grease fittings (A) on both fold cylinders.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706014272054-19-12OCT24

Lubricate the Fold Cylinders

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.
2. Thoroughly clean all the grease fittings.

NOTE: Damaged grease fittings must be replaced.

Lubricate the Wing Frame Lift Cylinders

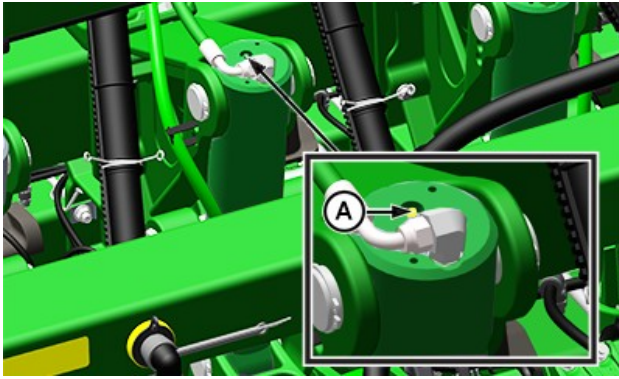
Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: Damaged grease fittings must be replaced.



CQ1380354—UN—21OCT24

Wing Frame Lift Cylinder

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A) on all wing frame lift cylinders for both sides of the planter.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706014292773-19-21OCT24

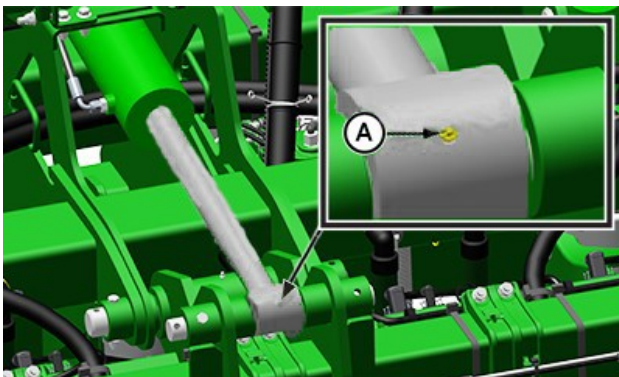
Lubricate the Rockshaft Cylinders

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground



CQ1379505—UN—12OCT24



CQ1379507—UN—12OCT24

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A) on all rockshaft cylinders on both sides of the planter.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706014290835-19-12OCT24

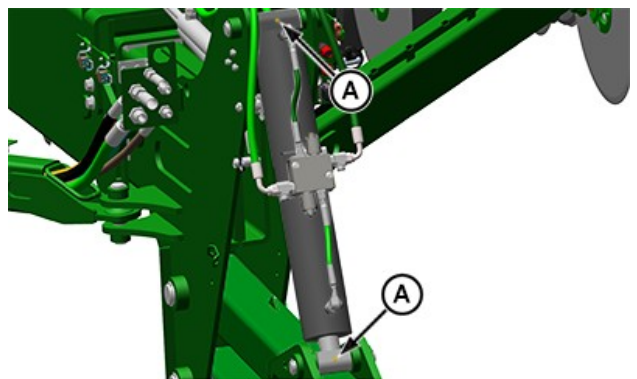
Lubricate the Hitch Tube Cylinder—If Equipped

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1379506—UN—12OCT24

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A) on hitch tube cylinder.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706014288500-19-12OCT24

Service—Wheels and Hardware

Service Tires Safely



TS952—UN—15APR13

Explosive separation of a tire and rim parts can cause serious injury or death.

Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job.

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.

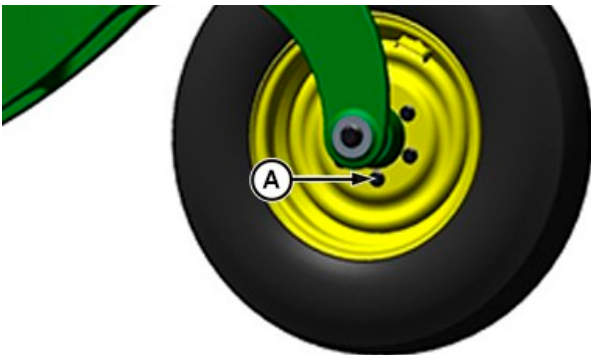
DX,TIRECP-19-24AUG90

Check the Center Frame Wheel Screws Torque

Perform this service after the first 10 hours of operation, and at the start of the season.

Make sure to comply with all the safety conditions before servicing.

Outer Wing Wheels



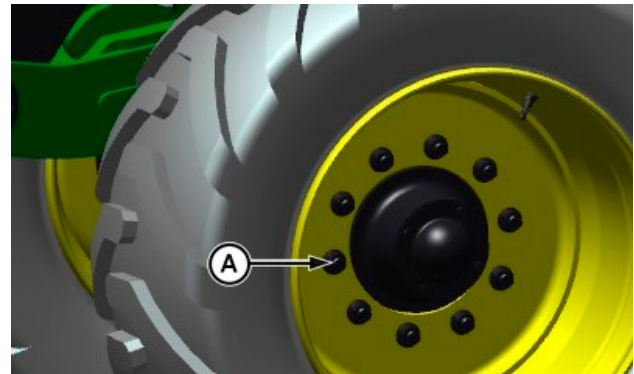
CQ1372284—UN—23JUL24

Tighten screws (A) of the outer wing wheels hub to specification.

Specification

Wing Wheels Screw—Torque. 180 N·m
(130 lb·ft)

Center Frame Wheels



CQ1372285—UN—23JUL24

Tighten screws (A) of the center wheels hub to specification.

Specification

Center Wheels Screw—Torque. 425 N·m
(315 lb·ft)

E443CH7,1750701483836-19-30JUN25

Check the Wing Wheel Bracket Torque

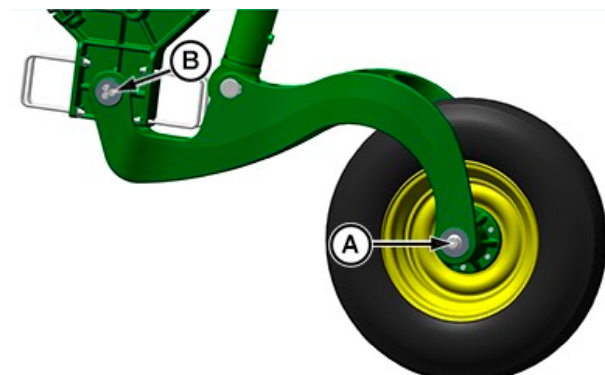
Perform this service after the first 10 hours of operation, at the start of the season, and as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

NOTE: Performing this service as required means to whenever changing rows spacing, it is necessary to check wing wheel bracket torque.

1. Park the planter on level ground.



CQ1379511—UN—23OCT24

2. Check torque bolts (A) and nuts.

3. Check torque screws (B). Check on all wing wheels bracket, on both sides of the planter.
4. Retighten, if necessary.

Specification

Wing Wheel Bolt (A)—Torque.	640 N.m (472 lb·ft)
Wing Wheel Bracket Screw (B)—Torque.	120 N.m (88.5 lb·ft)

E443CH7,1750701520578-19-03JUL25

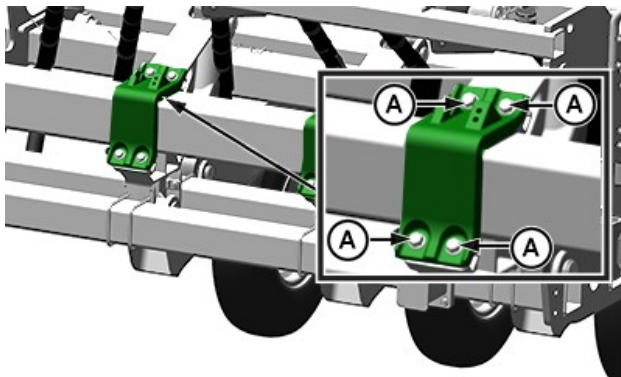
Check the Wing Wheel Clamp Torque

Perform this service after the first 10 hours of operation, and at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1385648—UN—11DEC24

Wing Wheel Clamp

2. Check screws (A) torque on all wing wheel clamps, on both sides of the planter.
3. If necessary, retighten it to specification.

Specification

Wing Wheel Clamp Screw—Torque.	331 N.m (244 lb·ft)
--	------------------------

E443CH7,1750701534553-19-30JUN25

Lubricate the Center Wheel Hub

Perform this service at start of the season and every 100 hours.

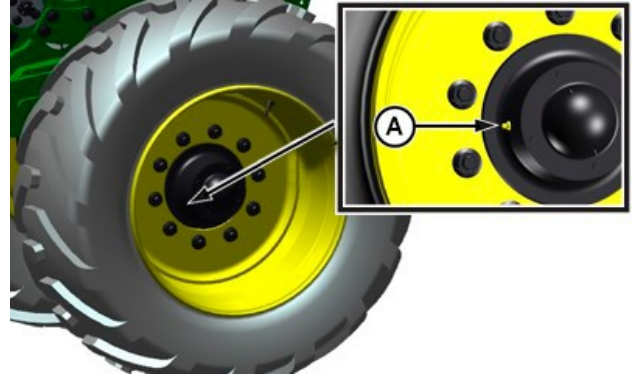
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.

2. Clean all the grease fittings (A).



CQ1379517—UN—13OCT24

3. Lubricate grease fitting (A) of the center frame wheel hub.

IMPORTANT: Avoid damage to the machine. Only 10—15 pumps of the grease gun are necessary. Excessive grease can expel the wheel hub retainer.

4. Apply grease to all the corresponding grease fittings.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see Lubrication section.

a3rfggt,1706015132890-19-13OCT24

Lubricate the Center Wheel Pivots

Perform this service at start of the season and every 100 hours.

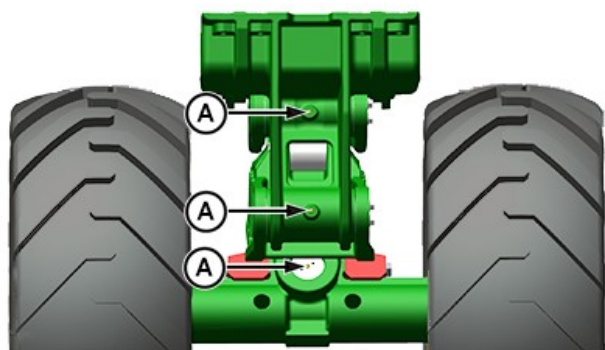
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

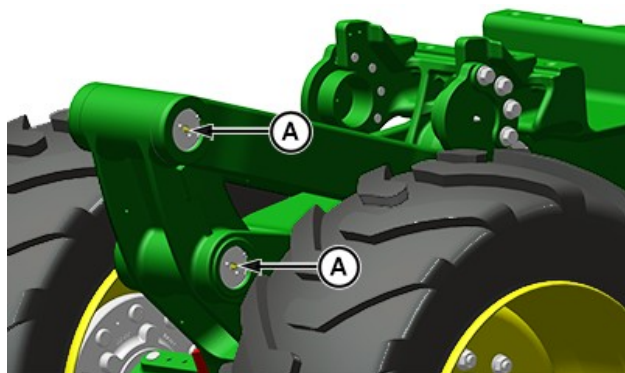
1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.

2. Clean all the grease fittings (A).
3. Lubricate grease fitting (A) of the center wheel pivots.



CQ1379562—UN—14OCT24



CQ1379563—UN—14OCT24

4. Apply grease to all corresponding grease fittings (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see Lubrication section.

a3rfggt,1706015912221-19-23OCT24

Lubricate the Wing Wheel Pivots

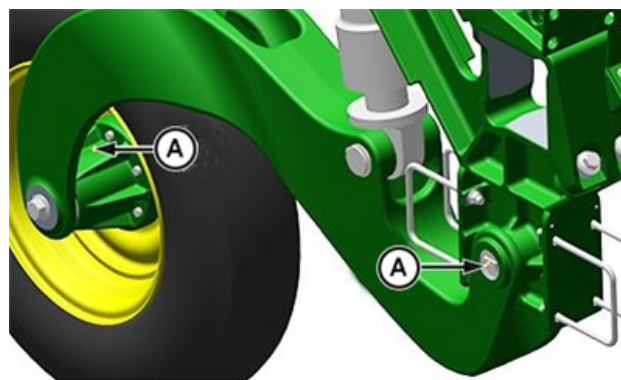
Perform this service at start of the season and every 100 hours.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1379549—UN—14OCT24

2. Thoroughly clean grease fittings (A) of all the wings wheels pivots.
3. Lubricate grease fittings (A) of the wing wheel pivot.
4. Apply grease to all the corresponding grease fittings on the planter.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706015132756-19-14OCT24

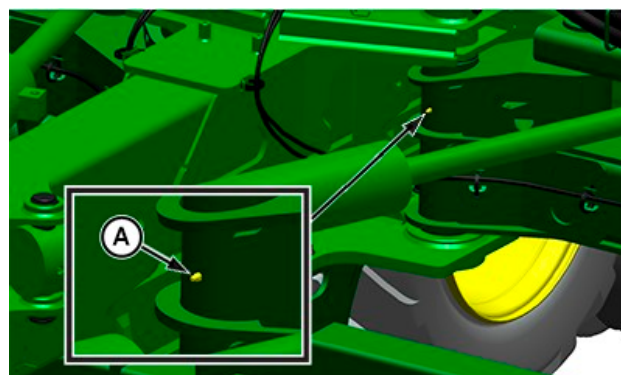
Lubricate the Swing Arm Fold Pivots

Perform this service start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1379515—UN—23OCT24

2. Thoroughly clean grease fitting (A).

NOTE: If necessary, replace damaged grease fittings.

3. Lubricate grease fitting (A).
4. Apply grease to the corresponding grease fitting at the other side of the machine.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706015132648-19-13OCT24

Lubricate the Swing Arm Flex Pivots

Perform this service at start of the season and every 100 hours.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.

2. Thoroughly clean the grease fitting (A).



CQ1379518—UN—13OCT24

3. Lubricate the grease fitting (A).
4. Apply grease to the corresponding grease fitting on the other side of the planter.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706015132525-19-13OCT24

Lubricate the Hitch Link—If Equipped

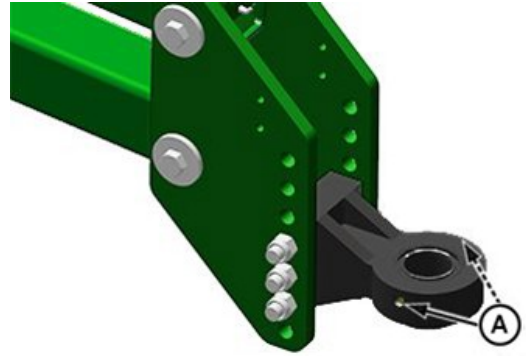
Perform this service start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1379512—UN—13OCT24

2. Thoroughly clean grease fitting (A).
3. Lubricate grease fitting (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706015131893-19-13OCT24

Lubricate the Two-Point Hitch Pivot—If Equipped

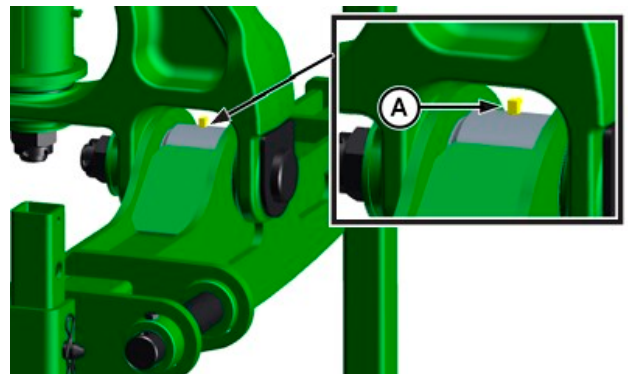
Perform this service at start of the season and every 100 hours.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1371863—UN—25JUL24

2. Thoroughly clean grease fitting (A).
3. Lubricate grease fitting (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfgg,1706016058004-19-25JUL24

Lubricate the Two-Point Hitch Head Pivot—If Equipped

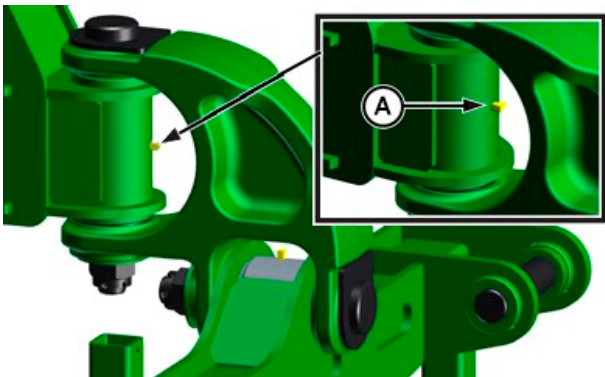
Perform this service at start of the season and every 100 hours.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1371864—UN—25JUL24

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfgg,1706016062642-19-25JUL24

Lubricate the Front Hitch Pivots—If Equipped

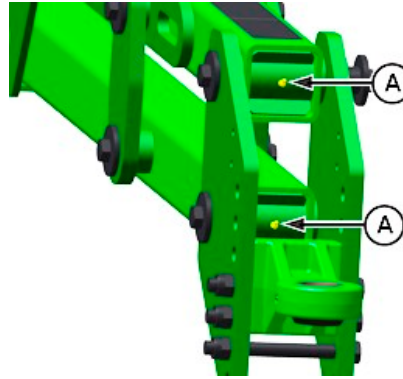
Perform this service start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1371866—UN—25JUL24

2. Thoroughly clean all the grease fittings (A).
3. Lubricate the grease fittings (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfgg,1706015131797-19-22JUL24

Lubricate the Rear Hitch Pivots—If Equipped

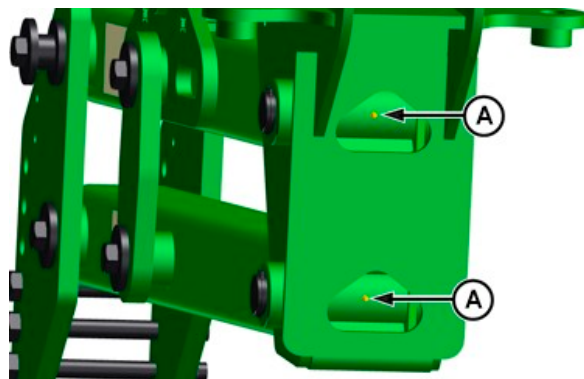
Perform this service start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1371868—UN—23JUL24

2. Thoroughly clean all grease fittings (A).
3. Lubricate grease fittings (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfgg,1706015131695-19-25JUL24

Lubricate the Draft Tube Pivots

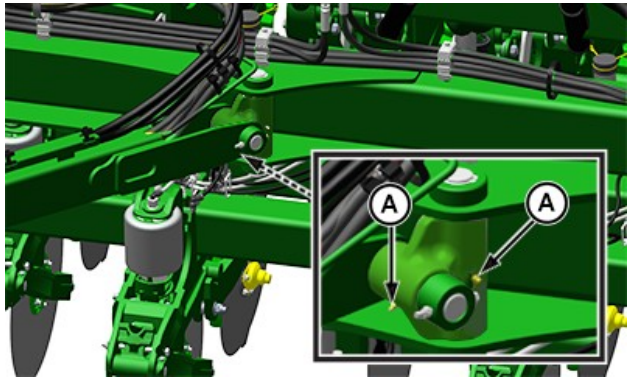
Perform this service start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1379516—UN—13OCT24

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A).
4. Clean and lubricate the corresponding grease fittings at the draft tube pivot from the other side of the machine.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706015131535-19-13OCT24

Lubricate the Central Commodity System (CCS) Extension Pivots

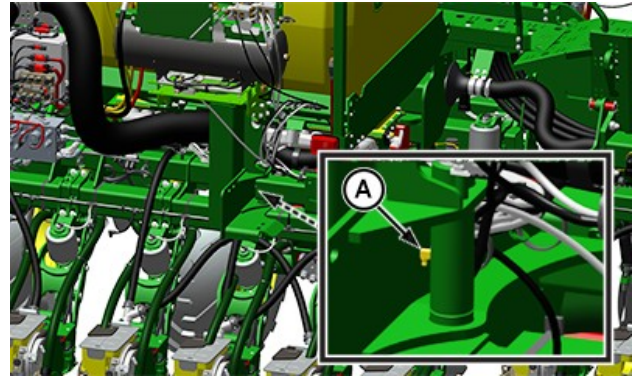
Perform this service start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, replace damaged grease fittings.



CQ1379514—UN—13OCT24

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A).
4. Clean and lubricate the corresponding grease fittings at the other side of the machine.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706016089473-19-13OCT24

Lubricate the Rockshaft Pivots

Perform this service start of the season.

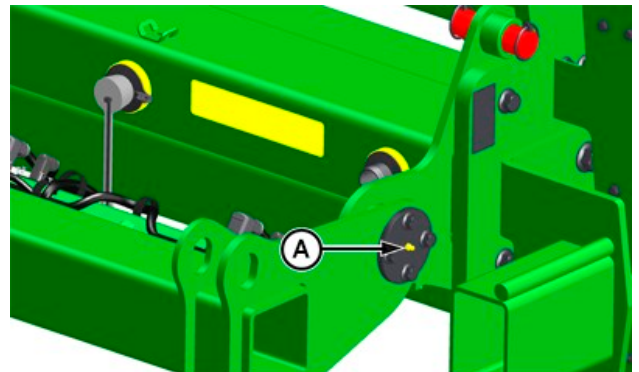
Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

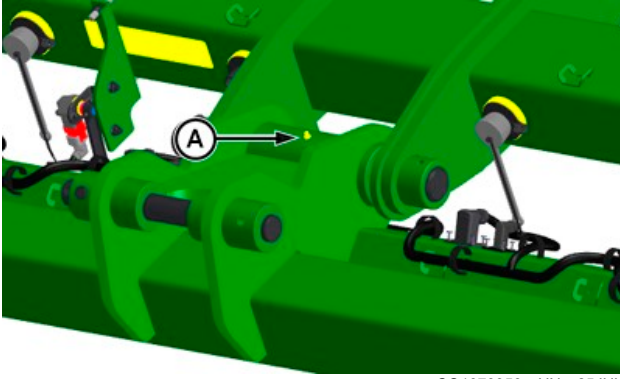
NOTE: Damaged grease fittings must be replaced.

2. Thoroughly clean grease fittings (A) on both sides of rockshaft structure.



CQ1371875—UN—25JUL24

Rockshaft Pivot Right-Hand Side Lubrification Point



CQ1373353—UN—25JUL24

Rockshaft Pivot Center Lubrication Point

3. Lubricate grease fittings (A).
4. Clean and lubricate the corresponding grease fittings at the other side of the machine.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

a3rfggt,1706016092665-19-14OCT24

Service—Fertilizer Unit

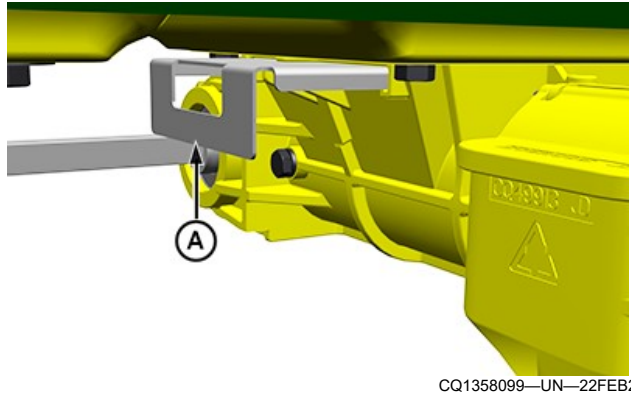
Clean the Fertilizer Boxes

Perform this service at the start of the season, or as required.

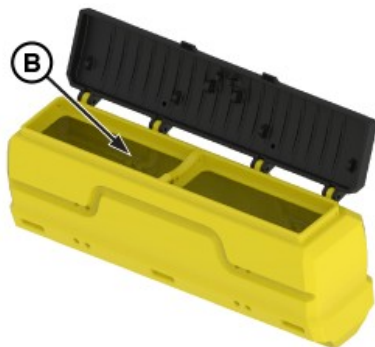
Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



2. Close cover (A).
3. Remove fertilizer from box (B).



Fertilizer box

4. Clean box (B).

PS9EIDU,1773683093409-19-30MAR26

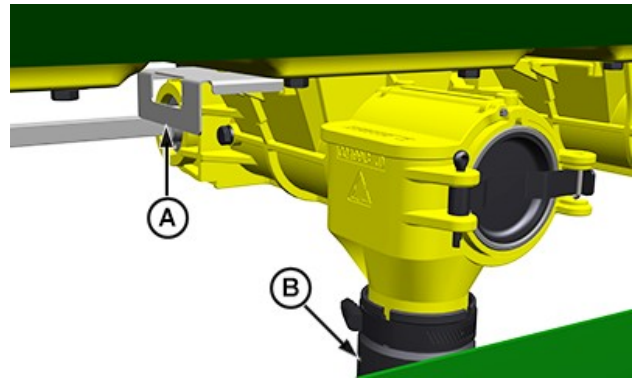
Clean the Fertilizer Meters

Perform this service at the start of the season, or as required.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

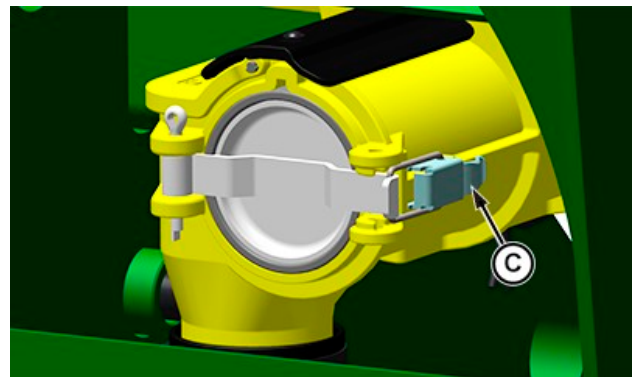
1. Park the planter on level ground.



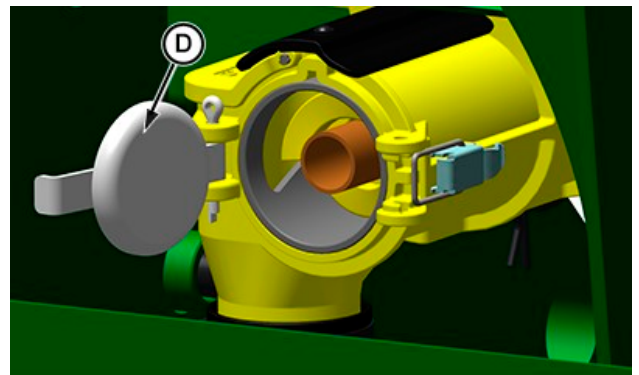
2. Close the cover (A).

NOTE: Before disconnect hoses (B), it is recommended to use a suitable container to collect the fertilizer.

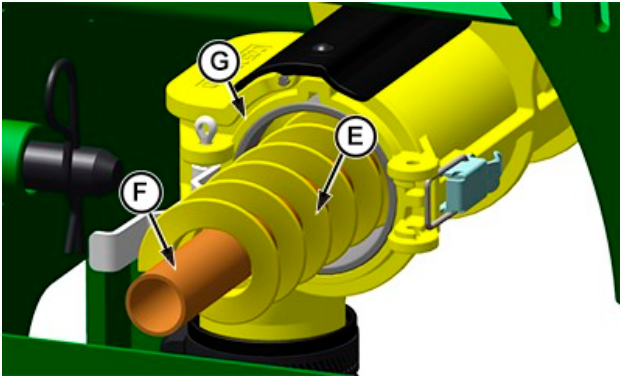
3. Disconnect hoses (B) from meters.



4. Release the latch (C).



5. Remove cover (D).



CQ1379331—UN—10OCT24

6. Remove spring (E) and tube (F).
7. Clean the fertilizer from meters (G).
8. To assembly, follow the procedure in reverse order.

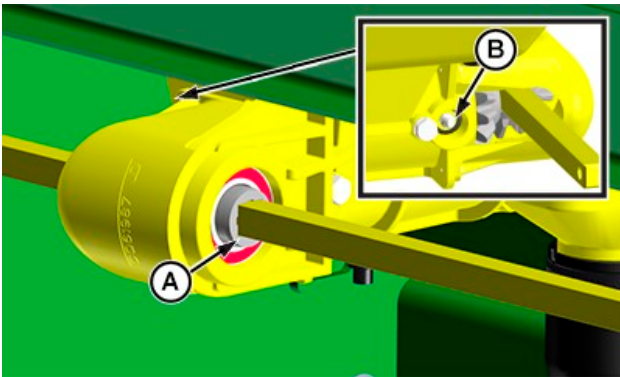
a3rfggt,1706016566164-19-10OCT24

Lubricate the Fertilizer Meter Bearings

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Park the planter on a level ground, and properly support the machine to avoid serious injury or death.



CQ1358572—UN—10OCT24

NOTE: If necessary, replace damaged grease fittings.

1. Thoroughly clean all the grease fittings (B).
2. Lubricate fertilizer meter bearings (A).
3. Apply grease on all the corresponding grease fittings from the planter.

NOTE: See correct grease in Lubricant section.

a3rfggt,1706016573680-19-10OCT24

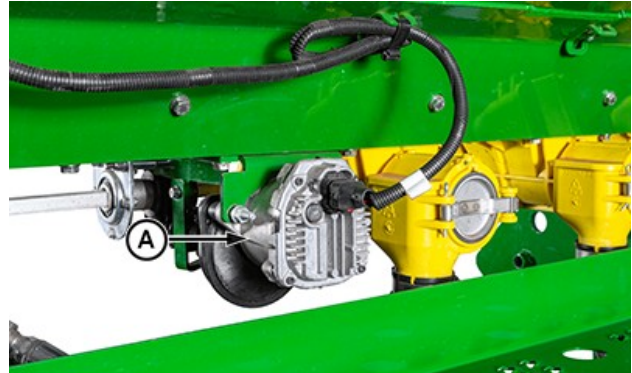
Check the Fertilizer Meters Electric Drive Operation

Perform this service at the start of the season, or as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1358613—UN—22FEB24

2. Check the fertilizer meters electric drive operation.

NOTE: See the SeedStar 5 manual for more information.

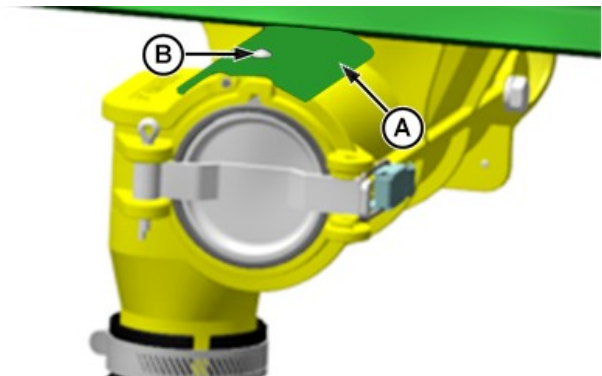
a3rfggt,1706016580812-19-10OCT24

Check the Meter Protective Cap

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

1. Park the planter on level ground.



CQ1374513—UN—09AUG24

2. Check meter protective cap (A) position and wear.
3. If necessary, tighten screws (B).
4. Repeat the procedure on all meters.

5. If necessary, replace meter protective cap (A).

kp318th,1723204370961-19-09AUG24

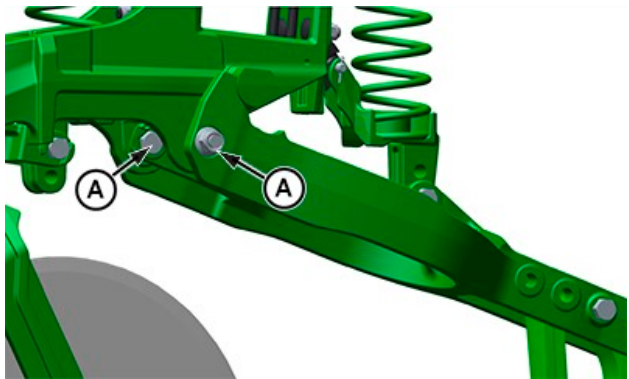
Check the Fertilizer Support Screws Torque

Perform this service at the first 10 hours of operation, and at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.
2. Support the machine.



CQ1357635—UN—10OCT24

3. Check fertilizer support screws (A) torque. If necessary, tighten to specification.

Specification

Fertilizer Support Screw
(A)—Torque. 300 N·m
(221 lb·ft)

4. Repeat the procedure on all the row units.

E443CH7,1750703798069-19-01JUL25

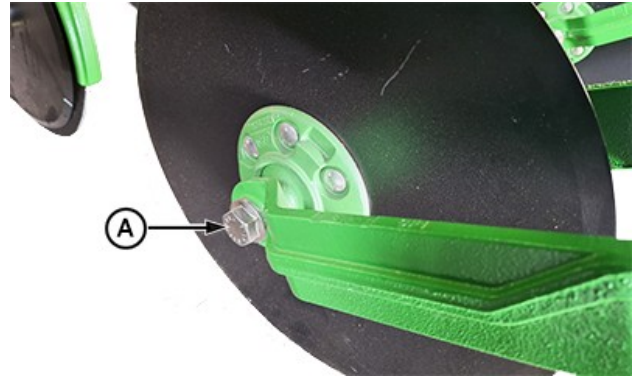
Check the Coulter Hub Screw Torque

Perform this service at the first 50 hours of operation, and at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1357692—UN—12APR24

Coulter Hub Screw

2. Check coulter hub screw (A) torque.
3. If necessary, tighten coulter hub screw (A) in a crisscross pattern, as specified.

Specification

Coulter Hub Screw—Torque. 300 N·m
(221 lb·ft)

4. Repeat the procedure on all row units.

a3rfggt,1706016706073-19-10OCT24

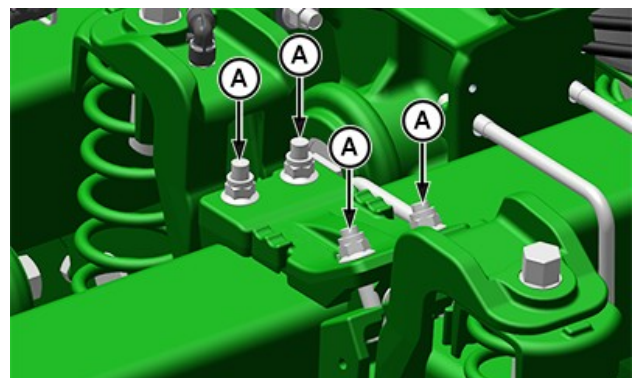
Check the Coulter Cast Bracket Torque

Perform this service at the first 10 hours and first 100 hours of operation, start of the season, and as required (after changing the row spacing configuration).

Make sure to comply with all the safety conditions before servicing.

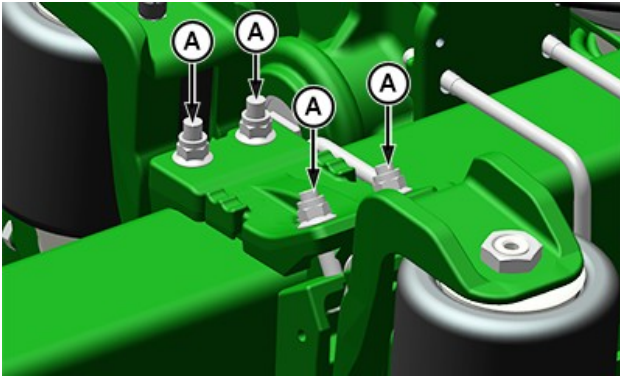
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1371756—UN—12JUL24

Coulter with Mechanical Spring



CQ1371757—UN—12JUL24

Coulter with Pneumatic Downforce (PDF) Spring

2. Check coulters cast bracket screws (A) torque.
3. If necessary, tighten the screws in crisscross pattern, as specified.

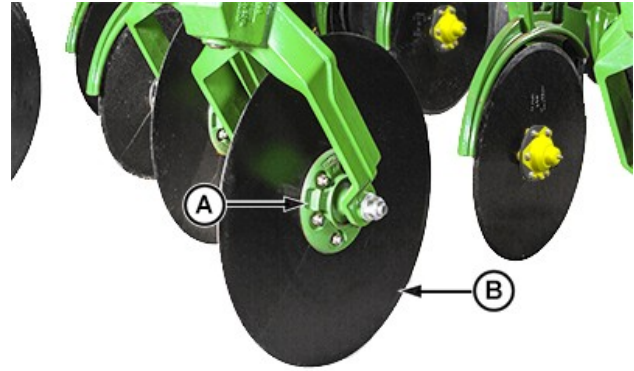
Specification

Coulter Cast Bracket Screw

(A)—Torque. 122 N·m
(90 lb·ft)

4. Repeat the procedure on all row units.

E443CH7,1750703643315-19-01JUL25



CQ1364244—UN—11APR24

3. To check coulters bearing (A) condition, rotate coulters disk (B).

IMPORTANT: Bearings must not be replaced if the disks are heavy to turn or producing small noises. These are expected behaviors.

4. Check if the disks are fully locked or have excessive end play. Replace the bearings, if needed. (See Replace the Coulters Bearings in this section).
5. Repeat the procedure for all the row units.

FHSSYU9,1774291217025-19-23MAR26

Check the Coulters Bearings

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: After preparing the planter for any maintenance, adjustment, or check, set the tractor's park brake, turn off the engine, and remove the key. If the procedure is done with the machine uncoupled from the tractor, immobilize it by placing locking wedges under all wheels. In addition, install the jackstand appropriately.

1. Park planter on level ground.
2. Raise planter.

Replace the Coulters Bearings

Perform this service as required.

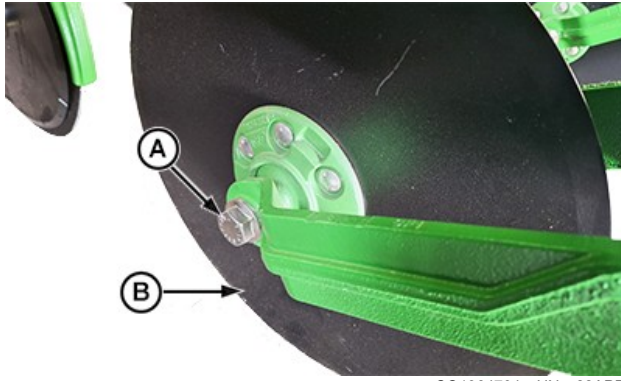
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: After preparing the planter for any maintenance, adjustment, or check, set the tractor's park brake, turn off the engine, and remove the key. If the procedure is done with the machine uncoupled from the tractor, immobilize it by placing locking wedges under all wheels. In addition, install the jackstand appropriately.

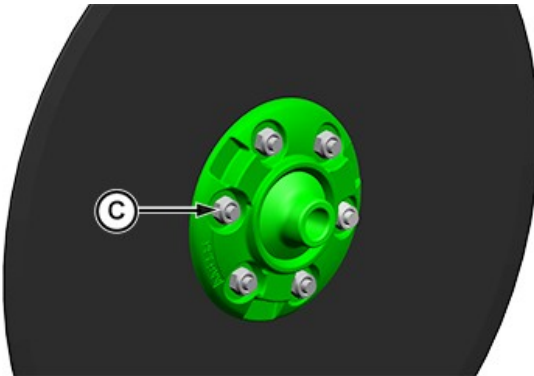
1. Park planter on level ground.
2. Raise planter.



CQ1364704—UN—22APR24

Coulter Disk

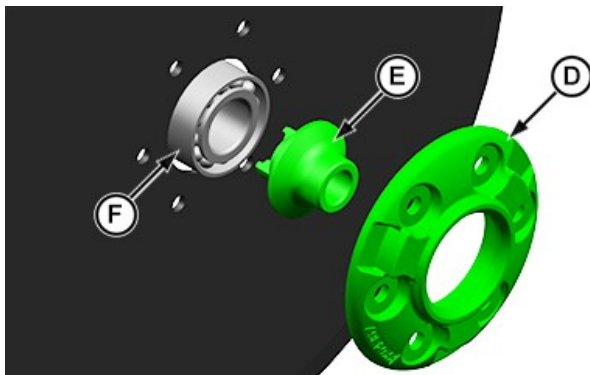
3. Remove coulters hub screw and nut (A).
4. Remove coulters disk (B) and put it on a safety work place.



CQ1357727—UN—31JAN24

Flange Screws

5. Remove hub screws and nuts (C).



CQ1357728—UN—31JAN24

Coulter Bearings Replacement

6. Remove flanges (D) and shafts (E) from both sides.
7. Remove bearing (F), and replace it with a new one.
8. To assemble, follow the procedure in reverse order.

Specification

Coulter Arm Screw—Torque. 300 N·m
(221 lb·ft)

Specification

Hub Screw—Torque. 36 N·m
(26 lb·ft)

E443CH7,1750703622712-19-01JUL25

Check the Coulter Bushing and Pin

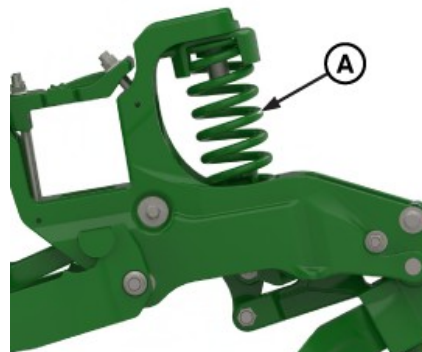
Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

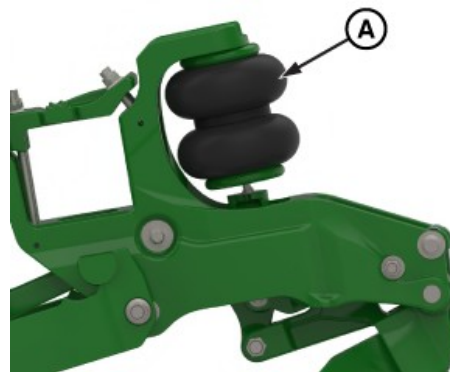
CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

1. Park the planter on level ground.



CQ1452075—UN—25MAR26

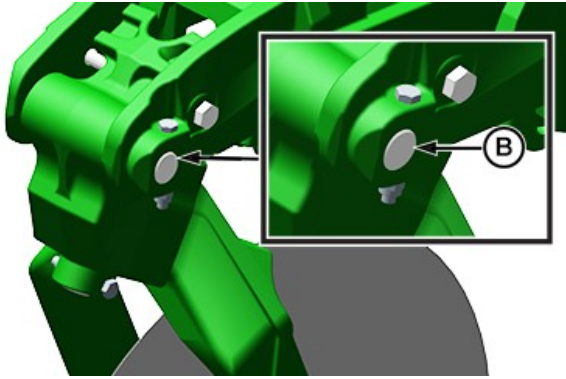
Mechanical Coulter Spring



CQ1452074—UN—25MAR26

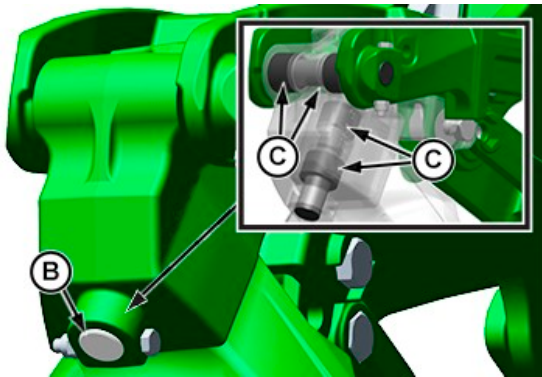
Pneumatic Coulter Spring

2. Reduce coulters spring (A) pressure.



Horizontal Pin

CQ1372771—UN—17JUL24



Vertical Pin

CQ1379443—UN—11OCT24

3. Check the end play between pins (B) and bushings (C) by shaking the coulter. (For more information see Section 287—Service-Pneumatic Downforce (PDF) System—If Equipped—Replace the Pneumatic Downforce System Spring Linkage Bushing Wear and Section 288—Service-Mechanical Downforce System—If Equipped—Replace the Mechanical Downforce System Spring Linkage Bushing Wear).

FHSSYU9,1774292355319-19-16APR26

Check Chisel Tip Wear

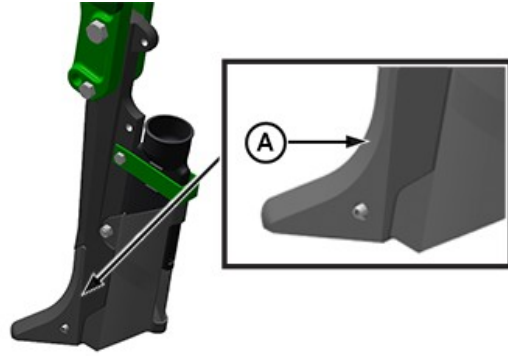
Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks with the planter raised.

1. Park the planter on level ground.
2. Raise planter.



Chisel Tip

CQ1358752—UN—22FEB24

3. If equipped with chisel-type fertilizer furrow opener, check wear on chisel tip (A).
4. Repeat the procedure for all the row units.
5. If necessary, replace it.

a3rfgg,1706016971672-19-18JUL24

Replace Chisel Tip

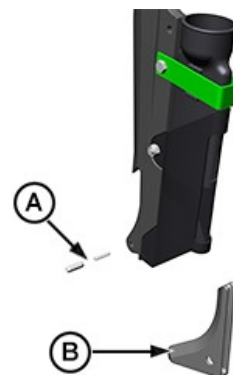
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks with the planter raised.

1. Park planter on level ground.
2. Raise planter.



CQ1358650—UN—22FEB24

3. If equipped with chisel-type fertilizer furrow opener, remove spring pin (A).
4. Replace chisel tip (B).

a3rfgg,1706017026099-19-18JUL24

Check Double Disk Blade Bearings

Perform this service at the start of the season.

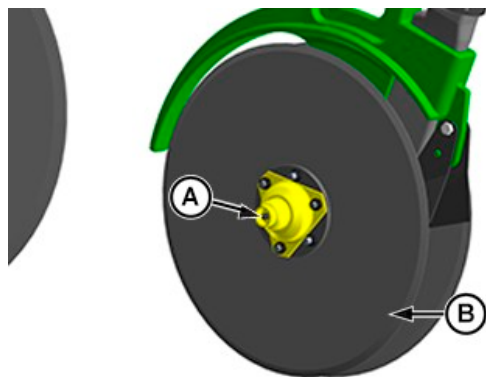
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.

1. Park the planter on level ground.



CQ1364247—UN—10OCT24

2. To check the condition of the double disk blade bearings (A), lift the planter and rotate the disk blade (B).

IMPORTANT: Bearings must not be replaced if the disks are heavy to turn or producing small noises. These are expected behaviors.

3. Check if the disks are fully locked or have excessive end play. Replace the bearings, if needed.
4. Repeat the procedure for all the row units.

a3rfggt,1720187623834-19-05JUL24

Lubricate the Fertilizer Double Disk Bearings

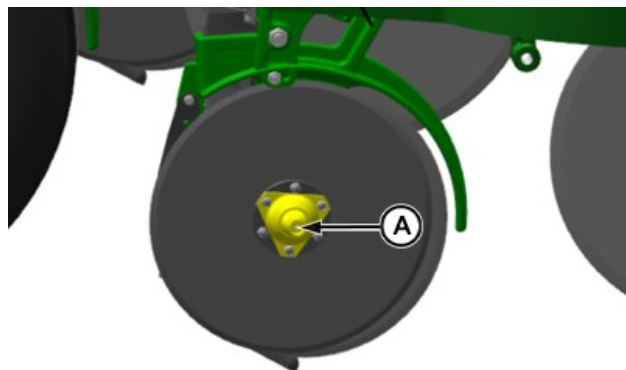
Perform this service every 50 hours.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: After preparing the planter for any maintenance, adjustment, or check, set the tractor's park brake, turn off the engine, and remove the key. If the procedure is done with the machine uncoupled from the tractor, immobilize it by placing locking wedges under all wheels. In addition, install the jackstand appropriately.



CQ1365249—UN—24APR24

NOTE: If necessary, replace damaged grease fittings.

1. Thoroughly clean all the grease fittings.
2. Lubricate the double disk bearings grease fitting (A).
3. Apply grease on all the corresponding grease fittings from the planter.

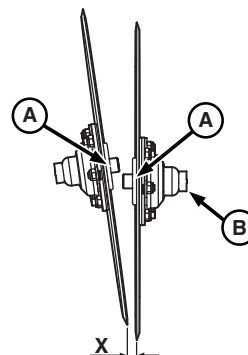
NOTE: See the correct grease in Lubricant section.

uqtm1iv,1713965027618-19-24OCT24

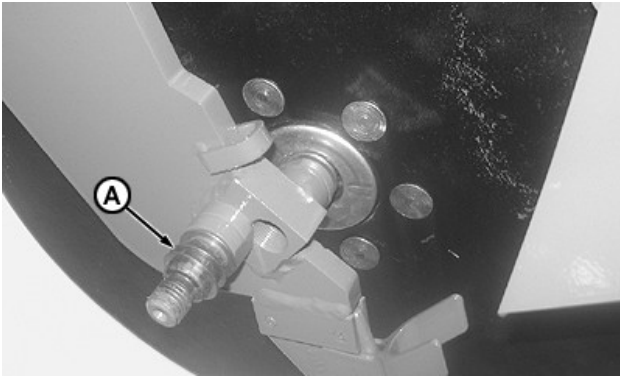
Check and Adjust the Double Disk Blade

Perform this service at the start of the season, or as required.

Make sure to comply with all the safety conditions before servicing.



CQ269010—UN—24MAR06



CQ252210—UN—21SEP05

NOTE: Offset disk furrow openers suffer wear during operation. Keep disks adjusted in a way they slightly touch each other.

1. Remove disks by loosening the nuts (B).
2. Remove the necessary amount of the washers (A) so that the disks are adjusted.

NOTE: After performing the adjustment, it must be a distance (X) between the disks in order to turn disks without major effort.

kp318th,1728579175632-19-10OCT24

Check the Double Disk Blade Scrapers

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

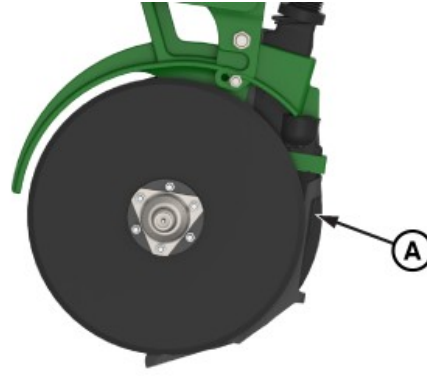
CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks on the lift cylinders when performing maintenance, adjustments, or checks with the planter raised.

CAUTION: Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.

Inspect the Scrapers

Park the planter on level ground.



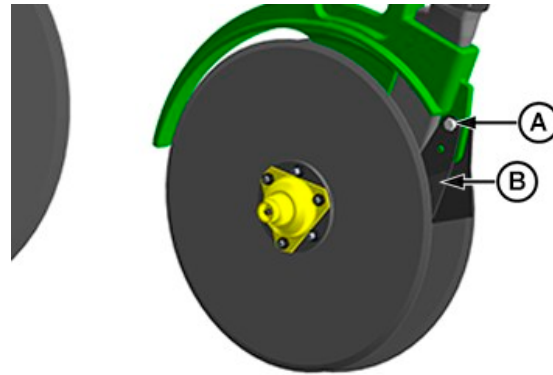
CQ1450549—UN—13MAR26

Check External Scrapers

Check scrapers (A) for wear or damage, and replace it if necessary.

Replace the Scrapers

1. Park the planter on level ground.



CQ1364251—UN—10OCT24

2. Remove screw and nut (A). Remove scrapers (B).

Specification

Screw—Torque. 30 N·m
(22 lb·ft)

3. Replace the scrapers (B) as necessary.

a3rfggt,1706636283622-19-16MAR26

Service—Planting Unit—Double Disk Blade

Check Double Disk Blade Bearings

Perform this service at the start of the season.

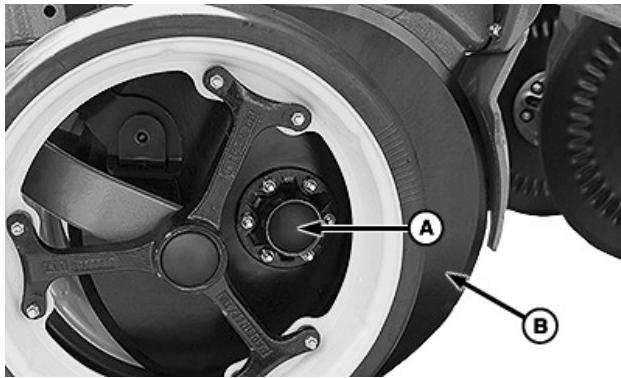
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: After preparing the planter for any maintenance, adjustment, or check, set the tractor's park brake, turn off the engine, and remove the key. If the procedure is done with the machine uncoupled from the tractor, immobilize it by placing locking wedges under all wheels. In addition, install the jackstand appropriately.

1. Park the planter on level ground.



BM029286—UN—06NOV18

2. To check the condition of the double disk blade bearings (A), lift the planter and rotate the disk blade (B).

IMPORTANT: Bearings must not be replaced if the disks are heavy to turn or producing small noises. These are expected behaviors.

3. Check if the disks are fully locked or have excessive play. Replace the bearings, if needed.

NOTE: If equipped with shielded bearings, see Install Double Disk Blade Bearings (If Equipped with Shielded Bearings) procedure in this section.

4. Repeat the procedure for all the row units.

a3rfggt,1706019145467-19-24OCT24

Check and Adjust the Double Disk Blade (ExactEmerge and MaxEmerge 5e EmergePro Only)

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

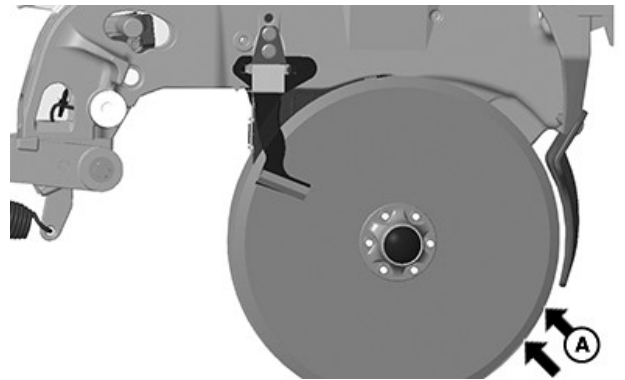
CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on the planter when it is raised.

CAUTION: Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.

Inspect the Double Disk Blades

1. Park the planter on level ground.



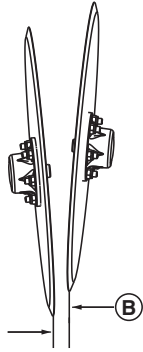
BM028688—UN—13MAR19

2. For aligned disks, inspect the contact area (A).
 - a. Insert two business cards (or similar items) between the double disk blade opening and gently slide the cards together until the blade contact area is reached.
 - b. Measure the distance between the business cards and compare the measurement to the specification.

Specification

Blade Edge—Contact Area. 15—35 mm
(0.6—1.4 in)

- c. If the contact area does not fall within the specifications, adjust the double disk blade.

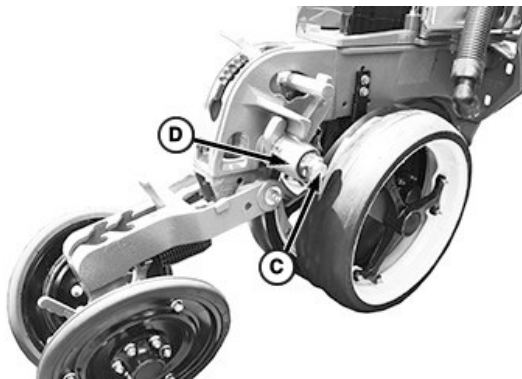


BML047151—UN—14AUG23

3. For offset disks, check if gap (B) between disks is according to specification.

Specification

Gap (B)—Clearance. 0.5—1 mm
(0.02—0.04 in)



BML047152—UN—14AUG23

4. Remove the screw (C), the pivot arm (D), and the depth gauge wheel.

5. Inspect the double disk blades for wear or damage.

Measure the blade diameter and compare that to the specification. If the diameter is below the specification, if the beveled edge is worn away, or if significant damage is apparent, replace the blades.

Specification

Opener Blades—Minimum
Diameter. 355 mm
(14 in)

Adjust the Play Between Double Disk Blade



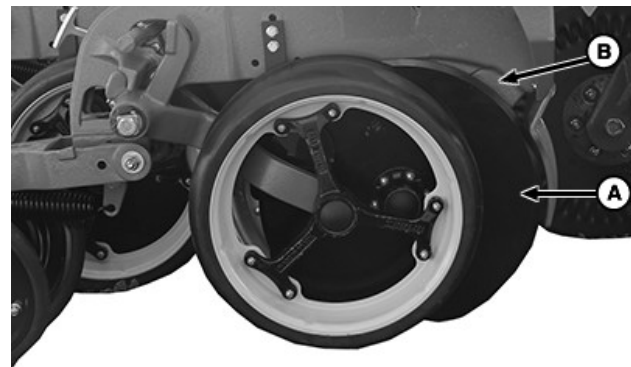
CQ1379479—UN—11OCT24

Centered Blades



CQ1379480—UN—11OCT24

Blades Not Centered

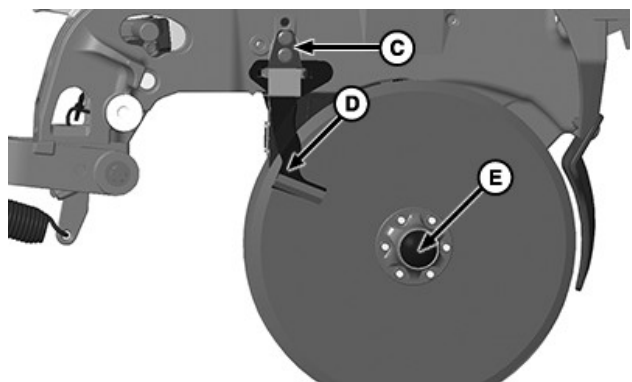


BML020612—UN—30APR21

1. Determine the adjustment required. View the blades from the front of the row unit.

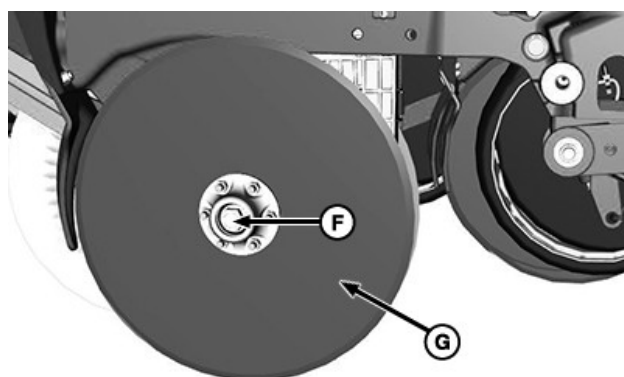
- If the blades are centered, remove one blade to adjust the contact area.
- If the blades are not centered, adjust the blade that is furthest (A) from the row unit (B).

IMPORTANT: Avoid spindle damage. The nut on the left-hand side of the row unit has left-hand side threads.



BML020614—UN—30APR21

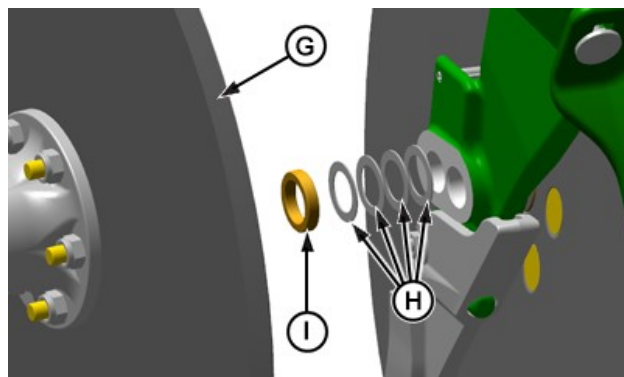
2. Remove screws (C) and scraper (D).
3. Remove cap (E).



BML020615—UN—30APR21

4. Remove screw (F) and blade (G).

NOTE: It is recommended to replace the protection case, in order to avoid dirt from entering in the bearings.



CQ1349103—UN—12SEP23

5. The disks have four shims (H) and one spacer (I) on each side. To make adjustments, it is recommended to remove one shim (H) at a time, and alternating the sides.

NOTE: While blade (G) is removed, inspect all of the components between the blades for wear and damage.

6. Install blade (G), inspect the adjustment, and repeat it as needed.
7. Tighten the blade nut to specification.

Specification

Row Unit Shank—Blade
Nut—Torque. 250 N·m
(184.4 lb·ft)

8. Adjust the depth gauge wheels. (See Adjust the Depth Gauge Wheels in Service—Planting Unit—Depth Gauge Wheels section.)
9. Tighten the pivot arm screws to specification.

Specification

Pivot Arm Screw—Torque. 280 N·m
(206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the pivot arm screws. See more information at Special Tool for Tightening Planter Screws in the section Accessories and General Equipment.

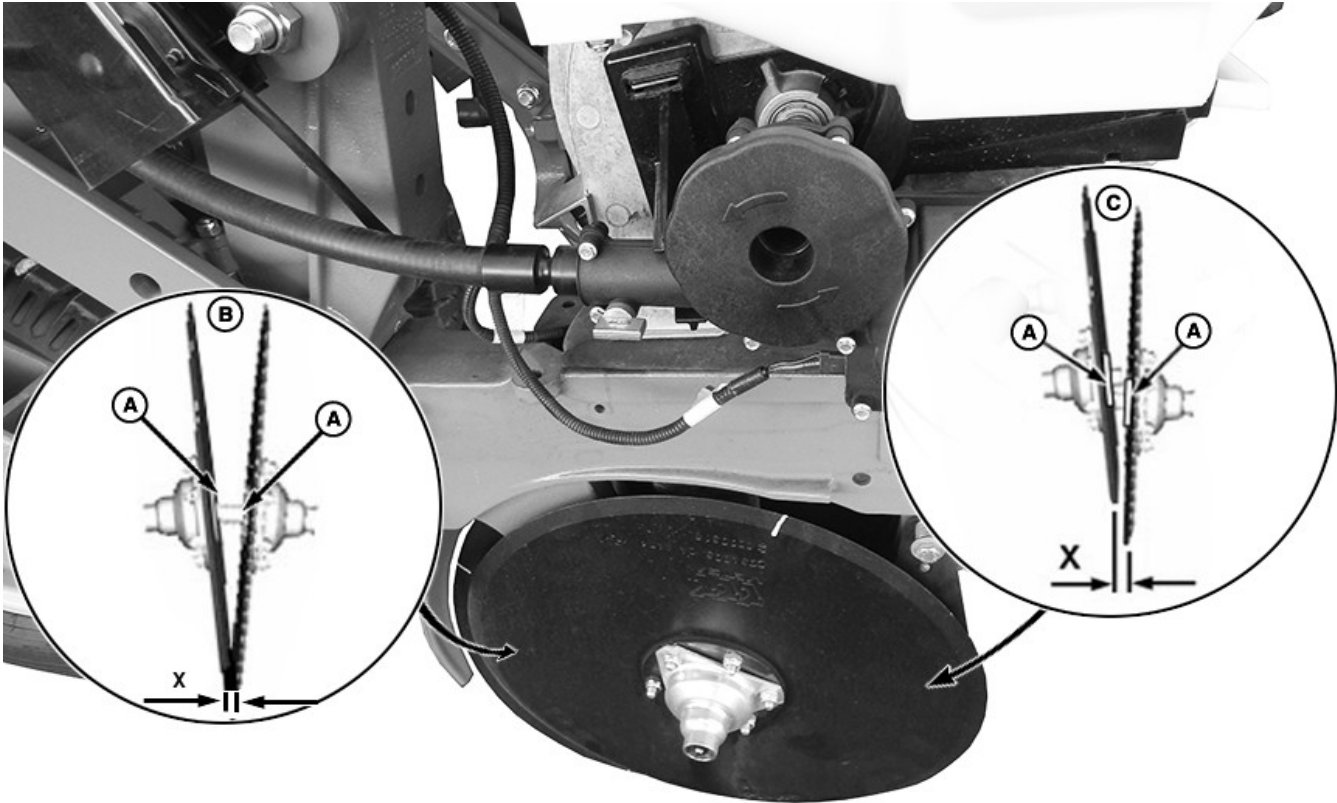
E443CH7,1750704312251-19-01,JUL25

Check and Adjust the Double Disk Blade (MaxEmerge 5e Offset Only)

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

- CAUTION:** Avoid serious injury or death. Properly support the machine.
- CAUTION:** Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on the planter when it is raised.
- CAUTION:** Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.



Offset Disks (C)

Furrow opener disks must maintain a slight contact. If necessary, adjust as follows:

1. Remove the furrow opener seed disks by removing nuts.
2. Remove the necessary amount of the washers (A) so that the disks are adjusted as specified. Use a feeler gauge to check distance (X).

Specification

Distance (X)—Measurement 0.5—1 mm
(0.02—0.03 in)

Concentric Disks (B)

1. In this case, it should be direct contact between the two disks to increase soil attack and prevent earth from entering between disks.
2. Place disk sustaining shaft in concentric disk position. Make sure that there is slight contact between disks.

NOTE: Excessive contact between disks would lead to premature wear.

Specification

Furrow Opener Seed Disk
Nut—Torque 120—150 N·m
(88—110 lb·ft)

Check the Double Disk Blade Scrapers (ExactEmerge and MaxEmerge 5e EmergePro Only)

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks on the lift cylinders when performing maintenance, adjustments, or checks with the planter raised.

1. Park the planter on level ground.

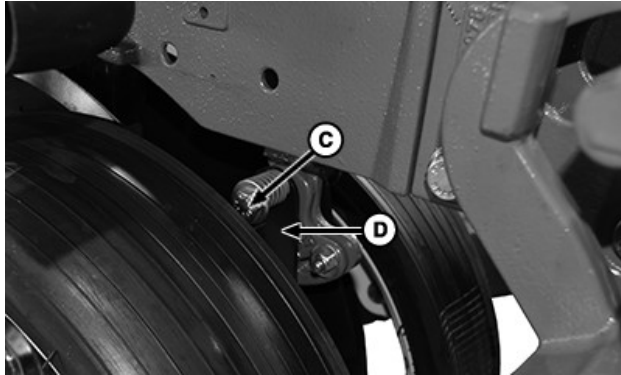


2. Loosen the screw (A).

E443CH7,1750704505128-19-01JUL25

BM028691—UN—30OCT18

- Remove the pivot arm (B) and depth gauge wheel (C).

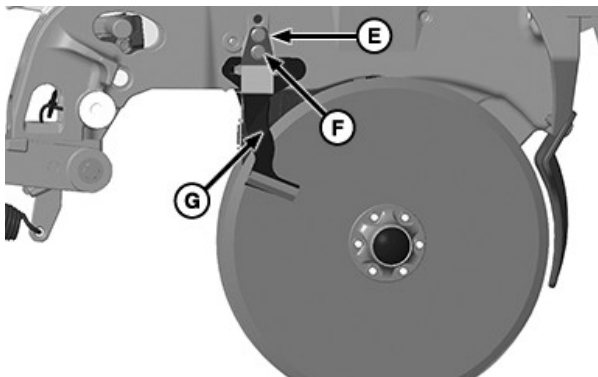


BM029831—UN—01NOV18

- Remove screw and spring (C), and replace internal scrapers (D), if necessary.

NOTE: Internal scraper (D) must be replaced when it does not ensure contact with the disk or it is worn. It is also recommended to replace the scraper pressure spring (C).

NOTE: This procedure is applied only to MaxEmerge 5e.



BM029832—UN—26NOV18

- Remove screws (E) and (F), and replace external scrapers (G).

NOTE: Replace external scraper (G) when it is not contacting the disk, or when it is worn.

- To assemble, follow the procedure in reverse order. Tighten the screws as specified:

Specification

Screw (E)—Torque.	30 N·m (22 lb·ft)
Screw (F)—Torque.	15 N·m (133 lb·in)
Screw (A)—Torque.	280 N·m (206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.

a3rfgt,1706019144950-19-24OCT24

Check the Double Disk Blade Scrapers (MaxEmerge 5e Offset Only)

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

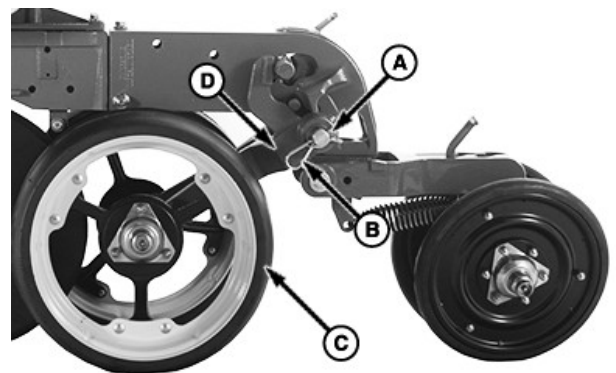
⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

⚠ CAUTION: Always use the service locks on the lift cylinders when performing maintenance, adjustments, or checks with the planter raised.

⚠ CAUTION: Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.

Inspect the Scrapers

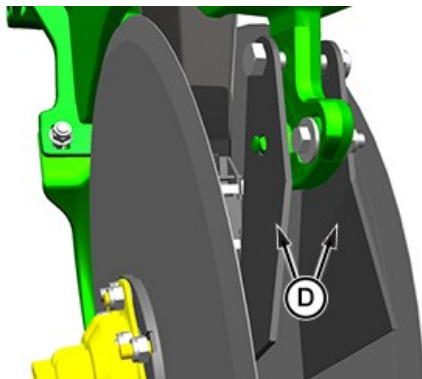
- Park the planter on level ground.



BM030409—UN—18JUN19

- Loosen screw (A).

- Remove depth gauge wheels (C) with depth gauge wheels arms (B) to access the double disk. (See **Replace Depth Gauge Wheel Bearings** in Service-Planting Unit-Depth Gauge Wheels section.)



CQ1362226—UN—21MAR24

4. Check scrapers (D) for wear or damage, and replace, if necessary.
5. To assemble, follow the procedure in reverse order.

E443CH7,1750704639793-19-01JUL25

Install Double Disk Blade Bearings (If Equipped with Shielded Bearings)

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

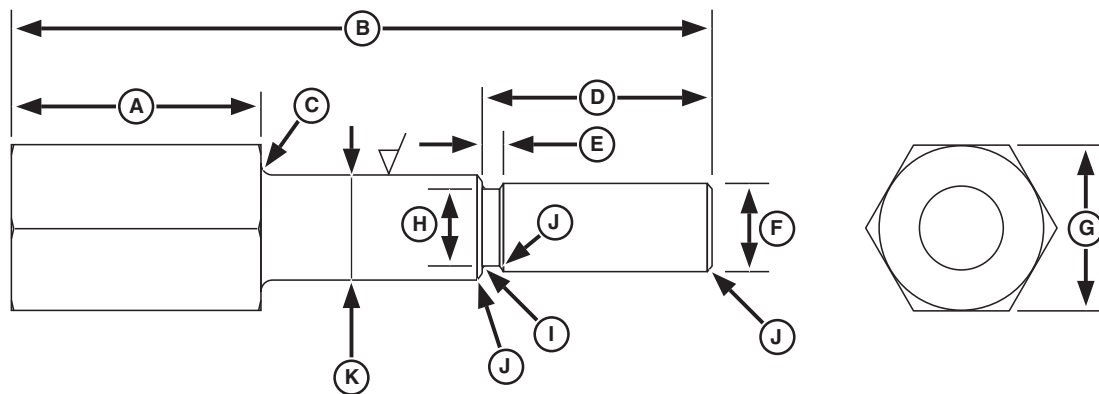
⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

⚠ CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on the planter when it is raised.

⚠ CAUTION: Avoid injury from sharp edges on the blades. Wear protective gloves and handle the blades carefully.

Manufacturing of Special Tool

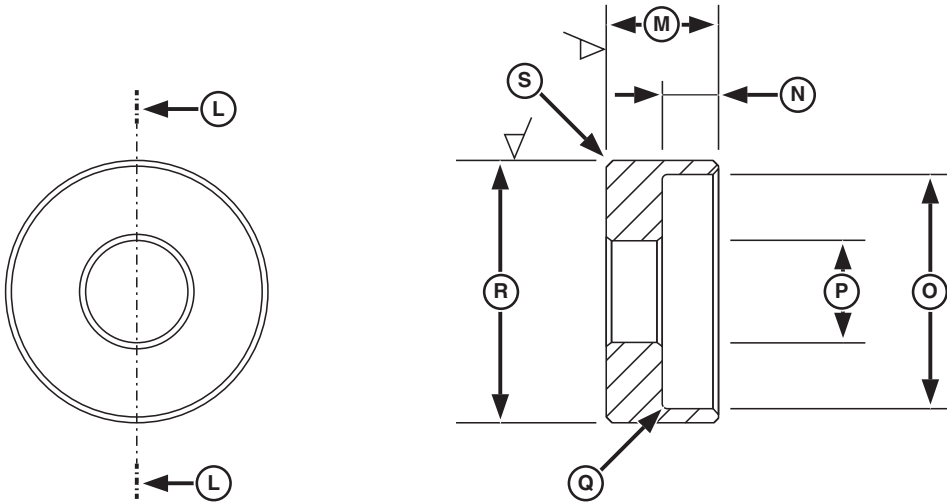
To carry out the correct assembly of the bearing, manufacture the special tool. Use SAE 1045 steel or similar and follow the dimensions indicated.



A—60.00 mm (2.3622 in) $\pm$ 0.5 mm (0.0197 in)
 B—168.00 mm (6.6142 in) $\pm$ 0.5 mm (0.0197 in)
 C—Radius 2.00 mm (0.0787 in) $\pm$ 1.00 mm (0.0394 in)
 D—55.00 mm (2.1653 in) $\pm$ 0.5 mm (0.0197 in)
 E—5.00 mm (0.1969 in) $\pm$ 0.5 mm (0.0197 in)
 F—M16 x 2.00 mm (0.0787 in)

G—30.00 mm (1.1811 in) Hexagonal
 H—Diameter 13.50 mm (0.5315 in) $\pm$ 1.00 mm (0.0394 in)
 I—Radius 1.00 mm (0.0394 in)
 J—Chamfer 1.00 mm (0.0394 in) x 45°
 K—Diameter 19.85 mm (0.7815 in) $\pm$ 0.02 mm (0.0008 in)

BML013460—UN—21MAR22



BML013461—UN—22MAR22

L—Section

M—20.00 mm (0.7874 in) $\pm$ 0.5 mm (0.0197 in)

N—10.00 mm (0.7937 in) $\pm$ 0.5 mm (0.0197 in)

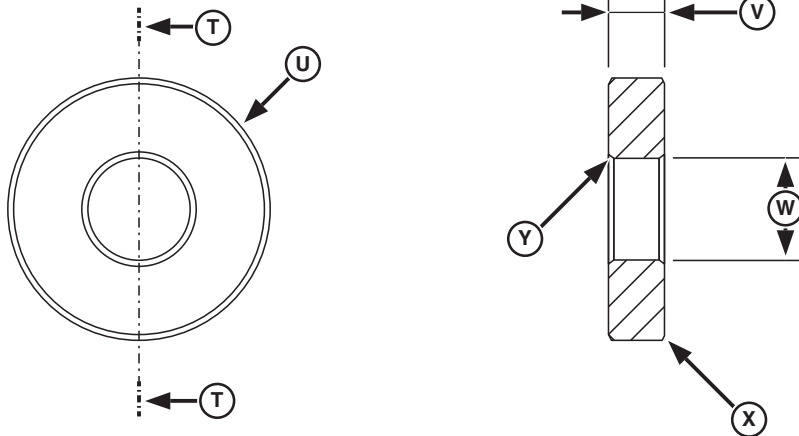
O—Diameter 42.00 mm (1.6535 in) $\pm$ 0.1 mm (0.0039 in)

P—Diameter 18.00 mm (0.7087 in) $\pm$ 0.2 mm (0.0079 in)

Q—Radius 1.00 mm (0.0394 in)

R—Diameter 46.80 mm (1.8425 in) $\pm$ 0.1 mm (0.0039 in)

S—5x Chamfer 1.00 mm (0.0394 in) x 45°



BML013462—UN—22MAR22

T—Section

U—Diameter 48.75 mm (1.9193 in) $\pm$ 0.5 mm (0.0197 in)

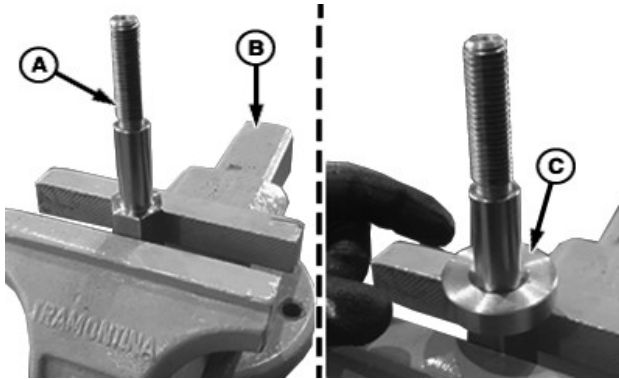
V—12.50 mm (0.4921 in) $\pm$ 0.5 mm (0.0197 in)

W—Diameter 20.00 mm (0.7874 in) $\pm$ 0.1 mm (0.0039 in)

X—Chamfer 1.00 mm (0.0394 in) x 45°

Y—2x Chamfer 3.00 mm (0.1181 in) x 45°

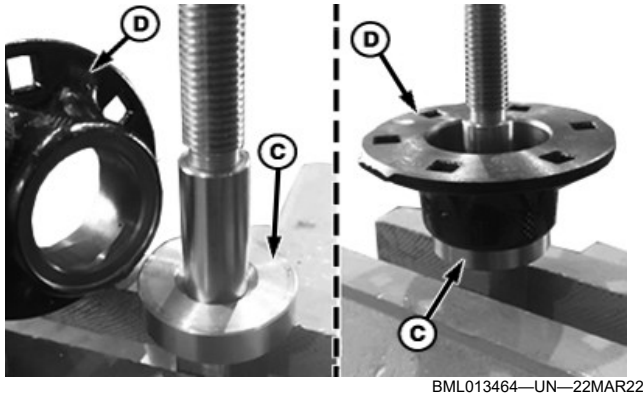
Install the Bearings



1. Install pin (A) in vise (B).

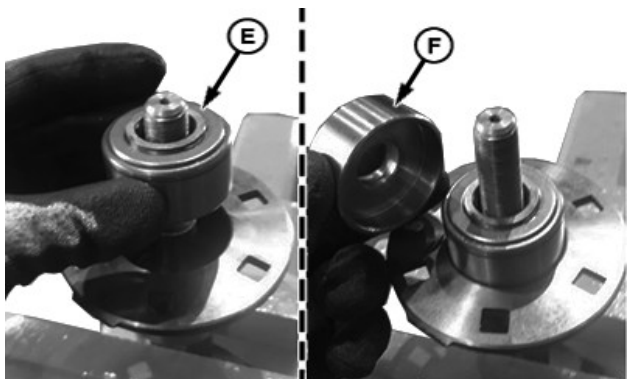
NOTE: Use a vise (B) or similar tool to create the support point.

2. Install the washer (C).

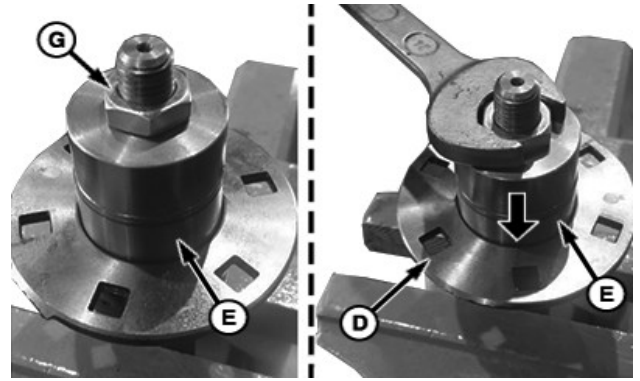


3. Install the hub (D) on washer (C).

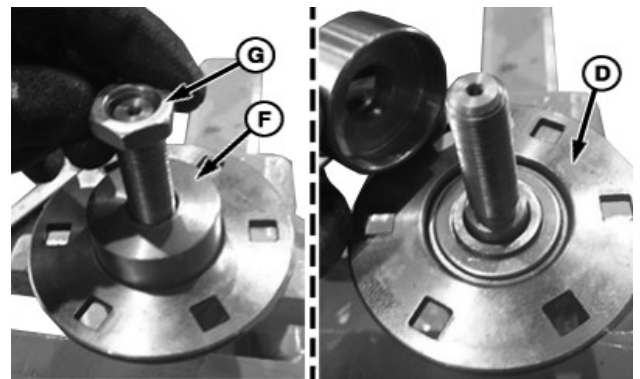
NOTE: Ensure the hub (D) is correctly seated in the washer (C).



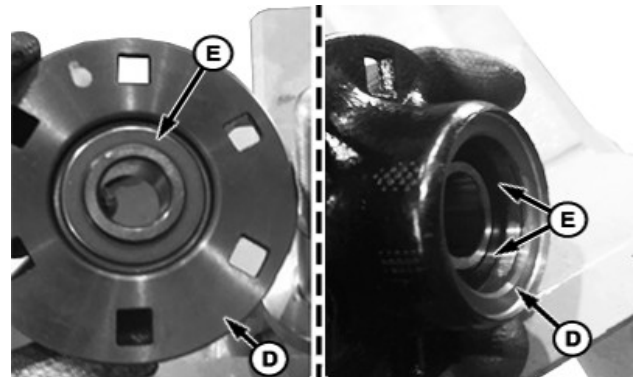
4. Install the bearing (E) with the shield facing up.
5. Install the cover (F).



6. Install the nut (G).
7. Tighten nut (G) until bearing (E) moves into hub (D).



8. Remove the nut (G) and cover (F).
9. Remove the hub (D) with the bearing.



10. Ensure the bearing (E) is correctly aligned in the hub (D).

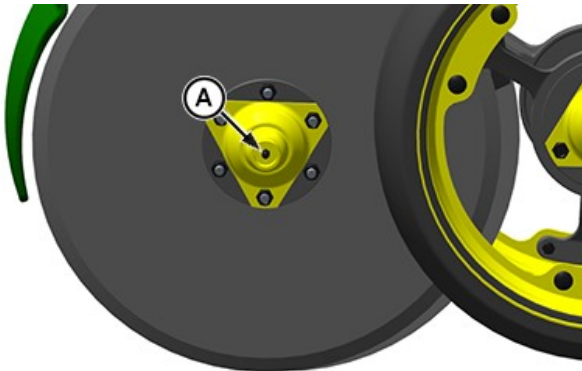
a3rfggt,1706019144672-19-23JAN24

Lubricate Double Disk Blade Hub (MaxEmerge 5e Offset Only)

Perform this service at every 50 hours.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Park the planter on a level ground, and properly support the machine to avoid serious injury or death.



CQ1372317—UN—22JUL24

NOTE: If necessary, replace damaged grease fittings.

1. Thoroughly clean all the grease fittings.
2. Lubricate the double seed disk bearings (A).
3. Apply grease on all the corresponding grease fittings from the planter.

NOTE: See correct grease in Lubrication section.

E443CH7,1750704656154-19-01JUL25

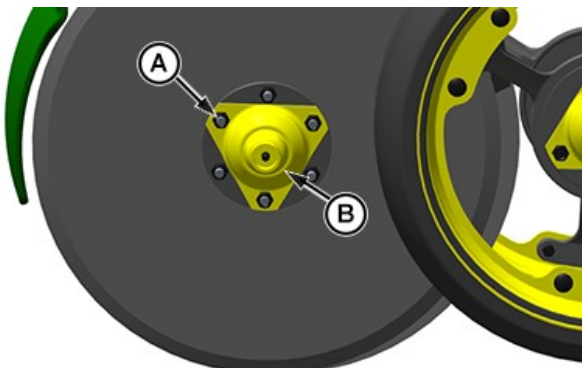
Replace Double Disk Blade Bearings (MaxEmerge 5e Offset Only)

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

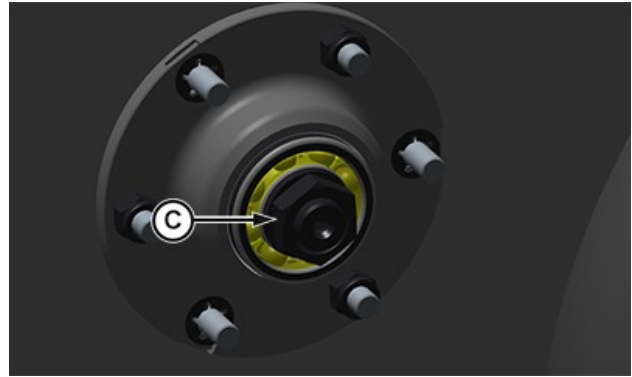
CAUTION: Position the safety locks on wheel hydraulic cylinders before carrying out any task.

1. Raise the machine so that seed disks are not touching the ground.



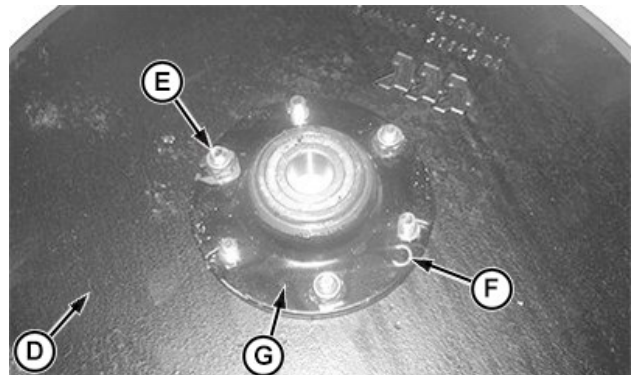
CQ1372315—UN—22JUL24

2. Remove nuts (A) and cover (B).



CQ1372316—UN—22JUL24

3. Remove nut (C).
4. Remove the double disk blade (D) using disk disassembly tool. (See Disk Disassembly Tool in Accessories and General Equipment section.)

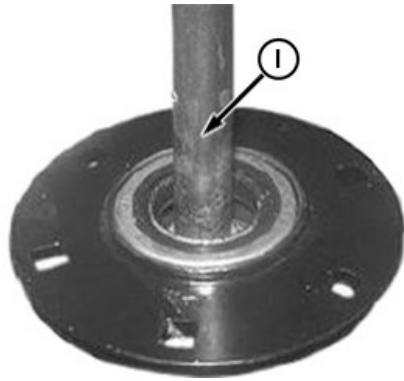


CQ1372341—UN—23JUL24

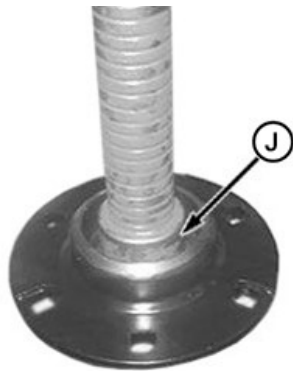
5. Remove nuts (E) and rings (F).
6. Remove hub (G) from disk (D).
7. Place hub assembly onto a suitable workbench.



CQ1372342—UN—22JUL24

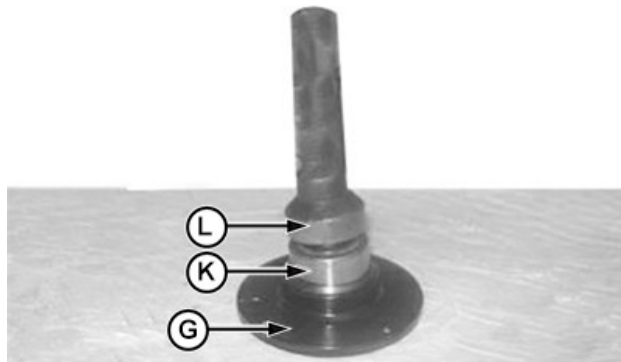


CQ1372343—UN—22JUL24



CQ1372345—UN—23JUL24

8. Remove cover (H).
9. Remove the bearing using special tool (I).
10. Remove retainer (J).



CQ1372346—UN—23JUL24

11. Install a new bearing (K) to hub (G) using tool (L).
12. Install retainer (J) and cover (H) using the tool .

IMPORTANT: Install seal with the lip side toward the inner side of hub, as shown.

13. Install the hub (G) to the disk (D) together with the rings (F) and nuts (E).

Specification

Disk Hub Nut—Torque. 40 N·m
(29.5 lb·ft)

14. Install the disk assembly in reverse order of removal.

E443CH7,1750705129126-19-01JUL25

Service—Planting Unit—Depth Gauge Wheels

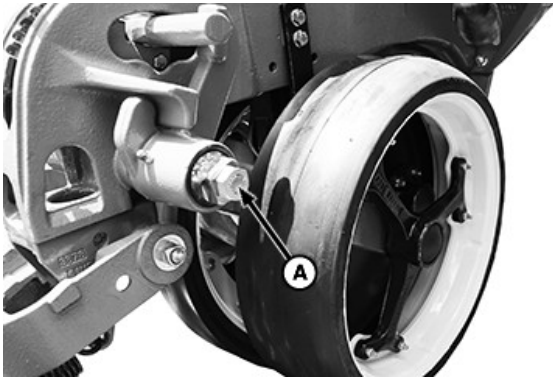
Check the Depth Gauge Wheel Pivot Arm Torque

Perform this service at the start of the season and at first 10 hours of operation.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



BM029883—UN—20NOV18

2. Check torque of the pivot arm screw (A).
3. If necessary, tighten to specification.

Specification

Pivot Arm Screw—Torque. 280 N·m
(206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section **Accessories and General Equipment**.

4. Repeat this procedure for all row units.

a3rfgg,1706020857628-19-18JUL24

Check Depth Gauge Wheel Bearings

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: After preparing the planter for any maintenance, adjustment, or check, set the park brake, turn off the engine, and remove the key. If the procedure is done with the machine uncoupled from the tractor, immobilize it by placing locking wedges under all wheels. In addition, install the jackstand appropriately.

Inspect the Depth Gauge Wheel Bearings

1. Park the machine on level ground.
2. Raise the planter.



BM029285—UN—06NOV18

3. To check the condition of the depth gauge wheel bearings (A), lift the planter and rotate the depth gauge wheel (B).

IMPORTANT: Bearings must not be replaced if the wheels are heavy to turn or producing small noises. These are expected behaviors.

4. Check if the wheels are fully locked or have excessive play. Replace the bearings, if needed.

NOTE: If equipped with shielded bearings, see **Install Depth Gauge Wheel Bearings (If Equipped with Shielded Bearings)** procedure in this section.

Replace the Depth Gauge Wheel Bearings

1. Park the machine on level ground.
2. Raise the planter.



BML020617—UN—30APR21

- Remove the cap (A).



BML020618—UN—30APR21

- Remove the screw (B).



BML020619—UN—30APR21

- Remove the wheel (C) and the bearing (D).

NOTE: If equipped with shielded bearings, see *Install Depth Gauge Wheel Bearings (If Equipped with Shielded Bearings)* procedure in this section.

- Replace the bearing (D) if necessary.
- To assemble, follow the procedure in reverse order.
 - Tighten the screw (B) to specification:

Specification

Screw—Torque. 250 N·m
(184 lb·ft)

- Repeat the procedure on both sides of each row, as necessary.

a3rfgg, 1706020857565-19-12JUL24

Lubricate the Depth Gauge Wheel Arms (MaxEmerge 5e without offset and Exact Emerge)

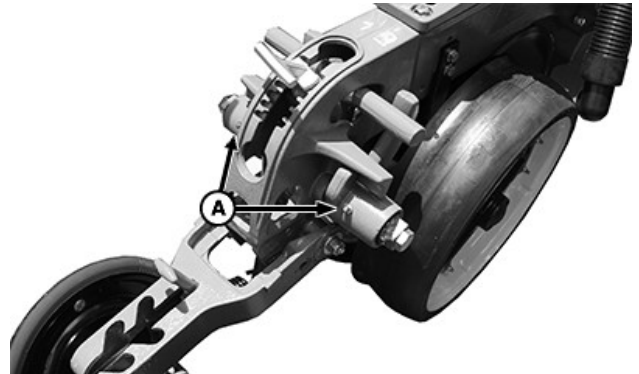
Perform this service at every 100 hours of operation or daily.

NOTE:

In severe moisture conditions, or locking arm movement, reduce the lubrication interval to 50 hours or less.

CAUTION: Avoid serious injury or death. Properly support the machine.

- Park the planter on level ground.



BM028669—UN—06NOV18

- Thoroughly clean all the grease fittings of the depth gauge wheel arms.

NOTE: If necessary, replace damaged grease fittings.

- Lubricate the grease fitting (A) of the depth gauge wheel arms on both sides of the row unit.
- Apply grease to all the corresponding grease fittings on the planter.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see *Multipurpose Extreme Pressure (EP) Grease in Lubrication* section.

a3rfgg, 1706020857522-19-18JUL24

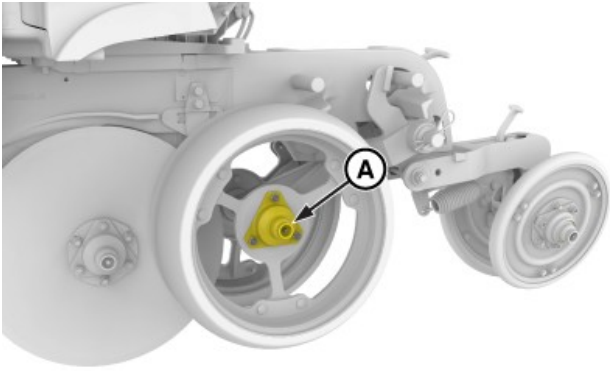
Lubricate the Depth Gauge Wheel Hub (MaxEmerge 5e Offset Only)

Perform this service at every 50 hours of operation.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

- Park the planter on level ground.



CQ1368315—UN—30MAY24

2. Thoroughly clean all the grease fittings of the depth gauge wheel hubs.

NOTE: If necessary, replace damaged grease fittings.

3. Lubricate grease fitting (A) of the depth gauge wheel hubs on both sides of the row unit.
4. Apply grease to all the corresponding grease fittings on the planter.

kp318th,1720792005078-19-12JUL24

Adjust the Depth Gauge Wheels

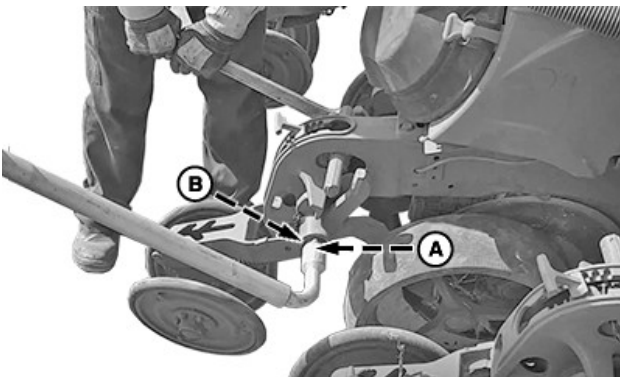
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

IMPORTANT: To prevent the buildup of soil or residue between the depth gauge wheels and the seed double disk, adjust the depth gauge wheels.



BML006972—UN—31MAY21

2. Loosen the screw (A) by approximately 1/2 turn.
3. Turn the bushing (B) counterclockwise to move depth

gauge wheel closer to seed double disk or clockwise to separate it.

NOTE: The depth gauge wheel must have a light contact with the seed double disk.

IMPORTANT: The depth gauge wheels and the seed double disk must be free to turn with minimal resistance.

IMPORTANT: Avoid excessive wheel wear. Do not overtighten the depth gauge wheels.

4. Tighten the screw (A) to specification.

Specification

Depth Gauge Wheel Screw	
(A)—Torque.	280 N·m (206 lb·ft)

NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.

5. Rotate the depth gauge wheel.



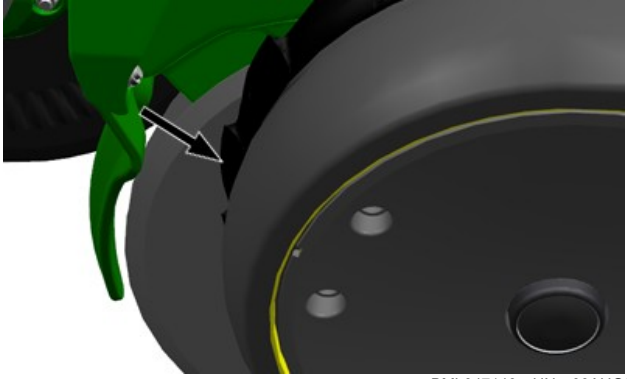
BM029828—UN—01NOV18

Without Scraper Rings

6. For gauge wheels without scraper rings, make sure that the wheel is slightly touching the disk or less than the maximum specification away from the blades at their closest approach.

Specification

Maximum Clearance Between	
Depth Gauge Wheel and seed	
double disk—Distance.	1.5 mm (1/16 in)



BML047140—UN—03AUG23

With Scraper Rings

7. For gauge wheels with scraper rings, make sure scraper rings are touching the disk, allowing the gauge wheels to move without being stuck on the disks.

h3ymaet,1691083907664-19-05SEP25

Install Depth Gauge Wheel Bearings (If Equipped with Shielded Bearings)

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

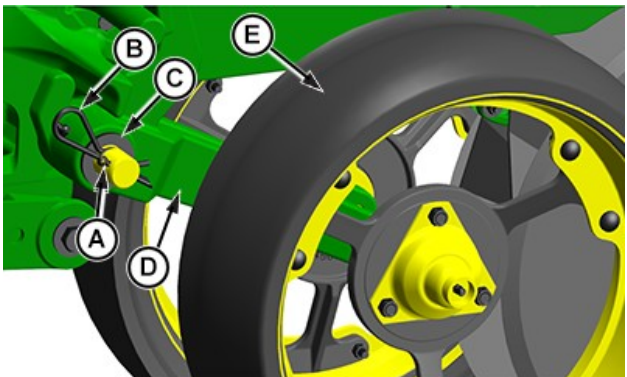
Follow the steps according to Install Double Disk Blade Bearings (If Equipped with Shielded Bearings) procedure in the Service—Planting Unit—Double Disk Blade section.

a3rfggt,1706021004965-19-23JAN24

Replace Depth Gauge Wheel Bearings (MaxEmerge 5e Offset Only)

Perform this service as required.

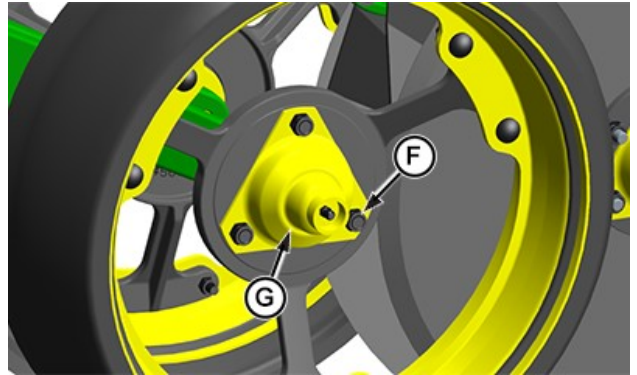
Make sure to comply with all the safety conditions before servicing.



CQ1372964—UN—22JUL24

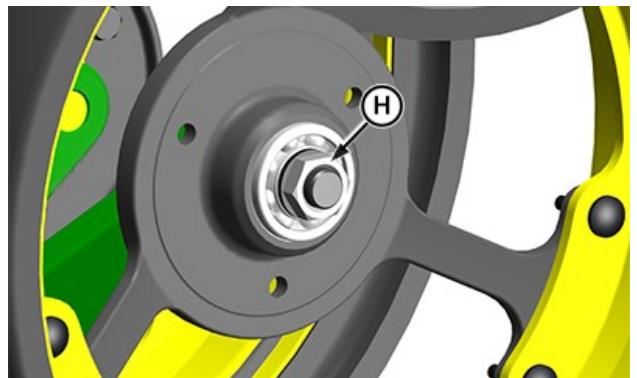
1. Remove pin (A) and (B).
2. Remove flat washer (C).

3. Remove pivot arm (D) and depth gauge wheel (E).



CQ1372965—UN—22JUL24

4. Remove screws and nuts (F)
5. Remove cover (G).



CQ1372966—UN—22JUL24

6. Remove shaft nut (H) and depth gauge wheel assembly from the arm.



CQ1372967—UN—22JUL24

7. Remove guard (I), seal (J), and washer (K) from the hub.
8. Remove shaft (L) and bearing (M) from the hub.
9. Replace bearing.
10. Install in reverse order of removal.

kp318th,1721302038315-19-18JUL24

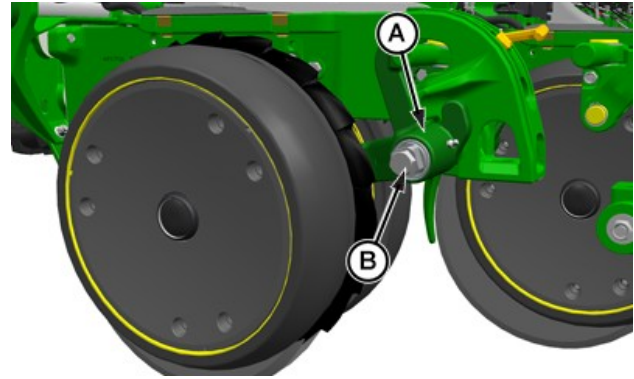
Check Scraper Rings (If Equipped)

Perform this service at the start of the season.

1. Place the planter on level ground.



BML047154—UN—14AUG23



BML047136—UN—03AUG23

2. Check if there is dirt accumulated on the scraper ring (A).
3. Check the condition of the scraper ring (A).
4. If necessary, replace the scraper ring. (See Remove and Install Scraper Ring (If Equipped) in this section.)

a3rfggt,1706021004916-19-12JUL24

Remove and Install Scraper Ring (If Equipped)

Perform this service as required.

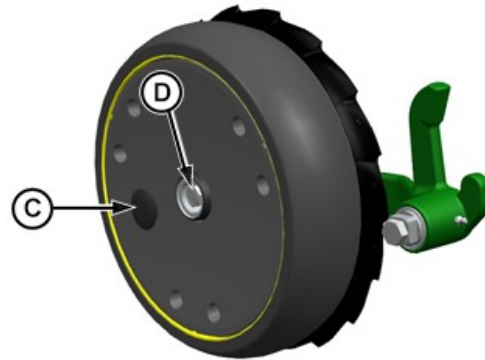
CAUTION: Avoid injury. The scraper rings have sharp edges. Wear protective gloves and handle them carefully.

IMPORTANT: Avoid machine damage. The scraper rings must be equipped without the double disks external scrapers. Make sure the external scrapers are not installed for this service.

NOTE: The scraper rings are an optional that are only necessary for planters working on muddy conditions to avoid mud build up between the double disks and the depth gauge wheels.

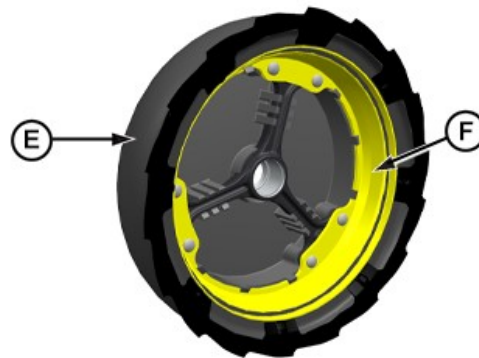
This procedure must be performed on both sides of each row unit.

1. Park the planter on level ground.
2. Remove the screw (B), the pivot arm (A), and the depth gauge wheel.



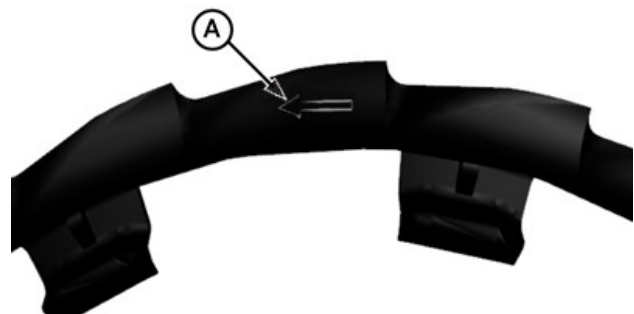
BML047138—UN—03AUG23

3. Remove cap (C) and screw (D).
4. Remove the depth gauge wheel from the pivot arm.
5. Remove the tire (E) from the wheel rim (F).



BML047149—UN—09AUG23

6. Remove the scraper ring.



CQ1348857—UN—12SEP23

A—Arrow

7. To install, make sure the arrow (A) that indicates the spin direction of the scraper ring is facing forward and follow procedure in reverse order.

h3ymaet, 1690996407660-19-15SEP23

Service—Planting Unit—Closing Wheels

Check Closing Wheel Bearings

Perform this service at the start of the season.

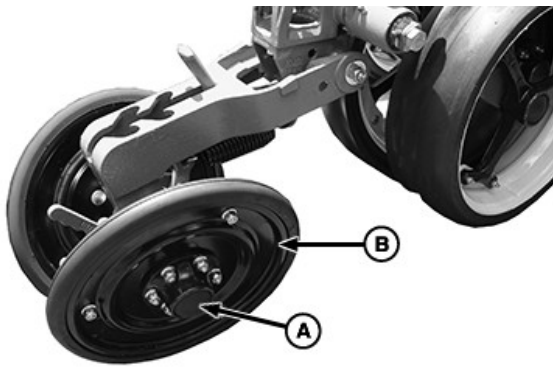
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks of the lift cylinders when performing maintenance, adjustments, or checks on a raised planter.

CAUTION: After preparing the planter for any maintenance, adjustment, or check, set the tractor's park brake, turn off the engine, and remove the key. If the procedure is done with the machine uncoupled from the tractor, immobilize it by placing locking wedges under all wheels. In addition, install the service locks appropriately.

1. Park the planter on level ground.



BM029287—UN—06NOV18

2. To check the condition of the closing wheel bearings (A), lift the planter and rotate the closing wheel (B).

IMPORTANT: Bearings must not be replaced if the wheels are heavy to turn or producing small noises. These are expected behaviors.

3. Check if the wheels are fully locked or with excessive play. Replace the bearings, if needed.

NOTE: If equipped with shielded bearings, see Install Closing Wheel Bearings (If Equipped with Shielded Bearings) procedure in this section.

4. Repeat the procedure for all the row units.

a3rfggt,1706026537574-19-24OCT24

Install Closing Wheel Bearings (If Equipped with Shielded Bearings)

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

Follow the steps according to Install Double Disk Blade Bearings (If Equipped with Shielded Bearings) procedure in the Service—Planting Unit—Double Disk Blade section.

N8XR12J,00006D0-19-30MAR22

Lubricate the Closing Wheels Hub (MaxEmerge 5e Offset Only)

Perform this service at every 50 hours.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1368316—UN—30MAY24

2. Thoroughly clean all the grease fittings of the closing wheel hubs.

NOTE: If necessary, replace damaged grease fittings.

3. Lubricate grease fitting (A) of the closing wheel hubs on both sides of the row unit.
4. Apply grease to all the corresponding grease fittings on the planter.

kp318th,1720804004361-19-12JUL24

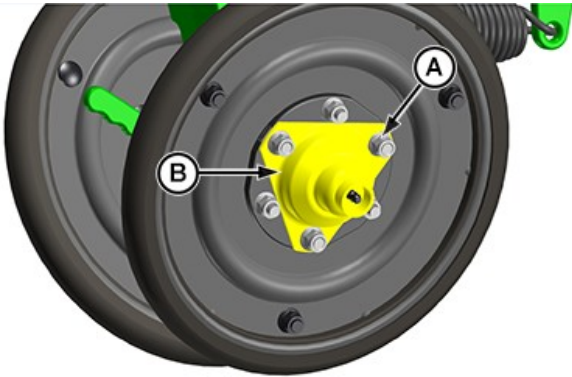
Replace Closing Wheel Bearings (MaxEmerge 5e Offset Only)

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Position the safety locks on wheel hydraulic cylinders before carrying out any task.

1. Remove bolts and nuts (A)
2. Remove cover (B).



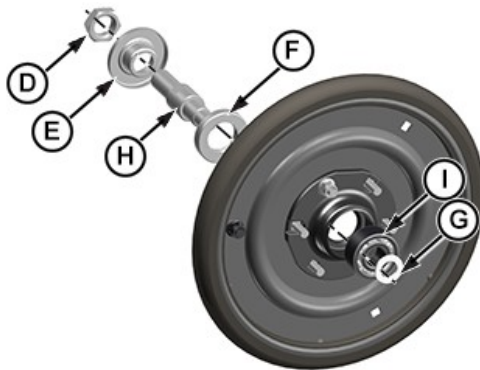
CQ1373366—UN—25JUL24

3. Remove shaft nut (C).



CQ1373367—UN—25JUL24

4. Loosen nut (D).



CQ1373368—UN—25JUL24

5. Remove guard (E), seal (F), and washer (G) from the hub.
6. Remove shaft (H) and bearing (I) from the hub.
7. Replace bearing.
8. Install in reverse order of removal.

E443CH7,1750705734407-19-01JUL25

Service—Planting Unit—Seed Meter and Hopper

Clean Seed Delivery System

Perform this service at the start of the season, or as required.

Make sure to comply with all the safety conditions before servicing.

Refer to Clean Out Seed Hoppers and Vacuum Metering Units in Operating the Central Commodity System section.

a3rfgg,1706027379625-19-11OCT24

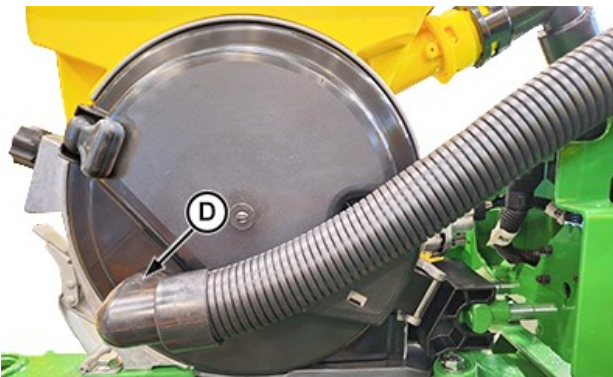
Clean Seed Tube—Only for MaxEmerge 5e

Perform this service at the start of the season, or as required.

Make sure to comply with all the safety conditions before servicing.

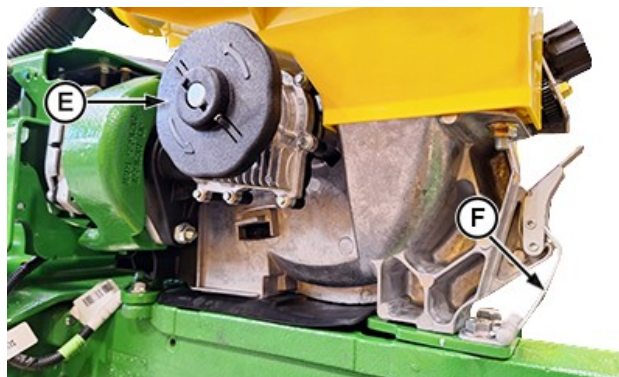
IMPORTANT: It is possible for dusty conditions or heavily treated seeds to cause an excessive buildup of dust and seed treatment inside the seed tubes that blocks the seed sensor light. When the sensor light becomes blocked, false low population counts or false low limit warnings appear.

For MaxEmerge 5e planters, periodically clean the seed tube to ensure uniform seed population. Proceed as follows to perform the cleaning:



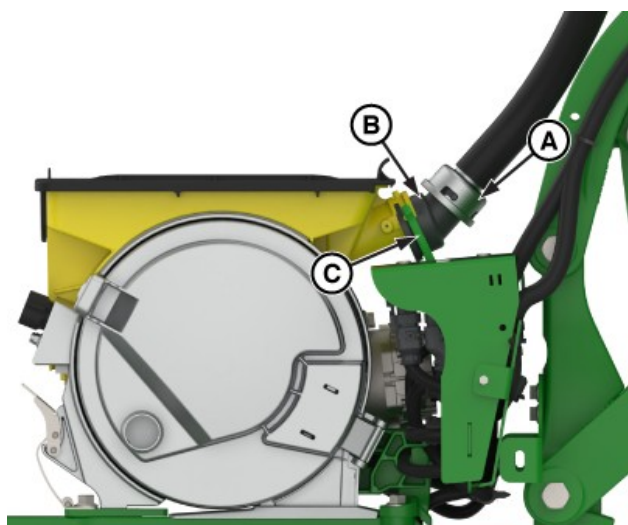
CQ1379704—UN—15OCT24

2. Remove vacuum hose (D).



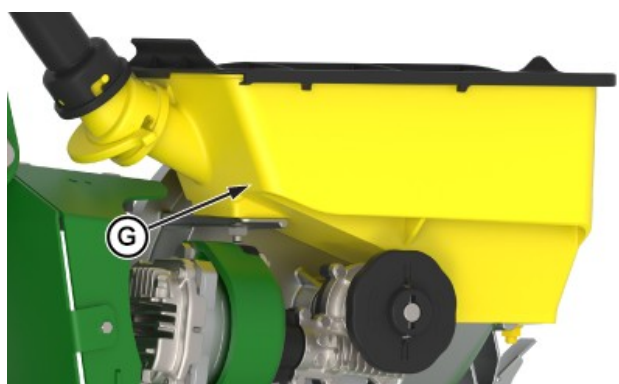
CQ1379705—UN—15OCT24

3. Push down latch (F).
4. Pull handle (E).



CQ1457184—UN—20APR26

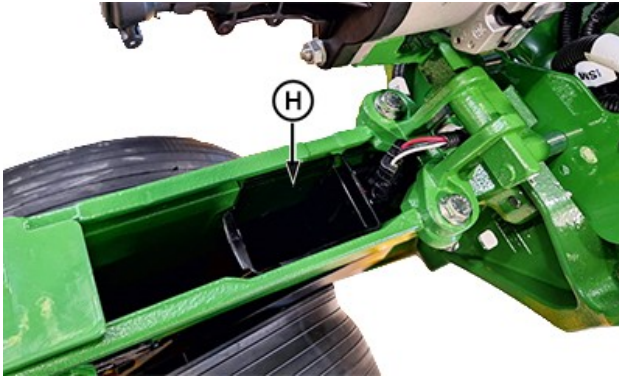
1. Rotate seed delivery hose counterclockwise until it unsnaps from the hopper neck (B). Pull off seed delivery hose (A).



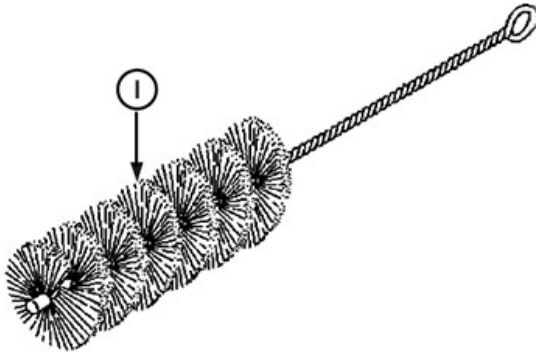
CQ1451759—UN—19MAR26

Meter Assembly(G)

1. While pulling handle (E), unlock meter assembly (G) from the row unit.



CQ1379606—UN—15OCT24



CQ1379607—UN—15OCT24

2. Clean seed tube (H) with a brush (I).

NOTE: Locate a brush (I) in the machine accessories. Clean brush (I) during the process to ensure that it is cleaning correctly.

3. Lower the seed meter and lock latch (F).

NOTE: Perform this procedure on all row units.

If moisture enters the seed tube during rain or when machine is washed, dust in the seed tubes turns to mud. If moisture is present or dry residue is difficult to remove with a dry brush, use mild detergent and water with brush. Allow interior of the seed tube surfaces to dry.

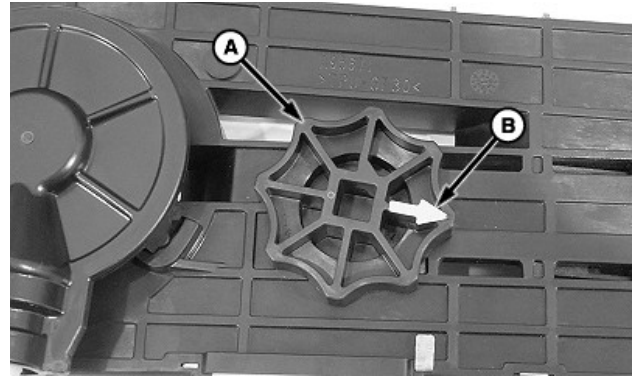
IMPORTANT: Do not plant again until interior surfaces of all the seed tubes are dry.

PS9EIDU,1773939684899-19-17APR26

Clean BrushBelt Cartridge—Only for ExactEmerge

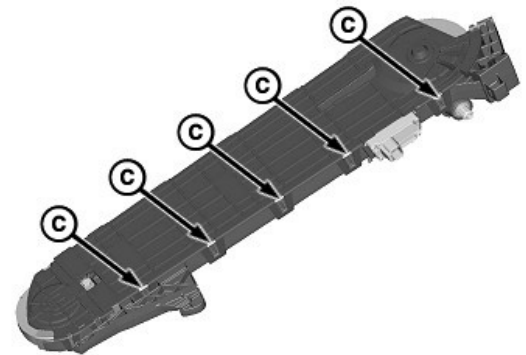
Perform this service at the start of the season, at every 50 hours, or as required.

Make sure to comply with all the safety conditions before servicing.



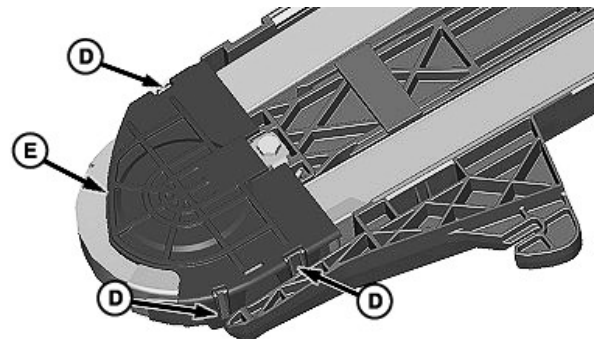
A79515—UN—03JAN14

1. Remove the BrushBelt cartridge. (See Remove and Install the BrushBelt Cartridge in Operating the Seed Meter—ExactEmerge section.)
2. Turn knob (A) 180° counterclockwise so that arrow (B) points towards the top of the BrushBelt cartridge.



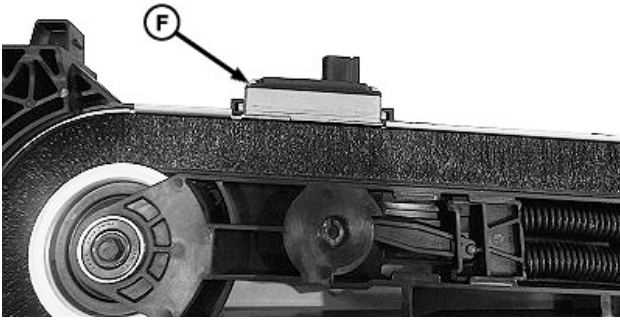
BM029319—UN—26APR18

3. Lift tabs (C) and remove cover.



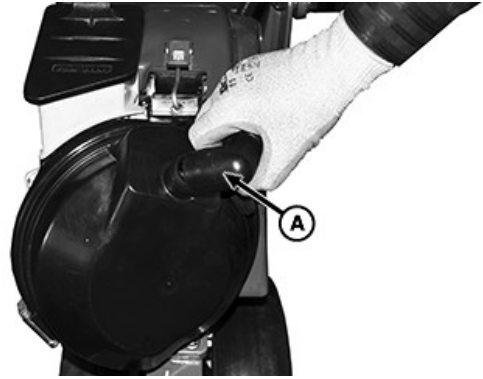
BM029320—UN—30OCT18

4. Lift tabs (D) and remove cover (E).



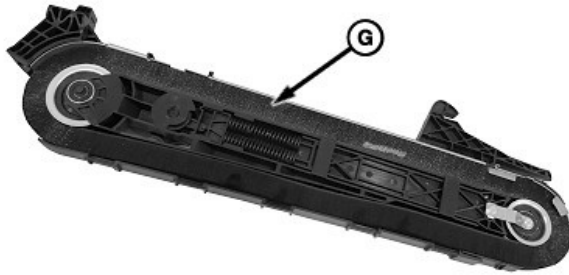
BM029321—UN—01NOV18

5. Remove seed sensor (F).



BM029307—UN—05NOV18

2. Remove hose (A).

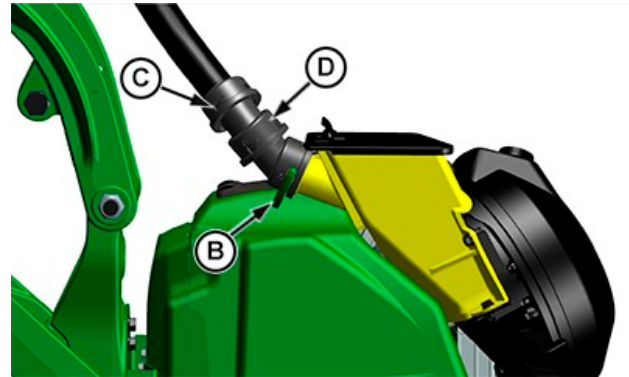


BM029322—UN—26APR18

6. Remove BrushBelt (G).

NOTE: Clean BrushBelt (G). It is recommended to reverse the position of BrushBelt (G).

a3rfggt.1706027379772-19-16JUL24



CQ1379717—UN—24OCT24

3. Remove clamps (B).

NOTE: When reinstalling, reassemble the clamp (C) in the correct position.

4. Rotate seed delivery hose (C) counterclockwise until it unsnaps from the hopper fill neck (D). Pull off seed delivery hose (C).

Clean Seed Meter Drive

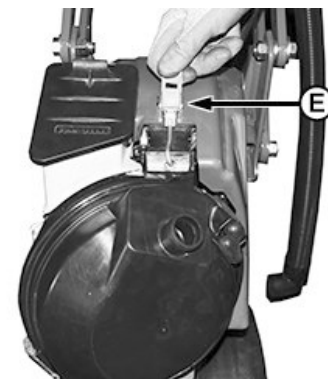
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

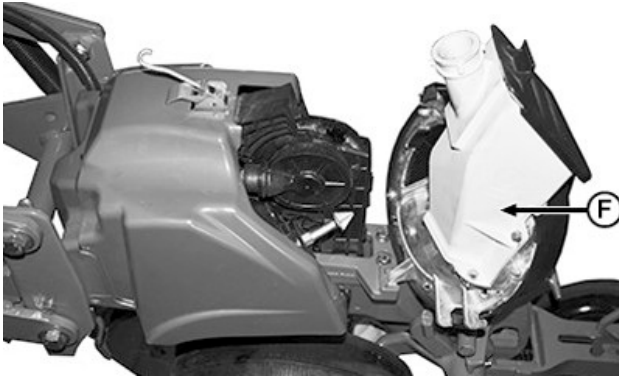
CAUTION: Avoid serious injury or death. Properly support the machine.

Clean Seed Meter Drive—ExactEmerge

1. Park the planter on level ground.

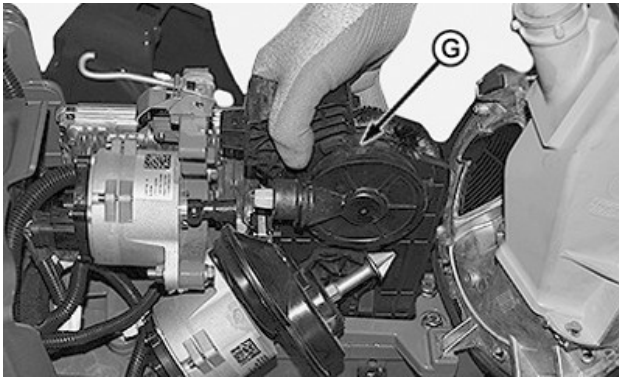


CQ1379732—UN—15OCT24



CQ1379720—UN—15OCT24

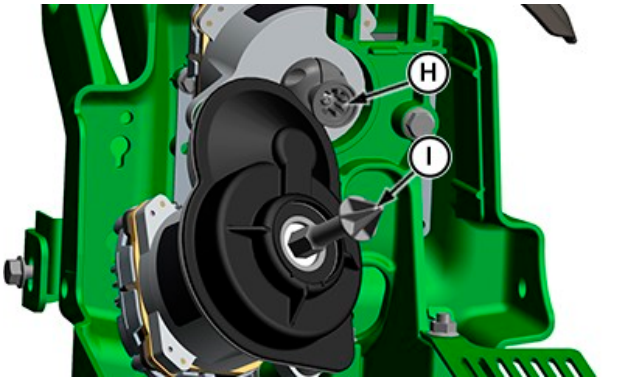
5. Open latch (E) and pull meter (F) back.



CQ1379721—UN—15OCT24

6. Remove BrushBelt (G) and clean it.

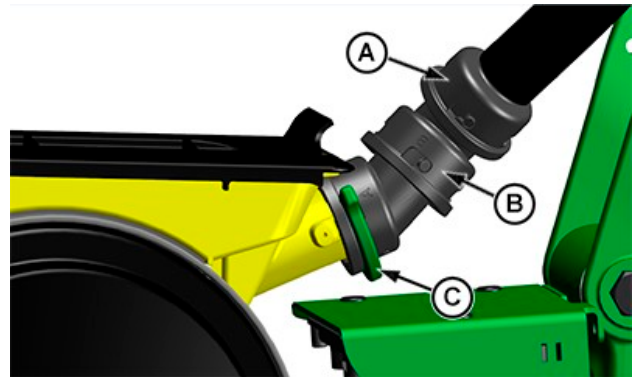
NOTE: Use compressed air to clean BrushBelt (G).



CQ1379728—UN—24OCT24

7. Use compressed air to clean any dirt and debris off the drive couplers (H and I), and other parts of the assembly.

Clean Seed Meter Drive—MaxEmerge 5e

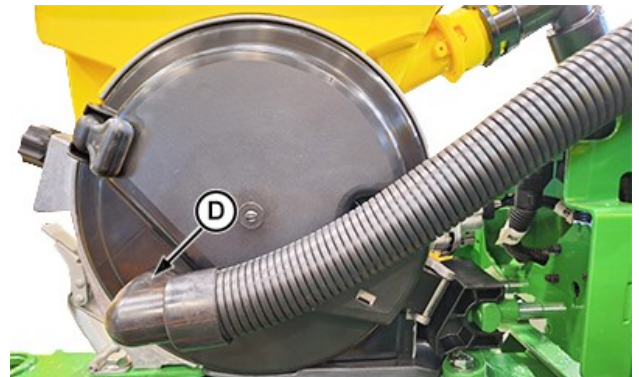


CQ1379702—UN—24OCT24

1. Remove clamp (C).

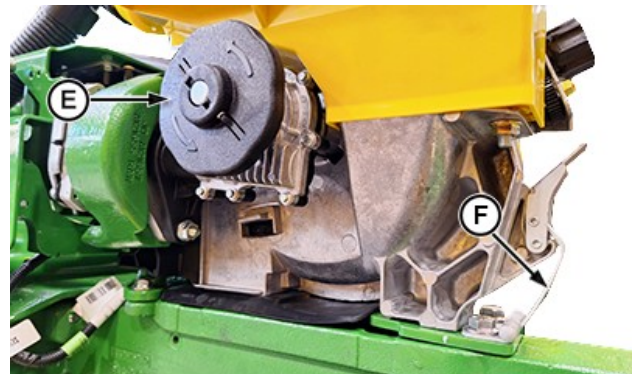
NOTE: When reinstalling, reassemble the clamp (C) in the correct position.

2. Rotate seed delivery hose (A) counterclockwise until it unsnaps from the hopper fill neck (B). Pull off seed delivery hose (A).

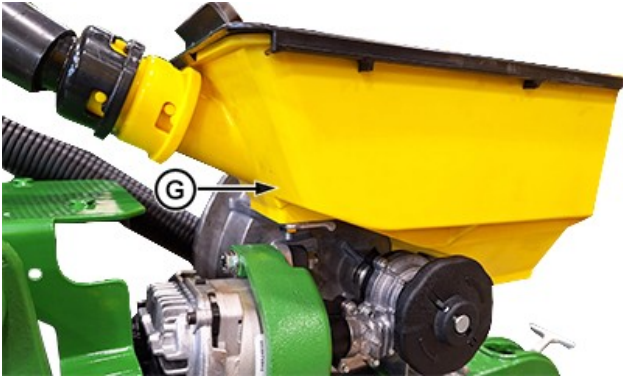


CQ1379704—UN—15OCT24

3. Remove vacuum hose (D).



CQ1379705—UN—15OCT24



CQ1379706—UN—15OCT24

4. Push down latch (F).
5. Pull handle (E).
6. While pulling handle (E), unlock meter assembly (G) from the row unit.



CQ1379707—UN—15OCT24

7. Check for wear on seed meter drive (H).
8. Clean any dirt and debris off the seed meter drive and the drive coupler as needed.
9. Reinstall the seed meter drive following the reverse order.

a3rfggt,1706027379854-19-24OCT24

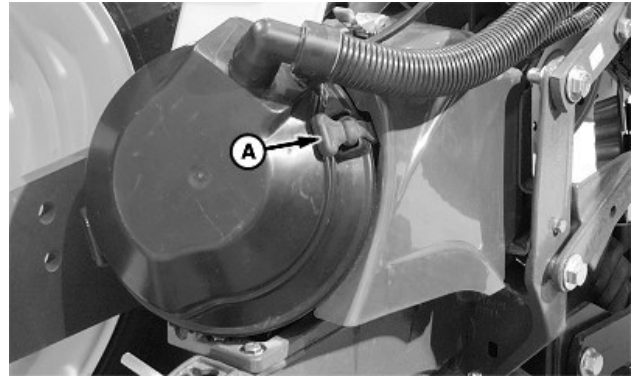
Clean Seed Meter

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

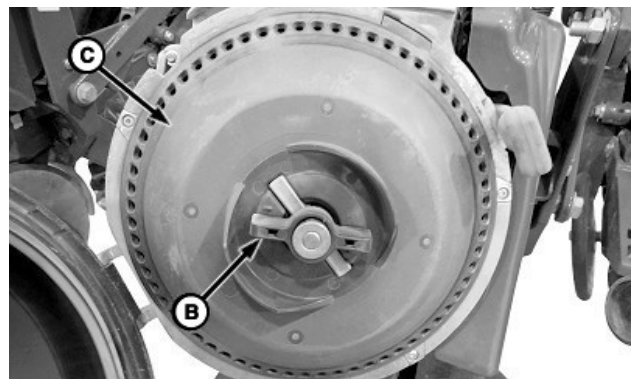
To clean the seed meter of the ExactEmerge and the MaxEmerge 5e planters, follow this procedure:

Clean the Seed Meter—ExactEmerge



BML020627—UN—30APR21

1. Disconnect CCS hose.
2. Unlock meter handle (A) and open the seed meter dome.



BML020628—UN—30APR21

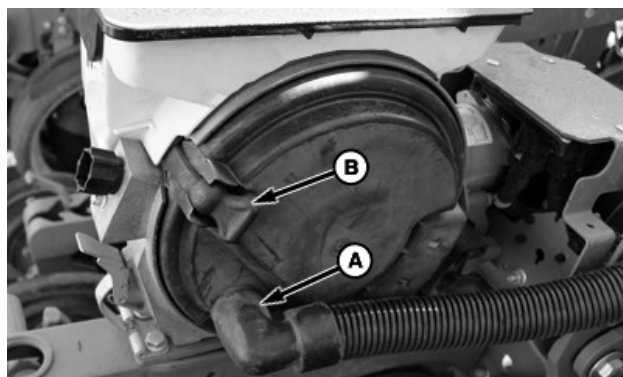
3. Turn hub handle (B) to unlock.
4. Remove seed disk (C).



CQ1379749—UN—15OCT24

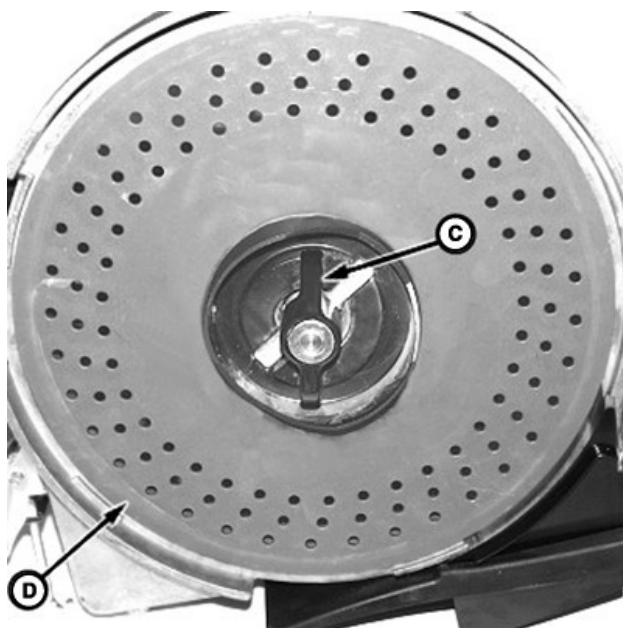
5. Use compressed air to clean seed meter (D).
6. To assemble, follow the procedure in reverse order.

Clean the Seed Meter—MaxEmerge 5e



BML020629—UN—03MAY21

1. Remove vacuum hose (A) from the metering unit.
2. Disengage handle (B) and open the vacuum chamber.



BML020630—UN—03MAY21

3. Turn hub handle (C) counterclockwise and remove seed disk (D) from the housing.



BML020631—UN—03MAY21

4. Clean inside seed meter (E) with compressed air.
5. Perform the cleaning in all the lines.

6. To assemble, follow the procedure in reverse order.

a3rfggt,1706027379977-19-24OCT24

Clean Row Unit Hopper Screen—Only for MaxEmerge 5e

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

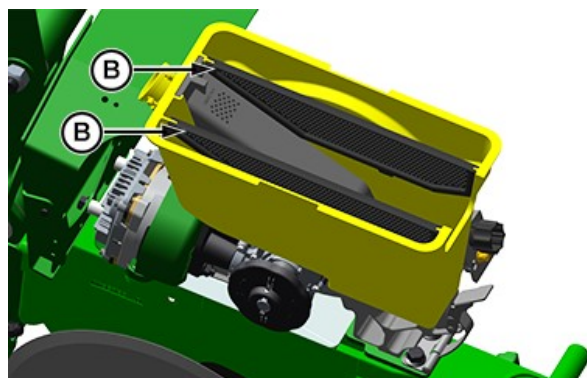
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1361837—UN—15MAY24

2. Remove cover (A).



CQ1361838—UN—15MAY24

3. Remove hopper screen (B) and clean it.

NOTE: If tapping the hopper screen does not remove the dirt, blow out the dust with compressed air.

4. To assemble, follow the procedure in reverse order.

a3rfggt,1706027380063-19-15OCT24

Inspect and Service the Seed Meter—Only for MaxEmerge 5e

Perform this service at the start of the season.

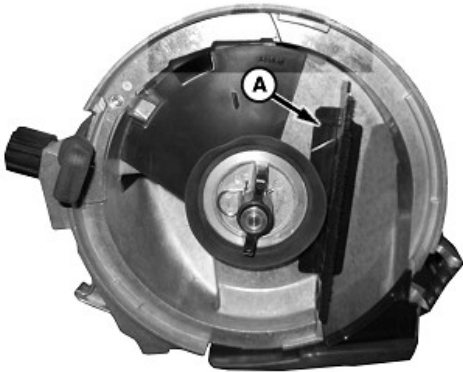
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid eye, skin, or breathing problems from exposure to seed treatments. If seed treatments are used, use caution when opening meter domes. Read and follow safety instructions on the chemical manufacturer's label.

IMPORTANT: Inspect the MaxEmerge 5e seed meter for wear and seed treatment buildup at least every year, if the service interval is not reached.

1. Perform the cleaning on the seed meter. (See Clean Seed Meter in this section).

NOTE: It is not necessary to remove the seed meter.



A78513—UN—02AUG13

2. Clean behind plastic cover (A) with a mild detergent and a soft brush.

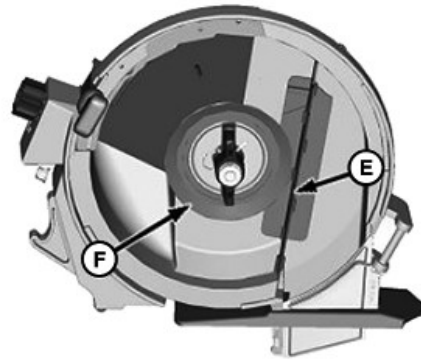


BM030090—UN—14FEB19

3. Install seed disk (D).
4. Spin hub (B) rapidly by hand and quickly release the hub. If the disk rotates approximately 1/4 to 1/2 revolution after it is released, the hub is properly adjusted. (If needed, see Adjust MaxEmerge 5e

Meter Hub in Operating the Seed Meter—MaxEmerge 5e section.)

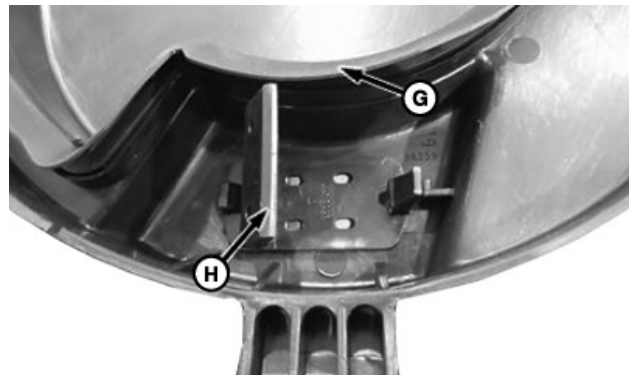
5. With the hub properly adjusted, view the edge of the disk in the inspection area. Rotate the hub slowly by hand. If gaps intermittently appear as the disk is rotated (indication of a warped disk), replace the disk.
6. With the hub properly adjusted, hold the meter upright with seed in the meter. Rotate the seed meter to verify that no seed loss occurs in inspection area (C). If seed loss occurs, replace the disk.
7. Remove seed disk (D).



BM030091—UN—14FEB19

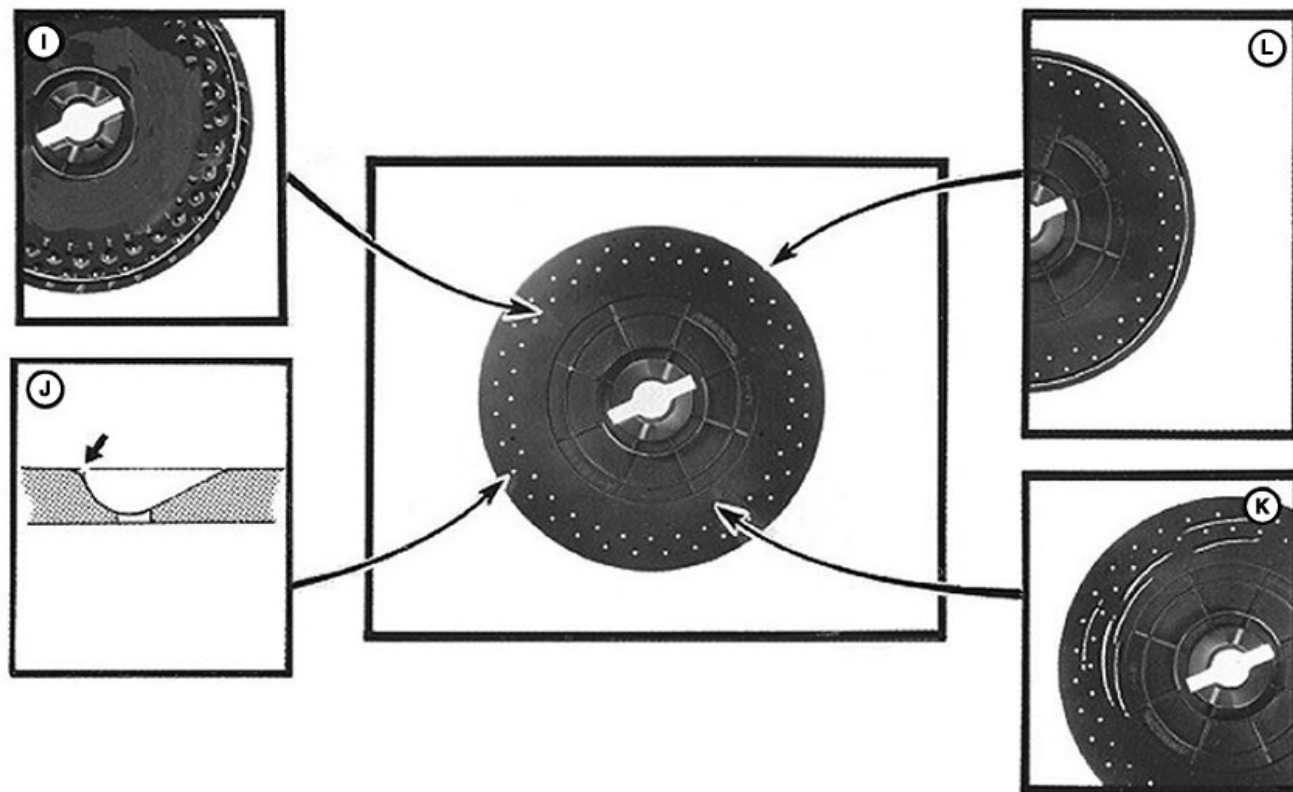
8. Check brush (E) bristles for separations and gaps. If the brush is worn enough to allow seed to pass through, replace the brush.
9. Replace hub seal (F) if it is cracked or weathered.

NOTE: If the vacuum seals are replaced, apply graphite spray on the vacuum side of the used seed disks. The new seed disks are factory lubricated.



BM030092—UN—14FEB19

10. Replace vacuum seals (G) if the seed disks are replaced, or when large cracks or wear areas are visible in the seal.
11. Replace disk wiper (H) if the edge of the wiper is grooved, or excessively worn.



BM030093—UN—14FEB19

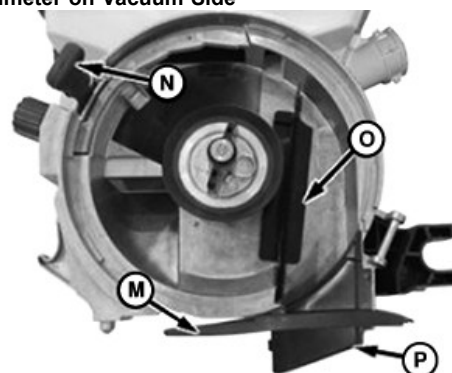
I—Perimeter on the Seed Side
J—Edge

K—Grooves
L—Perimeter on Vacuum Side

NOTE: To verify meter performance before purchasing new disks, perform a field check.

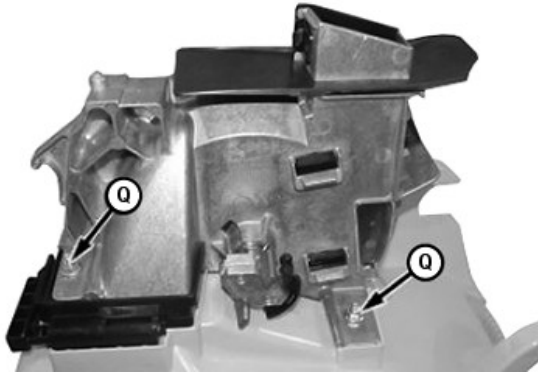
12. Inspect the seed disks for wear in the following areas and replace the disks as needed.

- Perimeter on seed side (I): A small amount of wear is acceptable. Check for seed loss through the gap between the disk and the housing.
- Edge (J) of the seed cell: Seed abrasion removes edges on the seed cells and increases the cell size. Increased cell size causes overpopulation when planting small seed and causes under-population when planting large seed).
- Grooves (K) on the vacuum side: Small grooves or scratches are acceptable. Large grooves affect the performance.
- Perimeter on vacuum side (L): A wear depth less than 1.0 mm (3/64 in) is acceptable.



BM030094—UN—14FEB19

13. Replace seed meter dust cover (M). If it does not fit properly, it is cracked or weathered.
14. Replace rubber handle (N), if it is cracked or broken.
15. Replace brush holders (O), if worn.
16. Replace chute cover (P), if worn.
17. Verify that the drive coupler pivots freely. If the flex drive does not pivot freely, disassemble, clean, and lubricate the drive with grease.



BM030095—UN—14FEB19

18. Place the seed meter assembly on the hopper and attach it with nuts (Q).

a3rfggt.1706027380160-19-16JUL24

Inspect and Service the Seed Meter—Only for ExactEmerge

Perform this service at the start of the season.

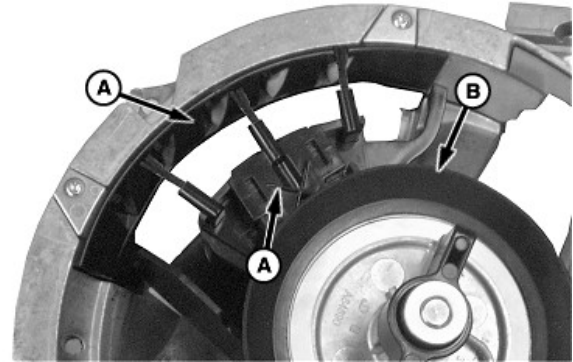
Make sure to comply with all the safety conditions before servicing.

CAUTION: Follow the chemical manufacturers precautions when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.

IMPORTANT: Annually inspect the ExactEmerge seed meter for wear and chemical or seed treatment buildup.

IMPORTANT: Degraded meter performance, like multiple seed placement, is an indicator of possible inner or outer double eliminator wear.

1. Perform the cleaning on the seed meter. (See Clean Seed Meter in this section).

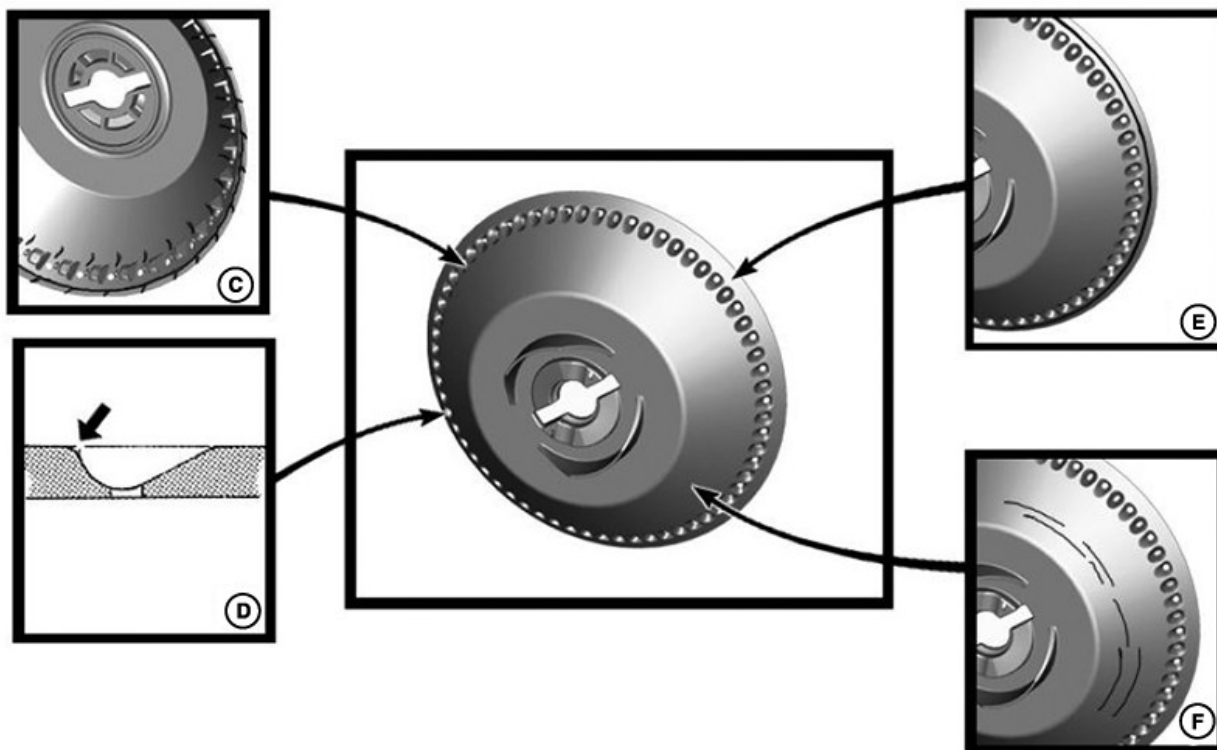


A80090—UN—23SEP14

2. Check inner and outer double eliminators (A) for wear.
3. Check the inner and outer tines for uniform length and diameter.
4. If the length of the outer double eliminator measures less than 8 mm from the base tine, or if brush to the tip and the meter performance is degraded, replace it.
5. If the diameters of inner adjustable double eliminator tines are worn to less than 1/2 the original diameter, and if the meter performance is degraded, replace it.
6. Replace hub seal (B) if it is cracked or weathered.

NOTE: Before replacing the seed disk, properly set the meters and the vacuum.

If the metering performance is satisfactory, it is not necessary to replace the seed disk.

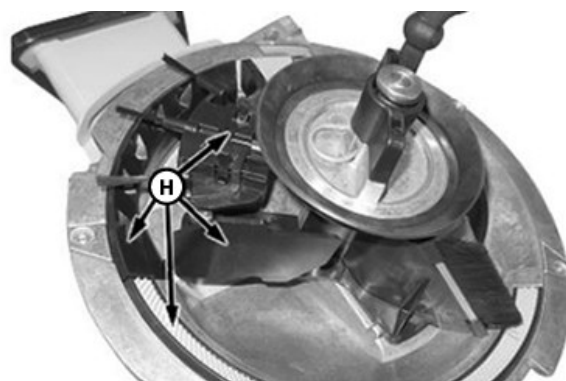


7. Check the seed disk for wear in the following areas and replace as needed:

- A small amount of wear (C) around the perimeter of the seed disk is acceptable. If worn, check for seed loss through the gap between the seed disk and the housing.
- Seed loss is eliminated with hub adjustments. (See Adjust the Seed Meter Hub Height in Operating the Seed Meter—ExactEmerge section.)
- Inspect the individual seed cells. Seed abrasion wears sharp edges on seed cells (D) and increases the cell size. (Increased cell size causes overpopulation when planting small seed or causes under-population when planting large seed). Replace the seed disk if the cell size is increased and field checks determine a reduction in accuracy.
- Small grooves or scratches (E) are acceptable on the vacuum side of the seed disk.
- Wear around perimeter (F) of the seed disk is acceptable up to an approximate depth of 1.0 mm (3/64 in).
- If the vacuum seals are replaced, apply graphite spray on the vacuum side of the used seed disks. See the Lubrication section. New seed disks are lubricated from the factory.

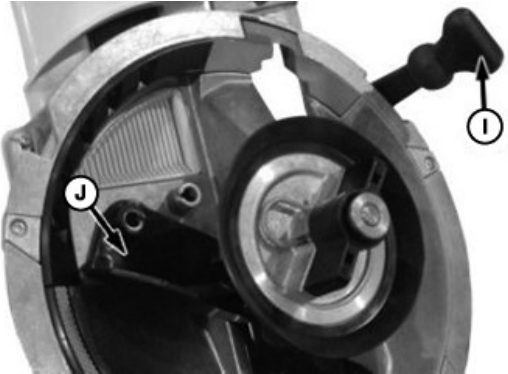


8. Replace vacuum seal (G) if the seed disk is replaced, or when large cracks or wear areas are visible.



9. Annual cleaning of the seed meters and the seed disk is recommended. To remove any seed

treatment buildup, use a mild detergent and a soft brush behind components (H) in the seed meter housing.



BM030098—UN—14FEB19

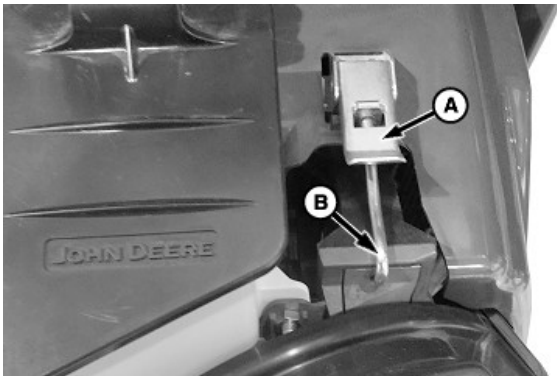
10. Replace rubber handle (I) if it is cracked or broken.
11. Replace affle (J) if it is damaged or worn.

a3rfgg,1706027380415-19-16JUL24

Adjust the Meter Latch—Only for ExactEmerge

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.



A78698—UN—27AUG13

Meter latch (A) must be close firmly into the locked position when hook (B) is seated through the meter tab and the BrushBelt cartridge. If the latch or the meter is out of adjustment, proceed as follows:

1. Release the latch and hook.
2. Rotate the hook one full revolution.
3. Install the meter and position the hook into the meter tab and the BrushBelt cartridge.
4. Close the latch until the clip snaps.
5. Check the latch for proper adjustment and no side-to-side movement.

6. Repeat these steps as necessary for other meter latches.

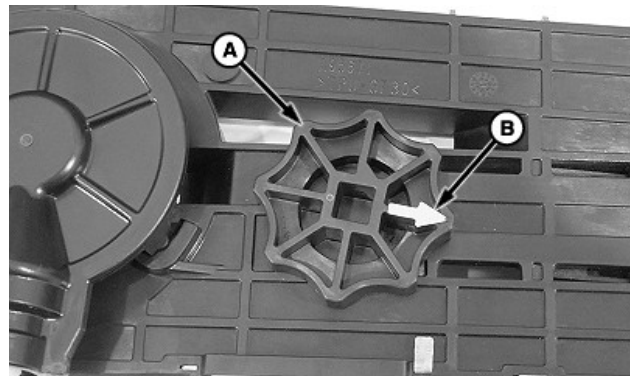
a3rfgg,1706027380613-19-16JUL24

Check Cartridge Guard—Only for ExactEmerge

Perform this service at the start of the season.

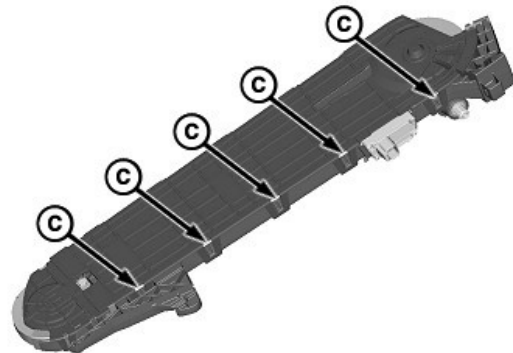
Make sure to comply with all the safety conditions before servicing.

1. For ExactEmerge planters, remove the BrushBelt cartridge. (See Remove and Install the BrushBelt Cartridge in Operating the Seed Meter—ExactEmerge section.)



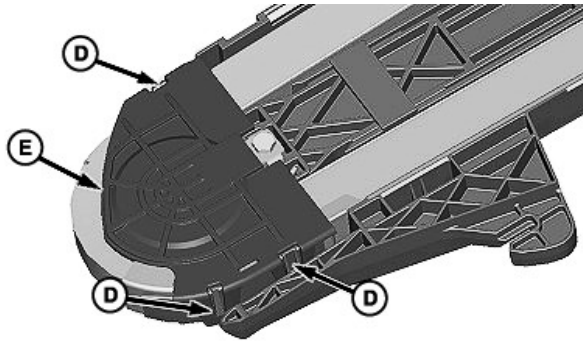
A79515—UN—03JAN14

2. Turn knob (A) 180° counterclockwise so that arrow (B) points towards the top of the BrushBelt cartridge.



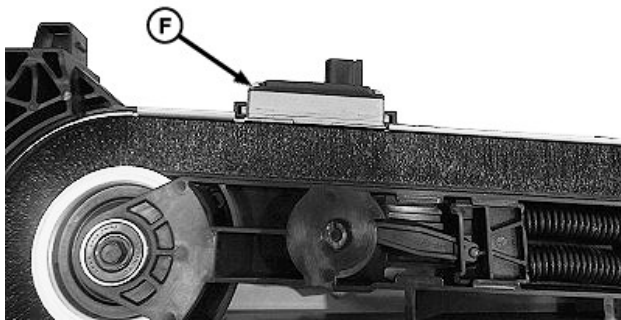
BM029319—UN—26APR18

3. Lift tabs (C) and remove cover.



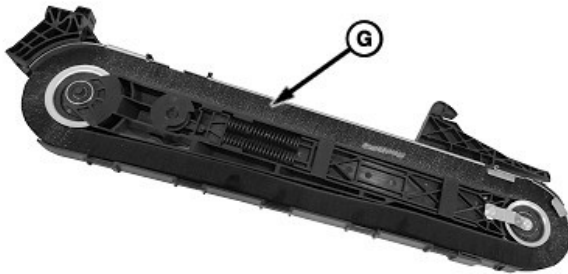
BM029320—UN—30OCT18

4. Lift tabs (D) and remove cover (E).



BM029321—UN—01NOV18

5. Clean seed sensor (F).



BM029322—UN—26APR18

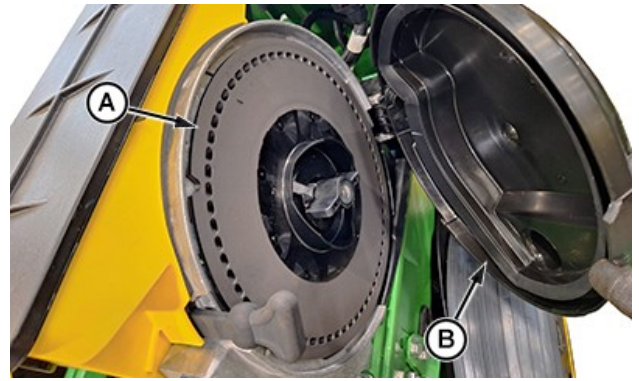
6. Clean BrushBelt (G) and seed sensor (F).
7. To assemble, follow the procedure in reverse order.

a3rfgg,1706027380679-19-16JUL24

Lubricate Vacuum Seal and Seed Disk— MaxEmerge 5e and ExactEmerge

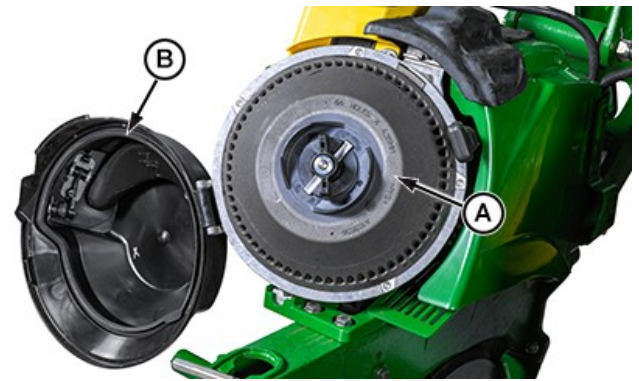
Perform this service at the start of the season, and at every 50 hours of operation.

Make sure to comply with all the safety conditions before servicing.



CQ1372677—UN—18JUL24

MaxEmerge 5e



CQ1372675—UN—17JUL24

ExactEmerge

1. Unlatch the meter handle and open the seed meter dome.
2. Apply graphite lubricant to vacuum seal (B) and seed disk (A).

NOTE: Under severe wear conditions, reduce the lubrication interval.

NOTE: If vacuum seals are replaced, apply graphite spray on the vacuum side of used seed disks. New seed disks are factory lubricated.

NOTE: It is recommended to allow the graphite to dry before closing the seed meter dome.

4. Close the seed meter dome and lock the meter handle.

E443CH7,1750705815174-19-01JUL25

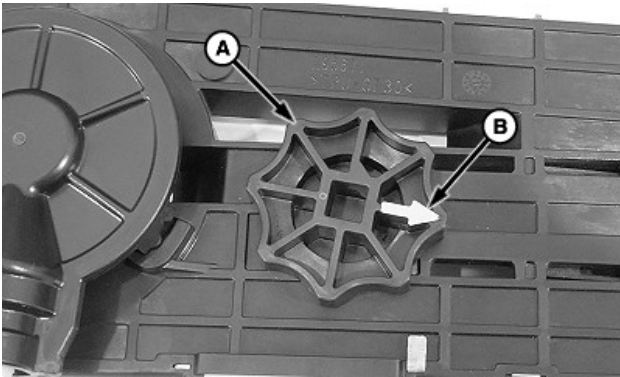
Replace BrushBelt—Only for ExactEmerge

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

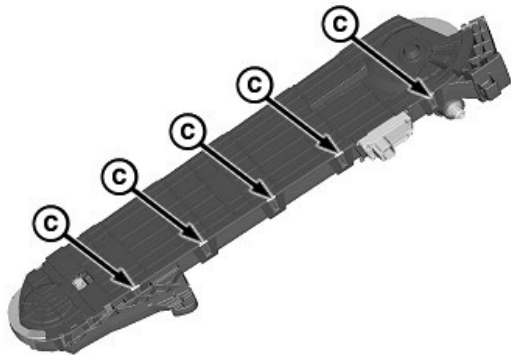
1. Remove the BrushBelt cartridge. (See Remove and

Install the BrushBelt Cartridge in Operating the Seed Meter—ExactEmerge section.)



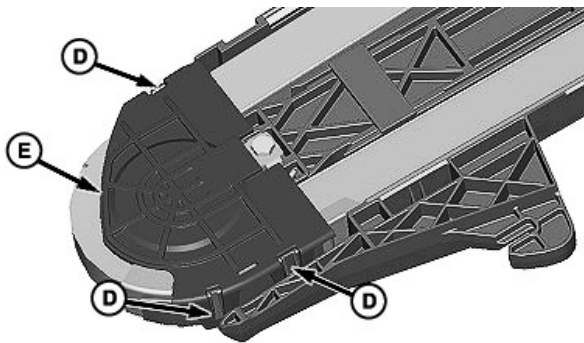
A79515—UN—03JAN14

2. Turn knob (A) 180° counterclockwise so that arrow (B) points towards the top of the BrushBelt cartridge.



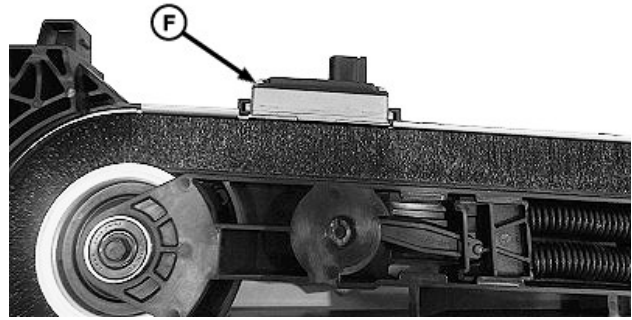
BM029319—UN—26APR18

3. Lift tabs (C) and remove cover.



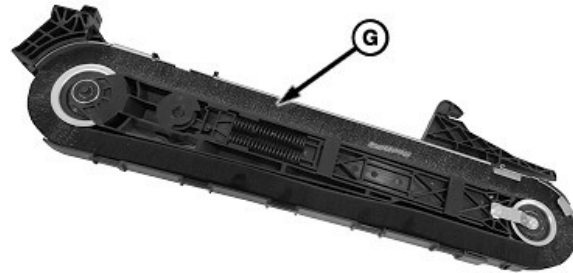
BM029320—UN—30OCT18

4. Lift tabs (D) and remove cover (E).



BM029321—UN—01NOV18

5. Remove seed sensor (F).



BM029322—UN—26APR18

6. Remove BrushBelt (G).
7. To install a new BrushBelt (G), follow the procedure in reverse order.

a3rfgg,1706027380826-19-16JUL24

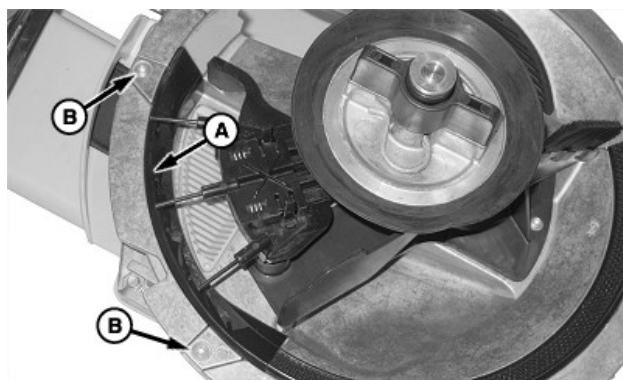
Replace or Clean the Seed Guide—Only for ExactEmerge

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

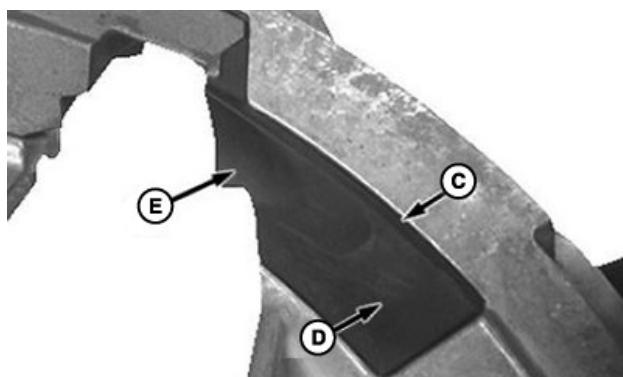
⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



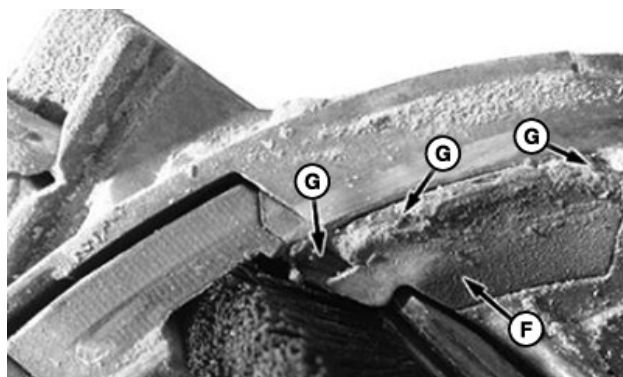
A87490—UN—02SEP15

2. Remove the seed meter from the row unit. (See Remove and Install the ExactEmerge Seed Meter in Operating the Seed Meter—ExactEmerge section.)
3. Open the seed meter dome. (See Access the Vacuum Meter in Operating the Seed Meter—ExactEmerge section.)
4. Remove the seed disk. (See Remove the Seed Disk in Operating the Seed Meter—ExactEmerge section.)
5. Remove and retain Torx screws (B) and plates.
6. To remove, pull up on outer double eliminator assembly (A).



BM030078—UN—13FEB19

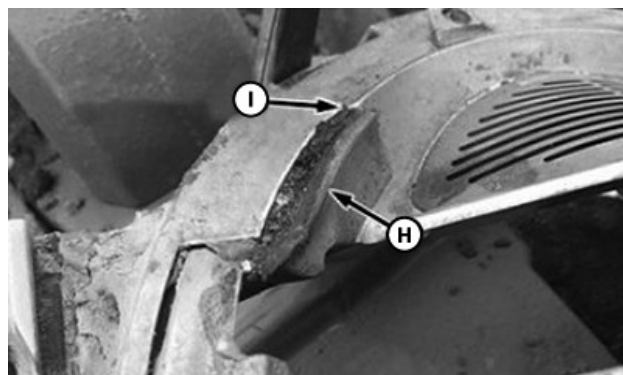
7. If the rubber boot is in good condition, edges (C) and flat surface (D) are flush with the meter housing. Recessed area (E) is lower than the edges.



BM030079—UN—13FEB19

Deteriorated Rubber Boot

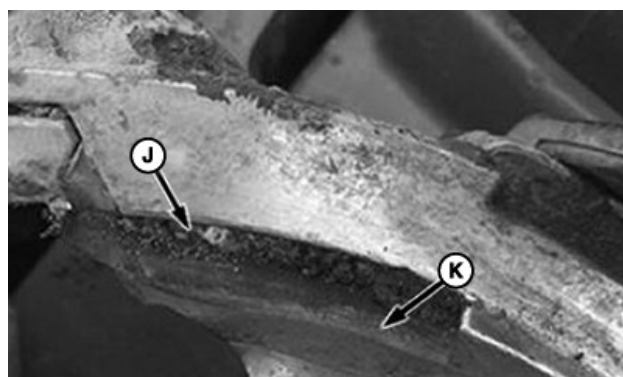
8. If rubber boot (F) has excessive deterioration (G), replace the rubber boot.



BM030080—UN—13FEB19

Worn Rubber Boot

9. If rubber boot (H) has worn enough to expose an edge (I) of the meter housing, replace the rubber boot.

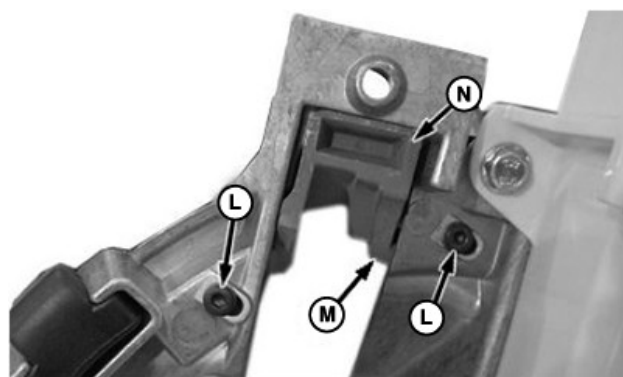


BM030081—UN—13FEB19

Debris Buildup

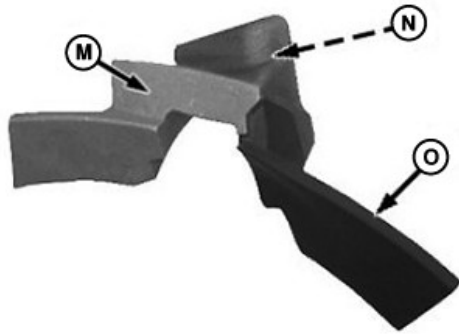
IMPORTANT: Prevent debris from pushing the rubber boot out of position.

10. Remove all debris (J) from rubber boot (K) and from the boot seat in the meter housing.

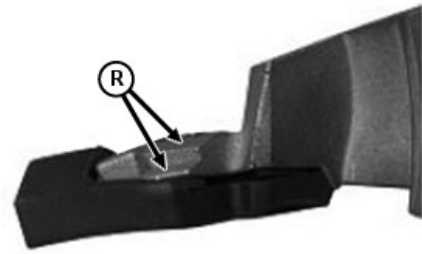


BM030082—UN—13FEB19

Torx Screws and Pocket



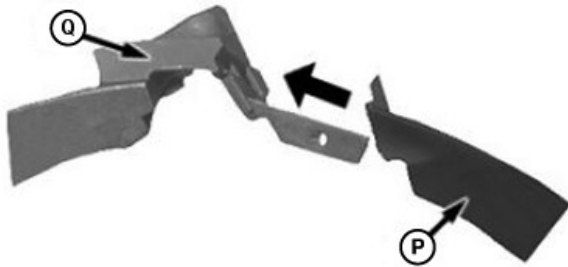
Seed Guide Assembly
BM030083—UN—13FEB19



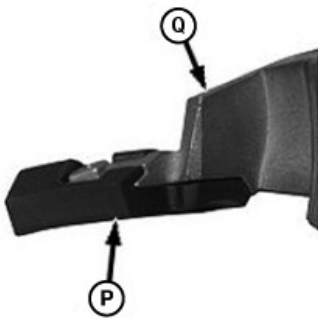
Incorrectly Installed
BM030086—UN—14MAR19

L—Torx Screws
M—Seed Guide Assembly
N—Seed Guide Pocket
O—Rubber Boot

11. Remove and retain two Torx screws (L).
12. To remove seed guide assembly (M), lightly tap in pocket (N) from the rear of the meter.



BM030084—UN—13FEB19



Correctly Installed
BM030085—UN—13FEB19

IMPORTANT: Verify that tabs (R) on the rubber boot are seated in the notches of the seed guide.

13. When replacing rubber boot (B), install it on seed guide (Q), as shown.
14. Install the seed guide assembly into the meter housing.
15. Install and tighten the previously removed Torx screws.
16. Install the outer double eliminator assembly.
17. Install the previously removed plates and the Torx screws for the outer double eliminator. Tighten the screws to specification.

Specification

Torx Screw—Torque. 2.9 N·m
(26.7 lb·in)

E443CH7,1750706021366-19-01JUL25

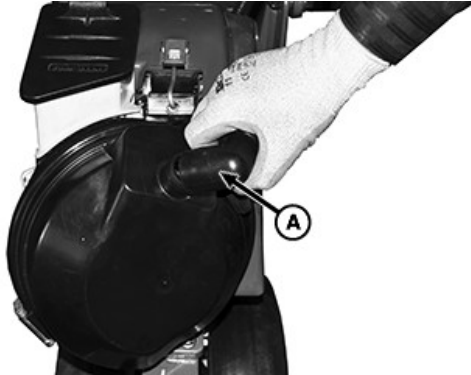
Replace Meter Motor and BrushBelt Motor—Only for ExactEmerge

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

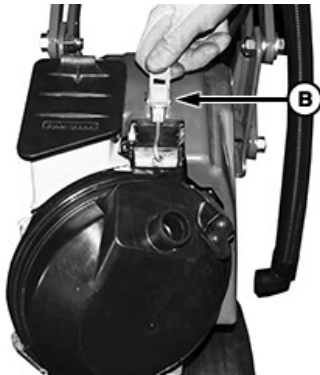
⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

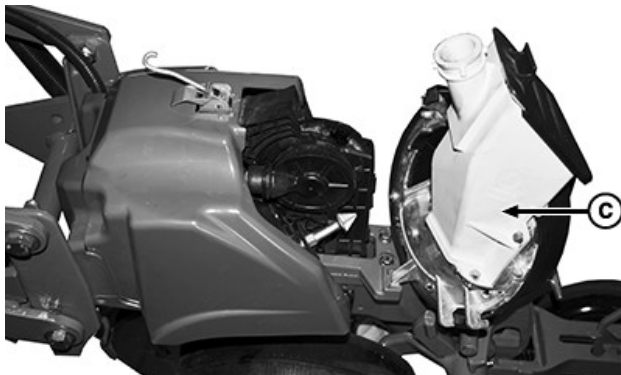


BM029307—UN—05NOV18

2. Remove hose (A).

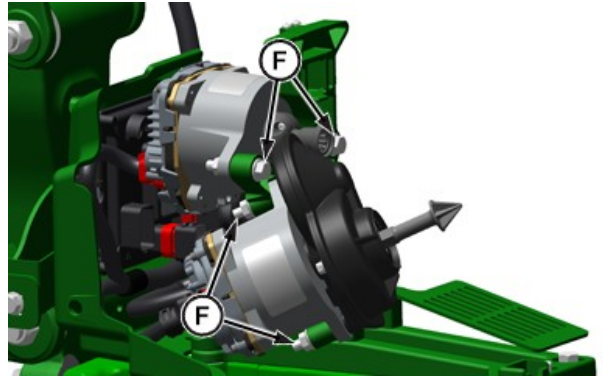


BM029308—UN—05NOV18



BM029309—UN—05NOV18

3. Open latch (B) and pull meter (C) to back.
4. Remove the BrushBelt cartridge. (See Remove and Install the BrushBelt Cartridge in Operating the Seed Meter—ExactEmerge section.)



CQ1379759—UN—15OCT24

5. Loosen screws (F), remove meter motor and BrushBelt motor.
6. To assembly, follow the procedure in reverse order.
7. Tighten the screws as specified.

Specification

Screw—Torque. 37 N·m
(27 lb·ft)

E443CH7,1750706055626-19-01JUL25

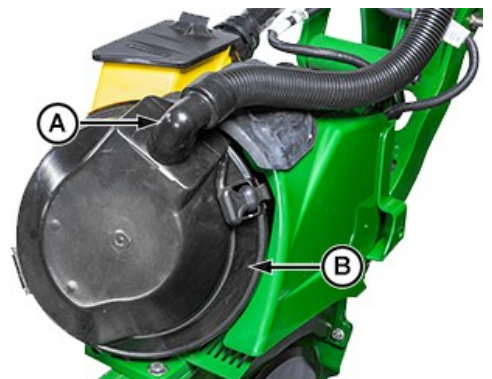
Replace Meter Wear Pads—Only for ExactEmerge

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

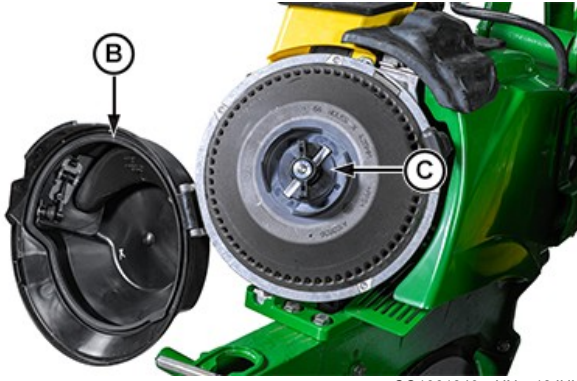
⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



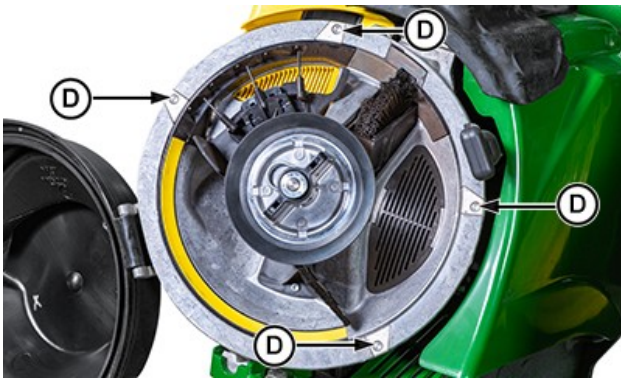
CQ1360710—UN—15MAY24

2. Remove vacuum hose (A) from seed meter dome (B).



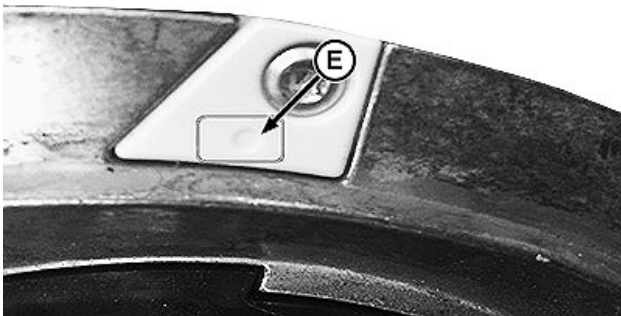
CQ1361849—UN—18JUL24

3. Open seed meter dome (B), and remove seed disk (C).



CQ1361851—UN—18JUL24

4. Loosen screws (D).



CQ1361854—UN—18JUL24

NOTE: Meter wear pads experience wear under normal conditions. Proper replacement of wear pads helps prevent meter housing wear. There is a wear indicator on pad (E), when the wear indicator is not visible, it needs to be replaced. Wear pads may be moved from top to bottom, if non-uniform wear occurs, for longer life.

5. To assemble, follow the procedure in reverse order.

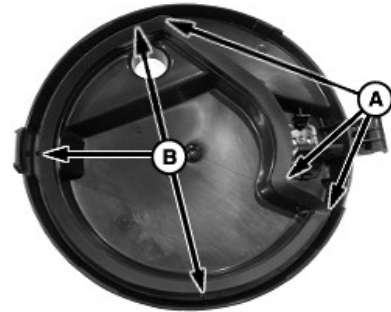
a3rfgg,1706027381212-19-18JUL24

Install New Vacuum Seal

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

New Vacuum Seal—MaxEmerge 5e



A78799—UN—07APR14

1. Remove the seed meter from planting unit and leave to one side. It is not necessary to remove seeds from feeder.

2. Unlock the pin and open the vacuum chamber.

3. Remove and discard used vacuum seal.

NOTE: This procedure is carried out if the seal has excessive play.

4. Install new seal.

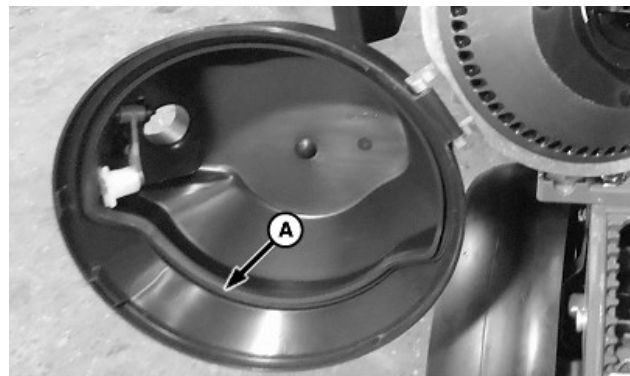
5. Insert first corners (A), and then insert the seal in three places (B) with the dimples aligned with housing dimples.

6. Finally insert the rest of the seal.

7. If a seed disk is being used, apply graphite spray on the vacuum side of the used seed disks.

8. Close the vacuum chamber and lock pin. Install seed feeder in planting unit.

New Vacuum Seal—ExactEmerge



A78721—UN—27AUG13

A—Seal

1. Unlatch the meter handle and open the seed meter dome.
2. Remove and discard the old vacuum seal.

NOTE: This procedure prevents excessive slack in the vacuum seal.

3. Install the new vacuum seal. Insert the corners of seal (A), then insert the seal at the three locations with the dimples on the seal aligned with the dimples on the seed meter dome. Finally, insert the remaining portions of the seal.
4. If a seed disk (bowl) is being used, apply graphite lubricant on the vacuum seal side.
5. Close the seed meter dome and latch the meter handle.

a3rfggt,1706027381334-19-16JUL24

Remove and Install Standard Flush Face Seed Tubes—Only for MaxEmerge 5e

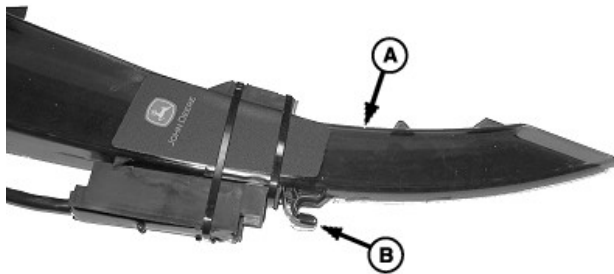
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

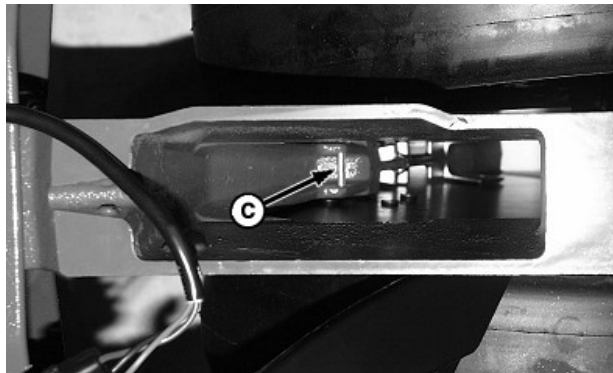
To remove the seed tube, squeeze tabs with fingers until they release from casting and pull upward.

1. Connect the monitor harness to the sensor harness.

NOTE: Place harness connector inside the planting unit at same time as the seed tube.

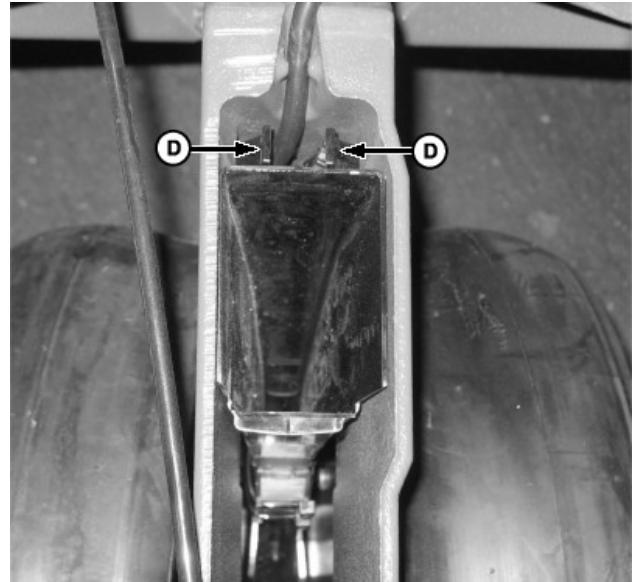


A59900—UN—02APR07



A53298—UN—03NOV03

2. Insert seed tube (A) into the planting unit, so hook (B) locks on alignment pin (C).



A59901—UN—02APR07

3. Position the seed tube so tabs (D) lock into holes.

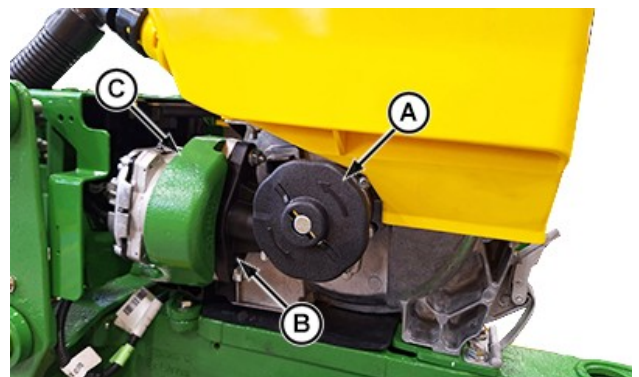
a3rfggt,1706027381579-19-16JUL24

Disengage the Electric Drive—MaxEmerge 5e

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

IMPORTANT: MaxEmerge 5e drive only needs to be removed when broken or when there are issues with the gearbox housing. Standard removal of the seed meter assembly for maintenance or service does not require the drive to be removed from the gearbox housing.



CQ1372674—UN—17JUL24

1. Pull handle (A).
2. Pull electric drive (B) from gearbox housing (C).

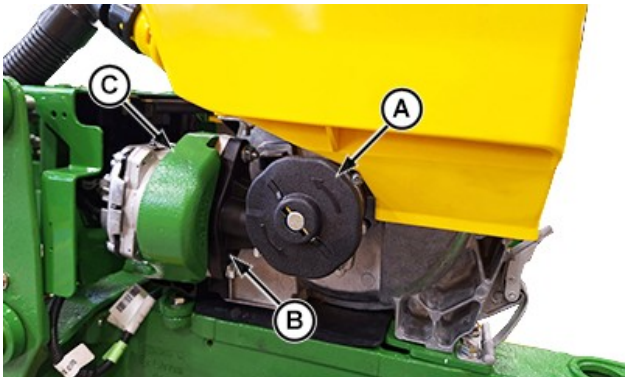
a3rfggt,1706027381653-19-16JUL24

Engage the MaxEmerge 5e Drive—Only for MaxEmerge 5e

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

IMPORTANT: MaxEmerge 5e drive only needs to be removed when broken or when there are issues with the gear case housing. Standard removal of the seed meter assembly for maintenance or service does not require the drive to be removed from the gear case housing.



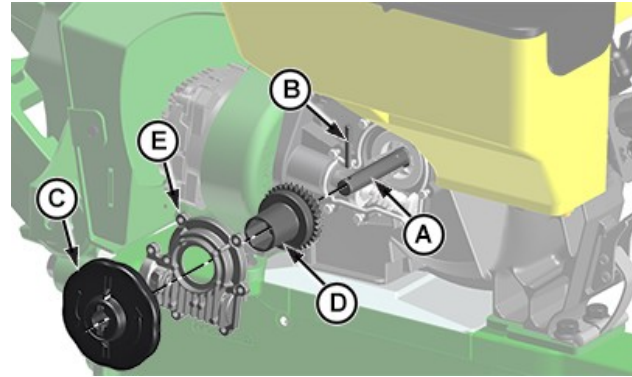
CQ1372674—UN—17JUL24

Push handle (A).

2. Push electric drive (B) into gear case housing (C).

NOTE: If the electric drive (B) does not fully engage the gear case, rotate handle (A) until the coupler slides into the gear case.

a3rfggt,1706027381736-19-18JUL24



CQ1372986—UN—22JUL24

2. Insert handle (C) through gear case (D) until handle snaps into shaft groove (A).

NOTE: Gear case must seat into cutout (E).

3. Install cotter pin (B) to tighten handle (C) on the seed meter axis.

a3rfggt,1706027381828-19-15OCT24

Replace the Meter Shear Hub—Only for MaxEmerge 5e

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.



CQ1368321—UN—30MAY24

1. Align handle (A) surfaces.

Service—Planting Unit—Frame

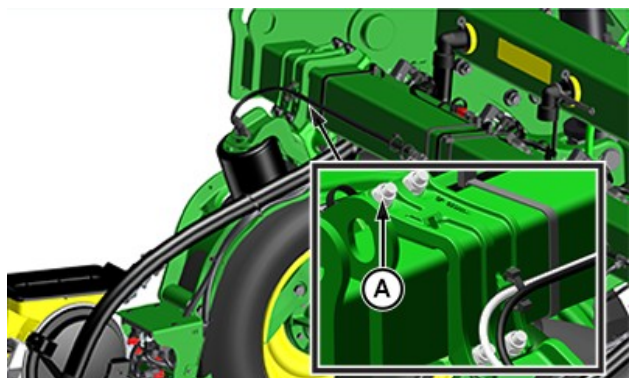
Check the Row Unit Bracket Clamp Torque

Perform this service at first 10 hours of operation, and at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1373252—UN—25JUL24

2. Check bracket clamp bolts (A) torque.
3. If necessary, tighten the bolts (A) as specified in a crisscross pattern.

Specification

Bracket Clamp Bolt—Torque. 119 N·m
(88 lb·ft)

4. Repeat the procedure on all row units.

E443CH7,1750706175508-19-04JUL25

Service—Pneumatic Downforce (PDF) System—If Equipped

Drain the Pneumatic Downforce (PDF) System Tank

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

Perform this service every 10 hours of operation and at the start of the season.

Make sure to comply with all the safety conditions before servicing.

1. Park the planter on level ground.

⚠ CAUTION: To avoid serious injury or death, properly support the machine.



CQ1357490—UN—25JAN24

PDF Compressor Tank



CQ1357491—UN—25JAN24

Drain PDF Compressor Tank

2. Open valve (A).
3. Drain water from the pneumatic downforce (PDF) compressor tank.
4. After draining, close valve (A).

a3rfggt,1706028293776-19-14OCT24

Check the Pneumatic Downforce (PDF) System Pressure Sensors

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

1. Park the machine on level ground.
2. Raise the planter and install the service locks.
3. Turn off the tractor and remove the ignition key.
4. Check if the pneumatic downforce (PDF) compressor sensors are reading zero when the planter is raised.
5. If not, calibrate the sensors.

NOTE: If recalibration of the pressure sensors of the PDF system is needed, use the instructions given at the Operator's Manual of the SeedStar 5 monitor.

NOTE: This procedure calibrates all the PDF sensors.

a3rfggt,1706028293901-19-24OCT24

Check the Pneumatic Downforce (PDF) Compressor Oil Level

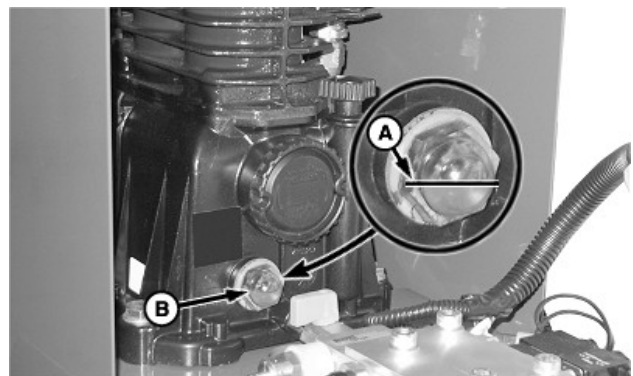
Perform this service every 10 hours of operation.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid injury or death. Deactivate the power beyond, turn off the tractor, and place the tractor in park before servicing.

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

1. Park the machine on level ground.



A87494—UN—02SEP15

2. The proper oil level is in the middle (A) of the sight glass (B).
3. Add oil as necessary.

NOTE: See the specified oil for the PDF compressor at Oil of the Pneumatic Downforce (PDF) Compressor in the Lubrication section.

a3rfggt,1706028293989-19-11OCT24

Change the Pneumatic Downforce (PDF) Compressor Oil

Perform this service at first 20 hours of operation, and at the start of the season.

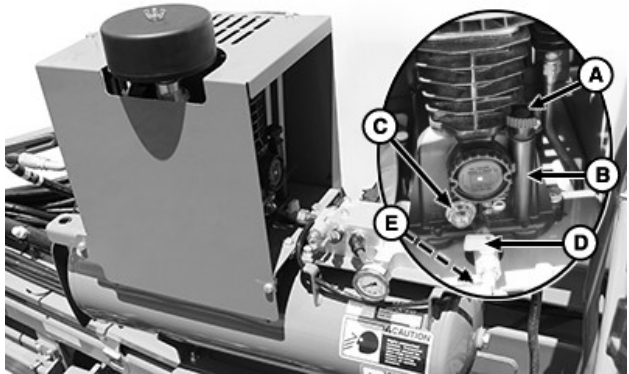
Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid injury or death. Deactivate the power beyond, turn off the tractor, and place the tractor in park before servicing.

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

NOTE: To aid filling, use a funnel.

1. Park the machine on level ground.



BM029858—UN—13FEB19

2. To facilitate the flow of the oil while draining, remove the cap (A).
3. Place a suitable container under the drain hose (E).
4. Open the drain valve (D) and collect the oil.
5. Close the drain valve (D).
6. Add the specified quantity of oil to the reservoir (B) until the oil is visible in the middle of the sight glass (C).

Specification

PDF Compressor Oil—Capacity. 0.5 L
(16.6 fl oz)

NOTE: See the specified oil for the PDF compressor at Oil of the Pneumatic Downforce (PDF) Compressor in the Lubrication section.

7. Reinstall the cap (A).

a3rfggt,1706028294087-19-24JAN24

Clean the Pneumatic Downforce (PDF) Compressor Air Filter

Perform this service every 50 hours of operation, or as required.

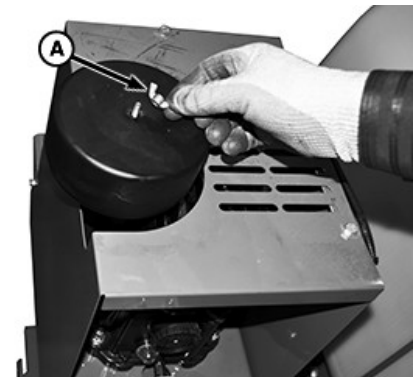
Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid injury from sudden activation of the compressor. Turn off the tractor before servicing.

IMPORTANT: Avoid compressor damage. Clean the air filter element every 50 operating hours. Replace the air filter element every 100 operating hours or at the start of each season. Filter cleanliness is critical to maintain the performance and the service life of the air compressor.

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

1. Clean any dust from the area around the air filter.



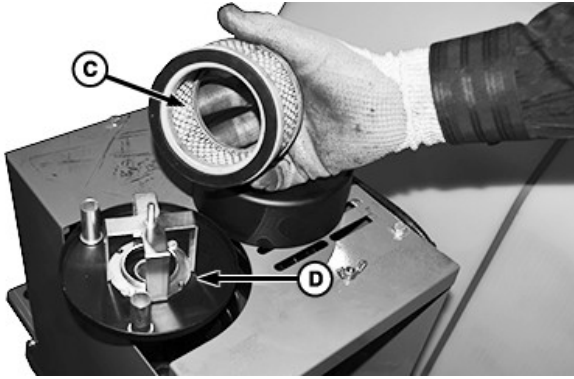
BM028822—UN—01NOV18

2. Remove the wing nut (A).



BM028821—UN—01NOV18

3. Remove the weather shield (B).



BM028823—UN—06NOV18

IMPORTANT: Avoid damage to the filter element (C) and to the compressor. Do not damage the filter element (C) while cleaning.

4. Remove the filter element (C).
5. To clean, tap the filter element (C) lightly on a firm surface.

IMPORTANT: Avoid compressor damage. Clean all excess material from the filter base (D) before installing the filter element (C).

6. Install the filter element (C).
7. Install the previously removed weather shield (B) and the wing nut (A).
8. Tighten the wing nut (A).

a3rfggt,1706028294154-19-20FEB24

Replace the Pneumatic Downforce (PDF) Compressor Air Filter

Perform this service at every 100 hours of operation.

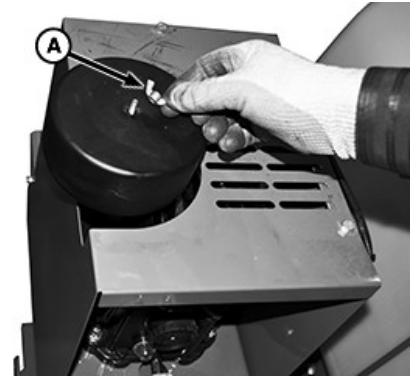
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid injury from sudden activation of the compressor. Turn off the tractor before servicing.

IMPORTANT: Avoid compressor damage. Clean the air filter element every 50 operating hours. Replace the air filter element every 100 operating hours. Filter cleanliness is critical to maintain the performance and the service life of the air compressor.

NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

1. Clean any dust from the area around the air filter.



BM028822—UN—01NOV18

2. Remove the wing nut (A).



BM028821—UN—01NOV18

3. Remove the weather shield (B).



BM028823—UN—06NOV18

4. Remove the filter element (C) and replace it with a new one. Contact a John Deere dealer or other service provider.

IMPORTANT: Avoid compressor damage. Clean all excess material from the filter base (D) before installing the new filter element (C).

5. Install the new filter element (C).
6. Install the previously removed weather shield (B) and the wing nut (A).
7. Tighten the wing nut (A).

a3rfggt,1706028294380-19-17JUL25

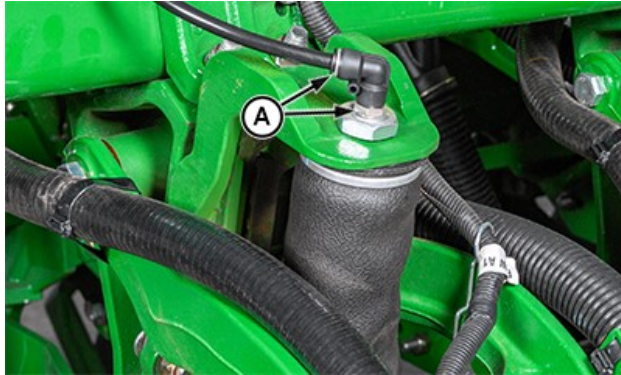
Check for Pneumatic Downforce (PDF) System Connectors Leaks

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

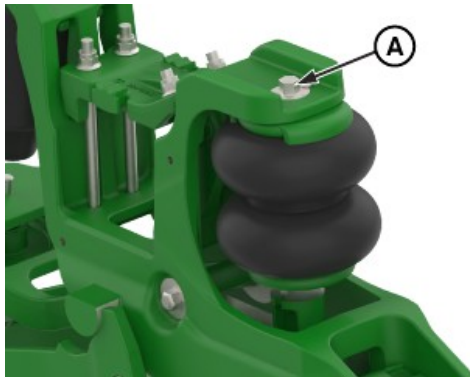
⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



Seed Row Units Connectors

CQ1357492—UN—25JAN24



Fertilizer Row Units Connectors

CQ1451309—UN—19MAR26

2. Put a mixture of water and detergent or soap around the connection points (A).
3. Check if the mixture starts foaming. If yes, repair or replace the parts. If not, this means that no leakage is present.
4. Repeat the procedure for all the row units.

PS9EIDU,1773744093125-19-30MAR26

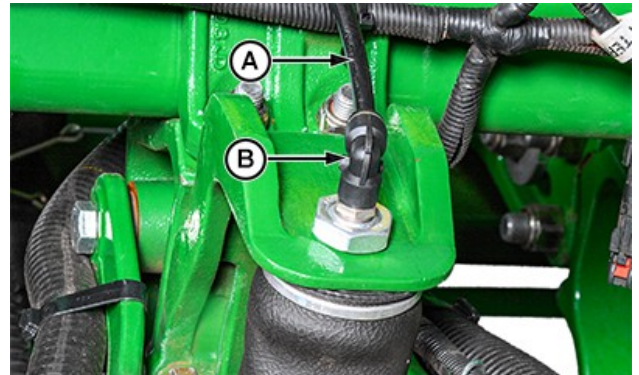
Replace the Pneumatic Downforce (PDF) System Connectors

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

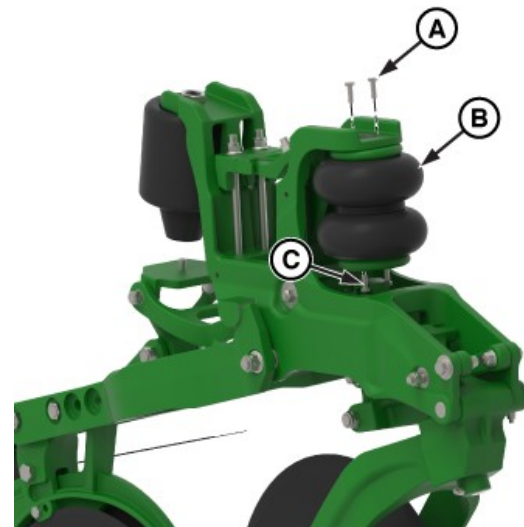


CQ1362100—UN—15MAY24

2. Press connector (B) lock, and remove hose (A).
3. Remove connector (B).
4. To assemble, follow the procedure in reverse order.

Replace Cutting Disk Air Spring

1. Park the planter on level ground.
2. Remove the pneumatic downforce (PDF) connector.



CQ1451147—UN—19MAR26

3. Remove screws (A).
4. Remove screws (C) and air spring (B).
5. To assemble, follow the procedure in reverse order of removal.

Specification

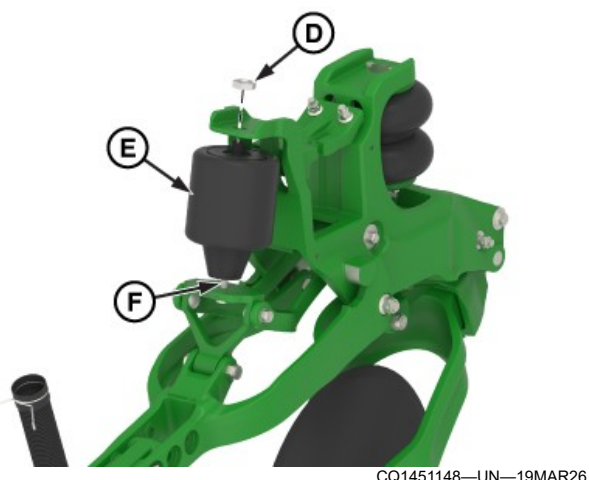
Cap Screw M8x25 (A)—PDF	
Row Units—Torque.	23 N·m (17 lb·in)

Cap Screw M8x20 (C)—PDF
Row Units—Torque. 23 N·m
(17 lb·ft)

6. Tighten screws (A) and screws (C) to specification.

Replace Fertilizer Air Spring

1. Park the planter on level ground.
2. Remove the pneumatic downforce (PDF) connector.



3. Remove nut (D).
4. Remove screw (F) and air spring (E).
5. To assemble, follow the procedure in reverse order of removal.

Specification

Nut (D)—PDF Row
Units—Torque. 21 N·m
(16 lb·in)

Screw (F)—PDF Row
Units—Torque. 35 N·m
(26 lb·ft)

6. Tighten nut (D) and screw (F) to specification.

7. Apply Loctite 242 to nut (A) to prevent leaks.

FHSSYU9,1773766540582-19-13APR26

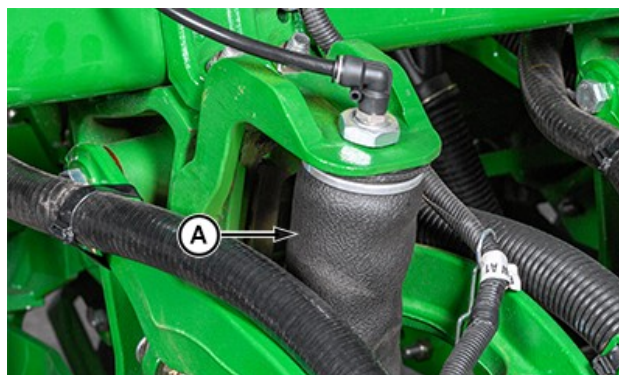
Check for Leaks on Pneumatic Downforce (PDF) System Air Springs

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



PDF Air Springs of the Seed Row Units



PDF Air Springs of the Fertilizer Row Units

2. Check the air leakage on the pneumatic downforce (PDF) air springs (A) of the seed row units and fertilizer row units.

NOTE: To check for air leakage in the PDF air springs (A), use a mixture of the water and detergent or soap which can foam.

3. Repeat the procedure for all the row units.
4. Repair or replace, if necessary.

PS9EIDU,1773943370626-19-19MAR26

Replace the Pneumatic Downforce (PDF) System Air Springs

Perform this service at every 1000 hours of operation, or as required.

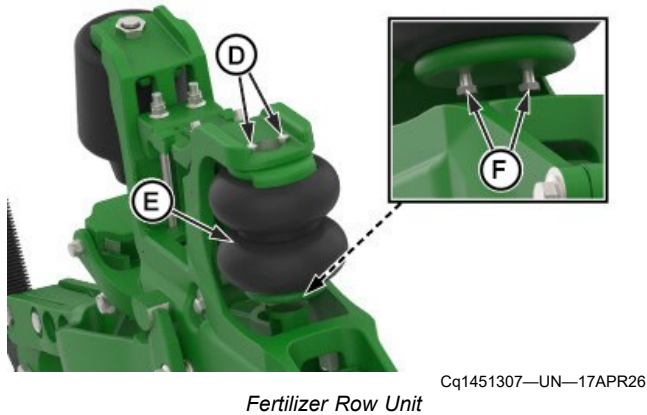
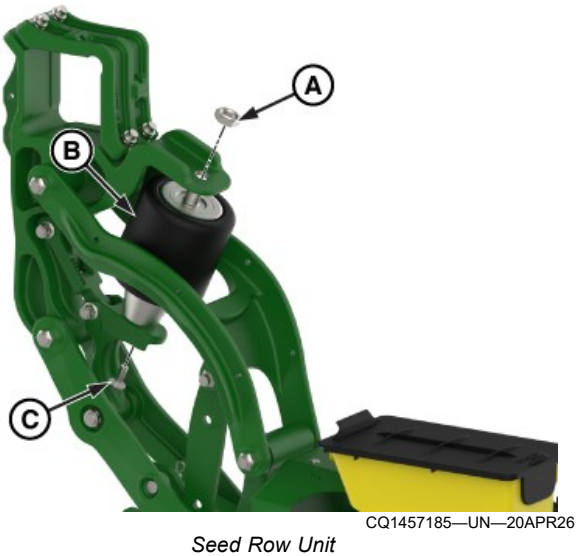
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.
2. Remove the pneumatic downforce (PDF) connector.

(See Replace the Pneumatic Downforce (PDF) System Connectors in this section.)

3.



4. Remove nut (A).
5. Remove screw (C) and air spring (B).
6. Remove screws (D—F) and air spring (E).
7. To assemble, follow the procedure in reverse order of removal.
8. Tighten nut (A) and screws (C—F) to specification.

Specification

Nut (A)—PDF Row	
Units—Torque.	21 N·m (186 lb·in)
Screws (C—F)—PDF Row	
Units—Torque.	35 N·m (26 lb·ft)

9. Apply Loctite 242 to nut (A) to prevent leaks.

PS9EIDU,1773943628007-19-17APR26

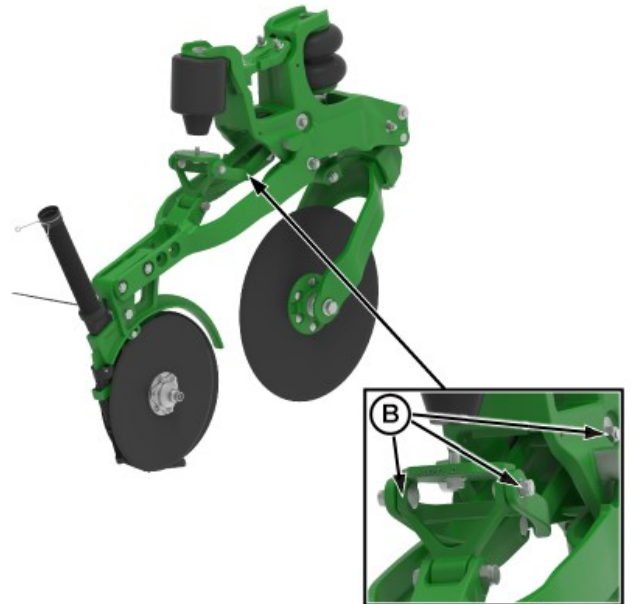
Check the Pneumatic Downforce System Spring Linkage Bushing Wear

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

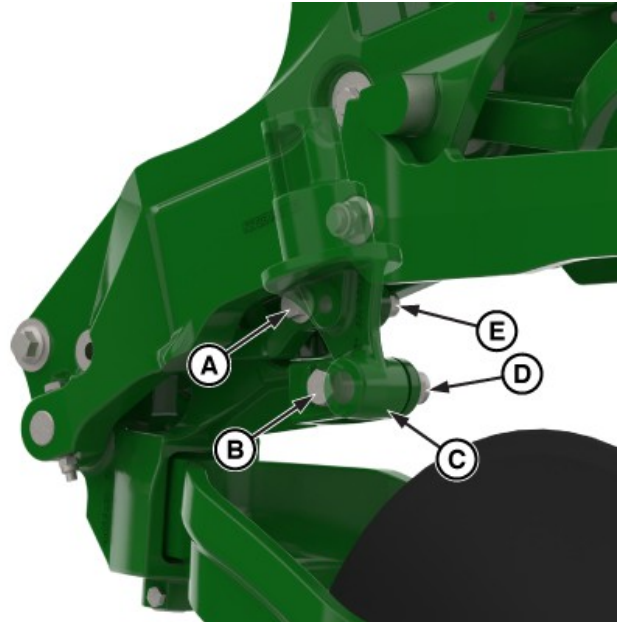
1. Park the planter on level ground.





CQ1451980—UN—20MAR26

Row Unit Air Spring Linkage Bushing Wear



CQ1451386—UN—20MAR26

Cutting Disk Air Spring Linkage

2. Clean the area around the linkage bushing wear (A—C) to remove dirt, grease, and debris.
3. Visually inspect the bushings for:
 - a. Cracks, deformation, or signs of ovalization.
 - b. Irregular or uneven wear patterns.
 - c. Evidence of bushing movement or displacement within the housing.
 - d. Grease leakage, contamination, or lack of lubrication.
4. Repeat the procedure for all the row units.
5. If necessary, replace it. (See Replace the Pneumatic Downforce System Spring Linkage Bushing Wear in this section.)

FHSSYU9,1774025315307-19-30MAR26

Replace the Pneumatic Downforce System Spring Linkage Bushing Wear

Perform this service at the start of the season.

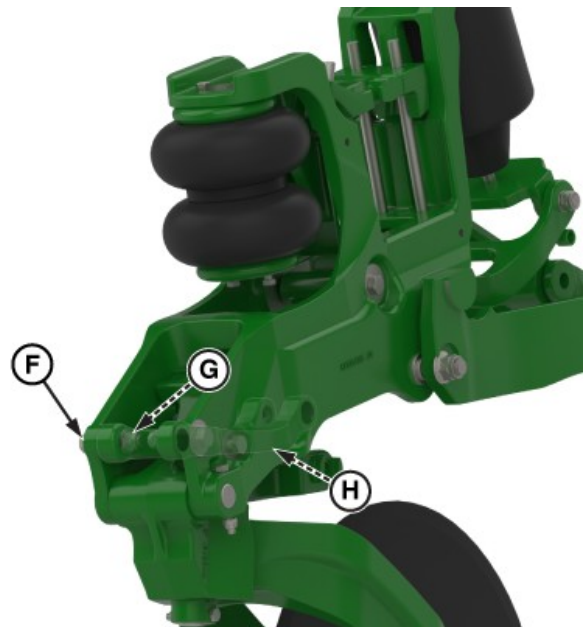
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

Cutting Disk Air Spring Linkage Bushing Wear

1. Park the planter on level ground.

2. Remove cap head screw (A) and nut (E).
3. Remove cap head screw (B) and nut (D).
4. Detach bracket (C).



CQ1451388—UN—20MAR26

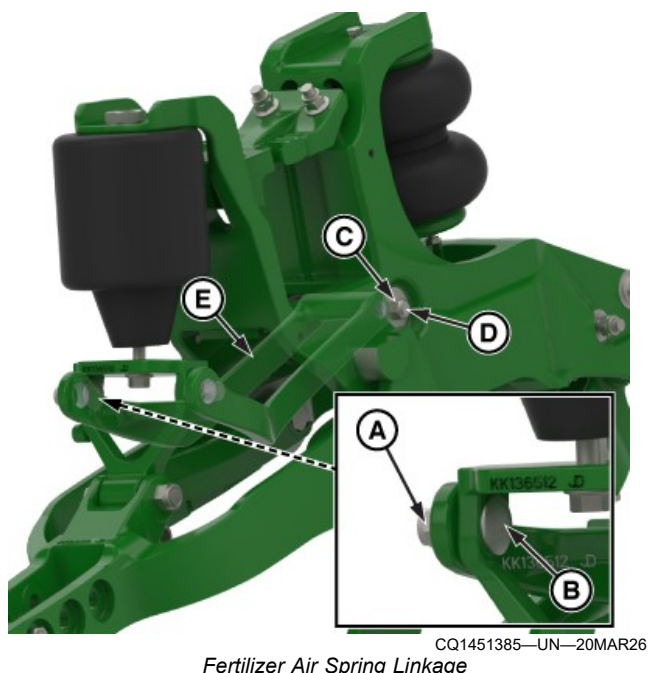
Cutting Disk Air Spring Linkage

5. Remove cap head screw (F) and nut (G).
6. Release cutting disk air spring linkage (H).
7. Replace bushing wears as needed (See Check the Pneumatic Downforce System Spring Linkage Bushing Wear in this section).

8. To assemble, follow the procedure in reverse order of removal.

Fertilizer Air Spring Linkage Bushing Wear

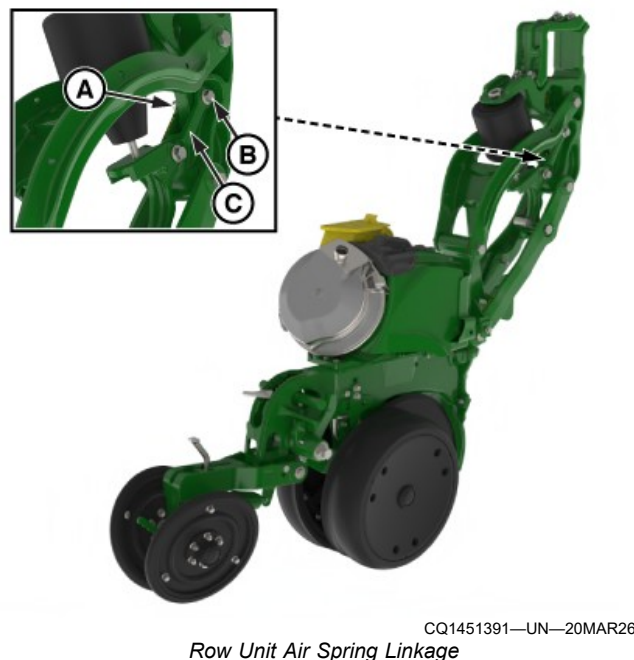
1. Park the planter on level ground.



2. Remove screw (A) and nut (B).
3. Remove screw (D) and nut (C).
4. Detach fertilizer air spring linkage (E).
5. Replace bushing wears as needed (See Check the Pneumatic Downforce System Spring Linkage Bushing Wear in this section).
6. To assemble, follow the procedure in reverse order of removal.

Row Unit Air Spring Linkage Bushing Wear

1. Park the planter on level ground.



2. Remove screw (B) and nut (A).
3. Detach row unit spring linkage (C).
4. Replace bushing wears as needed (See Check the Pneumatic Downforce System Spring Linkage Bushing Wear in this section).
5. To assemble, follow the procedure in reverse order of removal.

FHSSYU9,1774027391612-19-30MAR26

Service—Mechanical Downforce System—If Equipped

Check the Mechanical Downforce System Spring Linkage Bushing Wear

Perform this service at the start of the season.

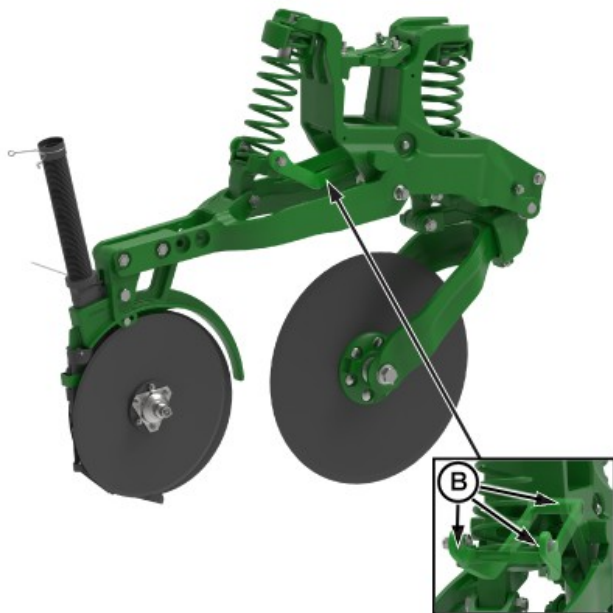
Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

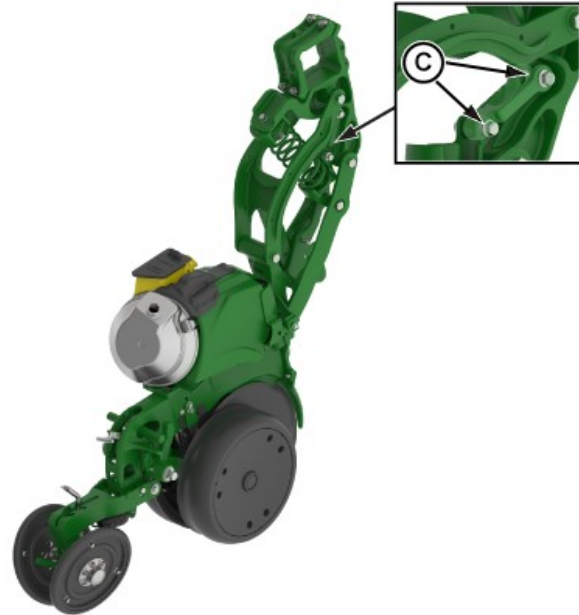
1. Park the planter on level ground.



CQ1451982—UN—20MAR26
Cutting Disk Mechanical Spring Linkage Bushing Wear



CQ1451983—UN—20MAR26
Fertilizer Mechanical Spring Linkage Bushing Wear



CQ1451984—UN—17APR26
Row Unit Mechanical Spring Linkage Bushing Wear

2. Clean the area around the linkage bushing wear (A—C) to remove dirt, grease, and debris.
3. Visually inspect the bushings for:
 - a. Cracks, deformation, or signs of ovalization.
 - b. Irregular or uneven wear patterns.
 - c. Evidence of bushing movement or displacement within the housing.
 - d. Grease leakage, contamination, or lack of lubrication.
4. Repeat the procedure for all the row units.
5. If necessary, replace it. (See Replace the Mechanical Downforce System Spring Linkage Bushing Wear in this section.)

FHSSYU9,1774033408418-19-13APR26

Replace the Mechanical Downforce System Spring Linkage Bushing Wear

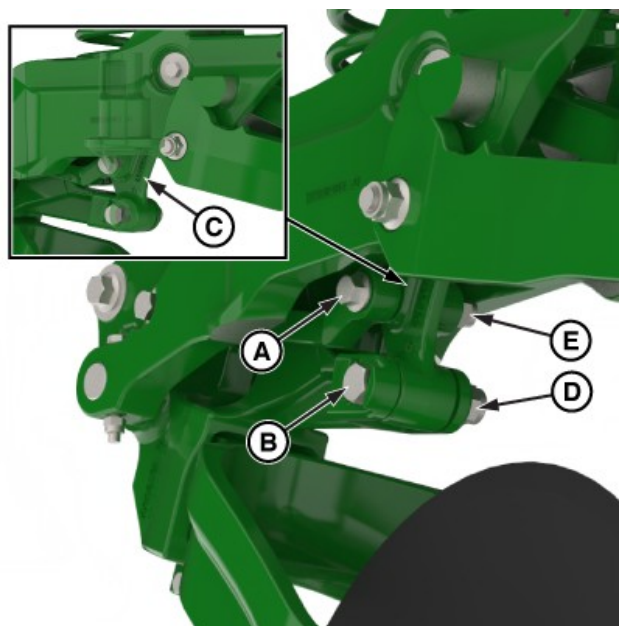
Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

Cutting Disk Mechanical Spring Linkage Bushing Wear

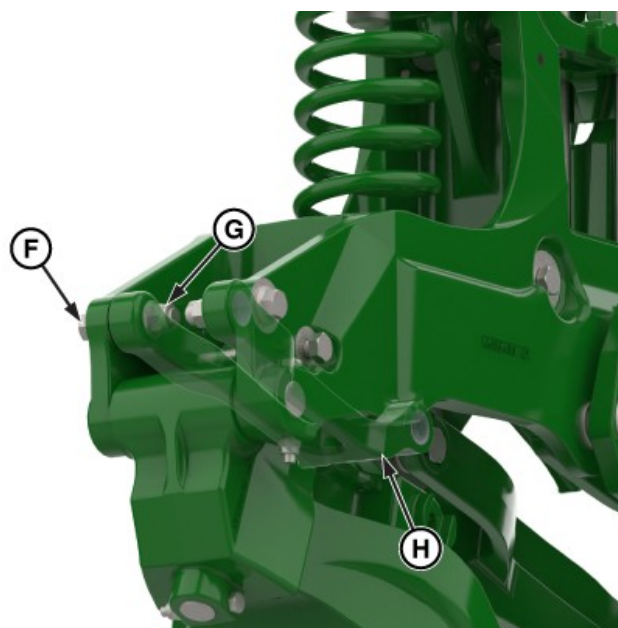
1. Park the planter on level ground.



CQ1451380—UN—20MAR26

Cutting Disk Mechanical Spring Linkage

2. Remove cap head screw (A) and nut (E).
3. Remove cap head screw (B) and nut (D).
4. Detach bracket (C).



CQ1451382—UN—20MAR26

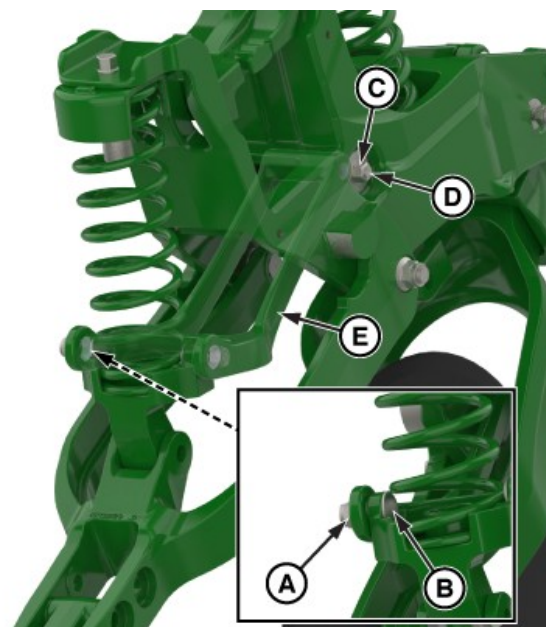
Cutting Disk Mechanical Spring Linkage

5. Remove cap head screw (F) and nut (G).
6. Release cutting disk mechanical spring linkage (H).
7. Replace bushing wears as needed (See Check the Mechanical Downforce System Spring Linkage Bushing Wear in this section).

8. To assemble, follow the procedure in reverse order of removal.

Fertilizer Mechanical Spring Linkage Bushing Wear

1. Park the planter on level ground.



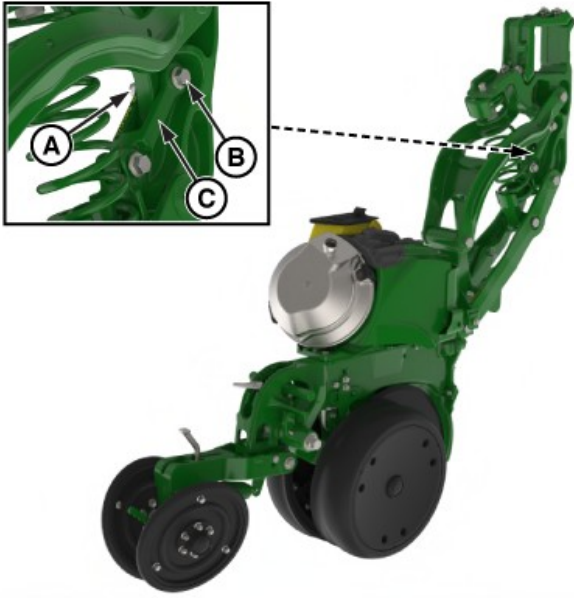
CQ1451384—UN—20MAR26

Fertilizer Mechanical Spring Linkage

2. Remove screw (A) and nut (B).
3. Remove screw (D) and nut (C).
4. Detach fertilizer mechanical spring linkage (E).
5. Replace bushing wears as needed (See Check the Mechanical Downforce System Spring Linkage Bushing Wear in this section).
6. To assemble, follow the procedure in reverse order of removal.

Row Unit Mechanical Spring Linkage Bushing Wear

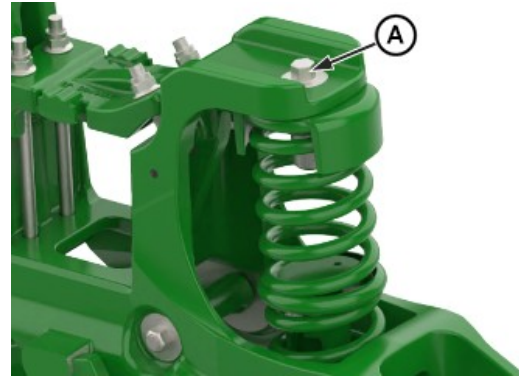
1. Park the planter on level ground.



CQ1451389—UN—20MAR26
Row Unit Mechanical Spring Linkage

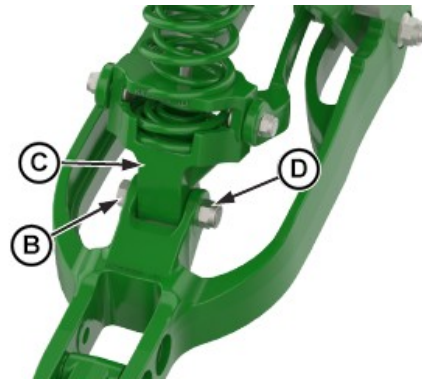
2. Remove screw (B) and nut (A).
3. Detach row unit mechanical spring linkage (C).
4. Replace bushing wears as needed (See Check the Mechanical Downforce System Spring Linkage Bushing Wear in this section).
5. To assemble, follow the procedure in reverse order of removal.

FHSSYU9,1774033448440-19-13APR26



CQ145313—UN—31MAR26

2. Reduce row pressure by turning nut (A) clockwise



CQ1451314—UN—31MAR26

3. Remove nut (D) and screw (B).
4. Remove spring holder (C) and the spring.
5. Replace the spring.
6. To install, follow the procedure in reverse order. Use the appropriate hole in the spring holder to mount the spring:

Replace the Mechanical Spring

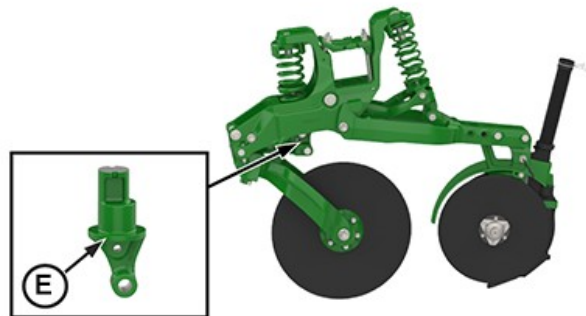
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

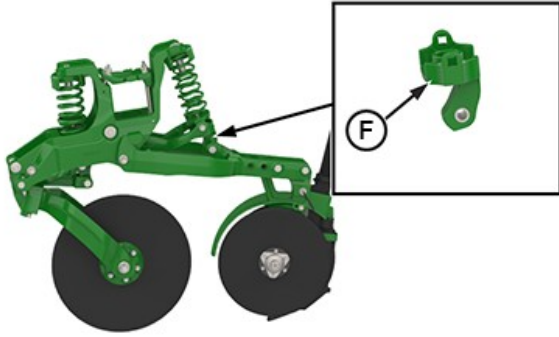
CAUTION: Avoid injury. The compression force of the spring in the assembly can hurt. Wear appropriate protective equipment.

1. Park planter on level ground.



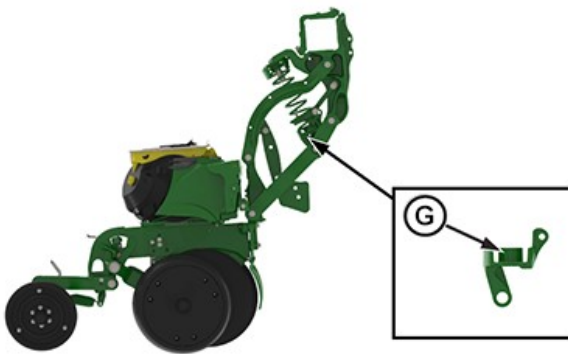
CQ1451315—UN—31MAR26

7. Cutting Disk: Install screw (B) in spring holder upper hole (E).



CQ1451316—UN—31MAR26

8. Fertilizer Furrow Opener: Install screw (B) in spring holder lower hole (F).



CQ1451318—UN—31MAR26

9. Planting Unit: Install screw (B) in spring holder lower hole (G).

NOTE: The cutting disk and fertilizer furrow opener screw (B) are different from the planting unit, so do not assemble inverted.

FHSSYU9,1776166111474-19-20APR26

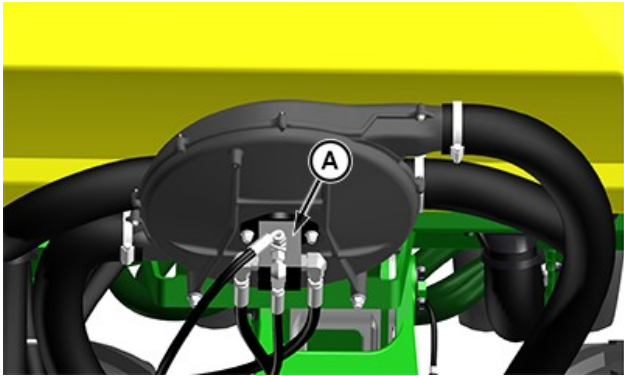
Service—Vacuum System

Check Vacuum Motor

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

NOTE: A small amount of oil leakage is acceptable.



Vacuum Motor

CQ1361884—UN—22JUL24

1. Check vacuum motor (A) for oil leaks.
2. If leakage occurs on the motor housing, check for loose hardware or fittings.
3. If oil leakage is excessive, or if vacuum levels cannot be maintained, replace vacuum motor (A).

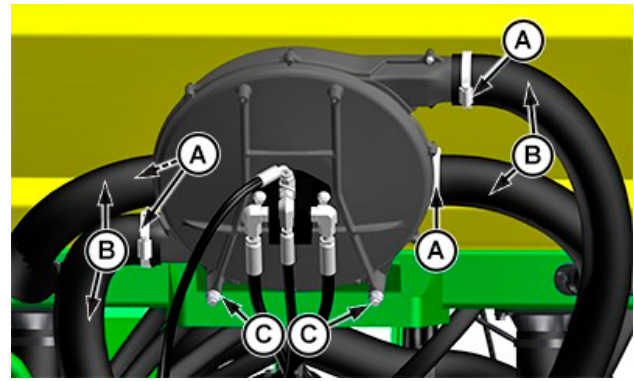
E443CH7,1750706324235-19-23JUN25

Check and Clean Vacuum Housing and Impeller

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid chemical injury. Follow the precautions of the chemical manufacturer when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.



CQ1379185—UN—11OCT24

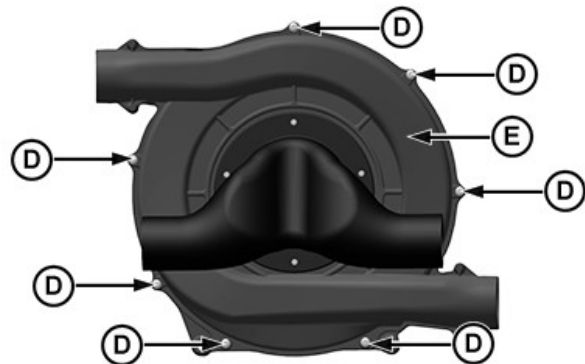
Vacuum Blower

1. Remove clamps (A) of top and lower hoses (B). Disconnect top and lower hoses (B).

CAUTION: Avoid injury. The vacuum blower is heavy. Make sure to support it properly before removing support screws (C) that fix the blower at the machine.

IMPORTANT: Avoid damage to the hydraulic lines. Make sure to support the vacuum blower properly.

2. Support the vacuum blower and remove support screws (C).



CQ1379184—UN—10OCT24

Cover of the Vacuum Blower

3. Remove cover screws (D) and cover (E).



CQ1379188—UN—10OCT24

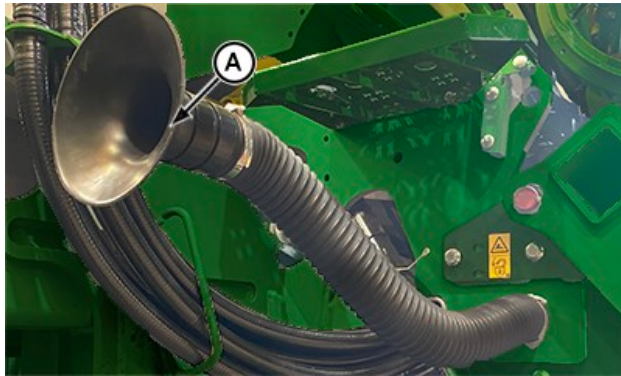
4. Clean impeller (F) and the housing.
5. Inspect impeller (F) for chips and cracks. Replace impeller (F) if damage is found. Contact a John Deere dealer or other service provider.
6. Inspect vacuum fan housing (G) for signs of impeller contact. Replace vacuum fan housing (G) and impeller (F) if contact is evident. Contact a John Deere dealer or other service provider.
7. To assemble components, follow the procedure in reverse order.

FHSSYU9,1773338754977-19-12MAR26

Check the Vacuum System Couplings

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.



CQ1372495—UN—11OCT24

1. With the machine folded, check vacuum coupling (A) for leaks and ensure that it is properly sealed.
2. Replace vacuum coupling (A), if any damage is found. Contact a John Deere dealer or other service provider.

FHSSYU9,1773338808661-19-12MAR26

Clean the Vacuum Pressure Sensor Hose

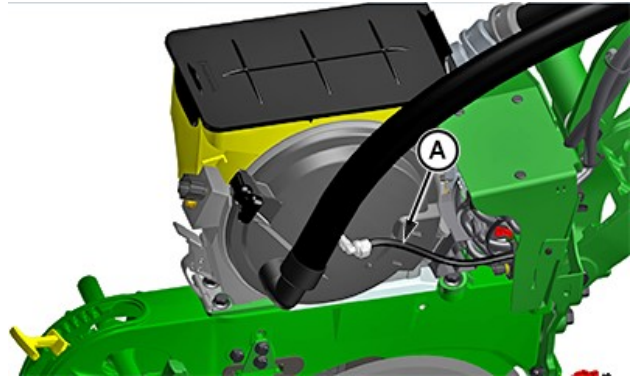
Perform this service at the start of the season and as necessary.

Make sure to comply with all the safety conditions before servicing.

CAUTION: To avoid serious injury or death, properly support the machine.

IMPORTANT: This procedure is recommended to avoid damage in the vacuum system.

1. Park the planter on level ground.



CQ1372683—UN—22JUL24

Hose of the Vacuum Pressure Sensor— MaxEmerge 5e



CQ1372748—UN—22JUL24

Hose of the Vacuum Pressure Sensor— ExactEmerge

2. Disengage hose (A), and check the system for dirt.
3. Remove hoses (A) at both sides.
4. If necessary, clean the system.

a3rfgg,1706029072216-19-09OCT24

Clean the Vacuum System

Perform this service at every 50 hours of operation and as necessary.

Make sure to comply with all the safety conditions before servicing.

Dirt or seed inoculate/treatment may build up in the vacuum system and cause low vacuum at the planting units, resulting in loss of seed metering accuracy.

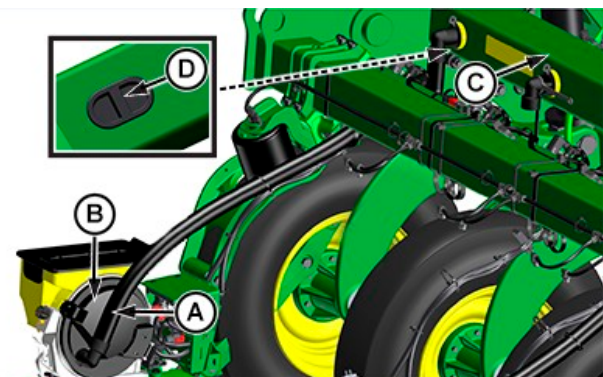
CAUTION: Avoid chemical injury. Follow the precautions of the chemical manufacturer when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.

Clean vacuum system at least once a week during operation or more often in severe dusty conditions.

Clean as follows:

1. Turn on the vacuum blowers and set the hydraulic flow to 75%.

NOTE: The image shows a MaxEmerge 5e planter and it is for reference only. The procedure for other planter models is similar.



Vacuum Hose

2. One planting unit at a time, remove vacuum hose (A) from seed meter (B).
3. Inspect and clean all the straw and/or foreign material from both attaching hose (A) ends.
4. Shake hose (A) for a few seconds, and attach it back to seed meter (B).
5. Remove the vacuum inspection plates in frame tube (C), one at a time, then reinstall it.
6. Repeat the procedure for all the planting units.

a3rfggt,1706029072163-19-09OCT24

Service—Central Commodity System (CCS)

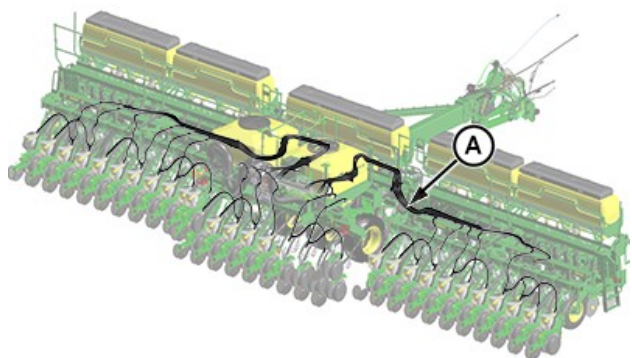
Check Central Commodity System (CCS) Hoses Routing

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1372579—UN—22JUL24

2. Check if hoses (A) are properly routed.
3. Check if hoses are folded or damaged.
4. Replace or repair it, if necessary.

a3rfggt,1706029376480-19-16JUL24

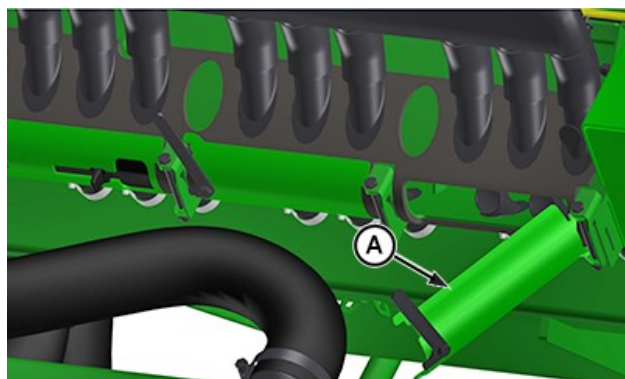
Clean Central Commodity System (CCS) Manifold

Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



CQ1372649—UN—22JUL24

2. Open cleanout door (A).

3. Check central commodity system (CCS) manifold for dirt.
4. Clean, if necessary.

a3rfggt,1706029376444-19-24SEP24

Check and Clean the Central Commodity System (CCS) Tank Level Sensors

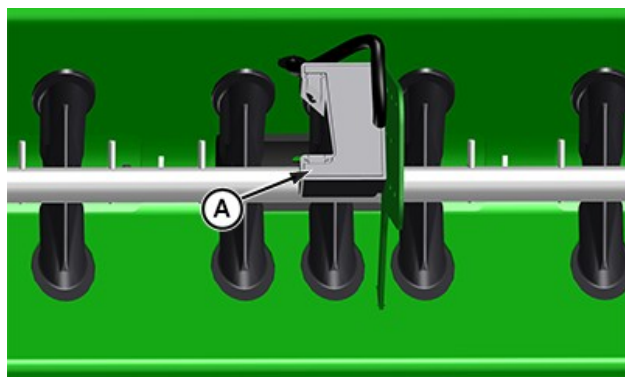
Perform this service at the start of the season and as required.

Make sure to comply with all the safety conditions before servicing.

⚠ CAUTION: Avoid serious injury or death. Properly support the machine.

To avoid errors in the central commodity system (CCS) sensor readings:

1. Park the planter on level ground.
2. Open the CCS tank.



CQ1372654—UN—22JUL24

3. Clean tank level sensor (A) before filling the CCS tanks.
4. Clean the sensor with a stiff bristled, 203 mm (8 in) wide broom with a 1.4 m (4.5 ft) long handle.
5. Check if the sensor is in perfect condition.
6. Replace, if necessary.

a3rfggt,1706029376407-19-24SEP24

Zeroing Central Commodity System (CCS) Blower Pressure Gauge

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

1. Shut off central commodity system (CCS) blower.
2. With blower gauge in a vertical position, disconnect the CCS blower monitor line to equalize the gauge with atmospheric pressure.



BM029824—UN—31OCT18

3. Use zero adjusting screw (A) to set the gauge pointer exactly on zero mark.
4. Connect the monitor line.

a3rfggt,1706029376366-19-24SEP24

Check Central Commodity System (CCS) Blower Pressure Gauge Filter

Perform this service at start of the season and as required.

Make sure to comply with all the safety conditions before servicing.



BM029860—UN—13NOV18

1. If central commodity system (CCS) blower gauge filter (A) becomes clogged with dust, clean it.
2. Replace it, if necessary.

a3rfggt,1706029376311-19-24SEP24

Troubleshooting

Frame

Symptom	Problem	Solution
Machine will not fold or unfold.	No power.	Check power source.
	Hydraulics connected improperly.	Check for correct selective control valve (SCV) hookup. (See Hydraulic Connection Recommendations in Attaching and Detaching section.)
	Fold and unfold procedures omitted.	Follow proper steps for the control box switch functions.
	Low hydraulic oil Level.	Check oil level in tractor and SCV lock out if equipped. (See your tractor Operator's Manual.)
Machine will not lower.	No power.	Check the power source.
	Hydraulics connected improperly.	Check for correct SCV hookup. (See Hydraulic Connection Recommendations in Attaching and Detaching section.)
	Service locks installed.	Check if the service locks are installed. Reposition service locks if necessary.
	SeedStar 5 frame control configuration.	Check to make sure that Plant option is selected.
	Low hydraulic oil.	Check the oil level in tractor and SCV lock out if equipped. (See your tractor Operator's Manual.)

a3rfggt,1728469410216-19-09OCT24

Vacuum Meter

NOTE: The planters use one selective control valve (SCV) for the vacuum function, and another SCV for the central commodity system (CCS) function.

NOTE: The adjust of vacuum and central commodity system (CCS) is performed only on tractor selective control valves (SCVs).

Symptom	Problem	Solution
False monitor reading.	Dirty seed tube sensors. ¹	Clean the sensors. (See Service—Planting Unit—Seed Meter and Hopper section.)

¹ Only for MaxEmerge 5e.

Troubleshooting

Symptom	Problem	Solution
No seed being planted.	The seed sensors are dirty. ²	Clean the sensors (See Check Cartridge Guard—Only for ExactEmerge in Service—Planting Unit—Seed Meter and Hopper section.)
	The seed sensors are not installed correctly. ²	Check if the seed sensor is installed against the wear guide tab.
	The planter has no vacuum pressure.	See the solutions for when the planter has low vacuum in this troubleshooting list.
	The meter drive is not engaged.	Engage the meter drive.
	Seed tubes plugged or damaged. ³	Inspect seed tubes. Ensure that seed tubes are hooked properly in the unit shank. Replace if damaged. Clean off mud with cleaning brush.
	The row unit hopper is empty.	See the section Operating the Seed Meter for the corresponding machine.
Poor seed spacing.	The BrushBelt cartridge is plugged or damaged. ²	Inspect the BrushBelt. Ensure that the cartridges are hooked properly in the unit shank. Replace if damaged. Clean off any mud with clean brush.
	The BrushBelt has no tension applied on it. ²	Apply tension onto the BrushBelt by turning the knob on the cartridge.
	Seed disk vacuum holes are plugged.	Clean seed disks. Inspect the knockout wheel assembly. Clean or replace as needed.
	Farmer-applied seed treatment causes buildup, seeds stick.	Follow recommended talc usage and application procedure. Clean the seed meter and seed disks.
	Worn meter seals.	Replace the seals.
	Seed disk hubs maladjusted.	Readjust the hubs.
	Incorrect vacuum for the seed being planted.	Adjust vacuum level to recommended setting.

² Only for ExactEmerge.

³ Only for MaxEmerge 5e.

Troubleshooting

Symptom	Problem	Solution
	Faulty vacuum gauge.	Check air line to gauge. Clean if plugged. Replace the air line if cut or damaged.
	Worn seed disks.	Replace disks.
	Seed tubes improperly installed or worn.	Reinstall or replace seed tubes. Ensure that seed tube hook is properly positioned in the unit shank.
	Treated seed sticking in cell.	Clean disks. Spray the seed disks with graphite lubricant.
	Mud inside seed tubes. ⁴	Clean off mud with cleaning brush.
	Worn seed tube guard. ⁴	Replace guard.
	The BrushBelt Cartridge is improperly installed or worn. ⁵	Reinstall or replace the BrushBelt cartridge. Check if the cartridge hook is properly positioned in the unit shank.
	There is mud inside the BrushBelt cartridge. ⁵	Remove the BrushBelt, clean it, and reinstall it.
	The seed sensor is installed improperly. ⁵	Check if the tab in the wear liner is properly positioned in the seed sensor slot. (See Operating the Seed Meter—ExactEmerge section.)
	The BrushBelt has a worn cartridge guard. ⁵	Replace cartridge guard.
Low seed population.	Seed disk vacuum holes plugged.	Clean the seed disks. Flat Type Disk: Install seed knockout assembly or replace worn seed knockout assembly.
	“Dirty” seed plugging vacuum holes.	Use clean seed. Flat Type Disk: Install seed knockout assembly or replace worn seed knockout assembly.
	Seed disk wiper missing.	Replace wiper.
	Low seed level in the CCS tank.	Add seed.

⁴ Only for MaxEmerge 5e.

⁵ Only for ExactEmerge.

Troubleshooting

Symptom	Problem	Solution
	Low seed level in meter.	See the section Operating the Seed Meter for the corresponding planter.
	"Treated" seed sticking in cells.	To warm the air, run CCS fan for 10 minutes before planting. Inspect planting unit seed meter disks. Clean if buildup is present. Add graphite lubricant to CCS tanks.
	Farmer-applied seed treatment causes buildup, seeds stick.	Discontinue use of treatments or increase use of graphite.
	Low vacuum.	Increase vacuum level.
	Foreign material (chaff) built up in vacuum dome.	Inspect dome and clean if necessary.
	Worn meter seals.	Replace the seals.
	Worn seed disks.	Replace seed disks.
	Dirty seed tube sensors, if low population is on monitor and field counts are different. ⁶	Clean seed tubes and sensors.
	Seed "bridging" in hopper or meter.	Increase rate of graphite used. Clean vacuum gauge and hopper.
	Seed "bridging" in meter.	Increase the rate of graphite used. Clean vacuum gauge and hopper.
	Inadequate seed delivery.	Increase CCS tank pressure.
	Plugged inlet or discharge elbows.	Clean elbows.
	Seed size not compatible with seed disks.	Use correct seed disks.
	Planting too fast for rough field conditions.	Plant at recommended speed. Increase vacuum. Increase unit downforce.
	The meter brush is improperly installed or worn.	Install the brush properly or replace.

⁶ Only for MaxEmerge 5e.

Symptom	Problem	Solution
	The double eliminator is set incorrectly.	Set the inner double eliminator brush at the correct position for the seed being planted. Lower the setting by one notch if seed skips occur.
	The seed sensor is installed improperly.	Verify that the tab in the wear liner is properly positioned in the seed sensor slot (See Install and Remove BrushBelt Cartridge).
	The vacuum manifold orifices are not installed.	Install the orifices in the correct locations (See either the 12-, 16-, or 24-Row versions of the vacuum manifold orifice placement.)
High seed population.	High vacuum.	Adjust vacuum level.
	Faulty vacuum sensor.	Check air line to sensor. Clean if plugged. Replace the air line if cut or damaged.
	Worn seed disks.	Replace seed disks.
	Seed size not compatible with seed disks.	Use correct seed disks.
	Planting too slow.	Plant at speed recommended in planting rate charts.
	Seed disk hubs are loose.	Tighten disk hubs.
	Mini hopper screens plugged, meter overfilled.	Clean the mini hopper screens.
	Discharge elbow holes plugged.	Clean elbows.
	CCS tanks running empty.	Fill or redistribute seed in CCS tanks.
	Double eliminator set incorrectly.	(See the section Operating the Seed Meter for the corresponding planter.)
	The seed sensor is installed improperly.	Verify that the tab in the wear liner is properly positioned in the seed sensor slot.
	The meter double eliminator or baffle brushes are improperly installed.	Install the double eliminator or baffle brushes properly. (See the section Operating the Seed Meter for the corresponding planter.)
Seed sensor tubes plugging.⁷	Machine rolling backward when lowering.	Lower machine while moving forward.

⁷ Only for MaxEmerge 5e.

Troubleshooting

Symptom	Problem	Solution
	Mud inside seed tubes.	Clean off mud with cleaning brush.
	Turning tractor steering wheel when machine is down and stationary. (Four-wheel drive or track tractors only.)	Avoid turning the tractor when machine is down and stationary.
The Brushbelt cartridge is plugging.⁸	The planter is rolling backward when lowering.	Lower the planter only while moving forward.
	There is mud inside the BrushBelt cartridge.	Remove the BrushBelt, clean it, and reinstall the cartridge.
	The operator is turning the tractor steering wheel when the planter is down and stationary. (Four-wheel drive or track tractors only.)	Avoid turning the tractor steering when the planter is down and stationary.
Inconsistent seed depth.	Planting in rough seed bed.	Increase the downforce pressure being applied to the row unit.
	Mud is building up on the depth gauge wheel tires.	Remove the mud from the depth gauge wheel tires. Avoid operating the planter in muddy planting conditions.
	Seed tubes partially plugged or improperly installed. ⁹	Inspect seed tubes. Ensure that seed tubes are hooked properly in the unit shank.
		Clean off mud with cleaning brush.
	The planter is showing excessive row unit bounce.	Operator must reduce the ground speed of the planter.
Too many skips.		Increase the downforce pressure being applied to the row unit.
	Low vacuum setting.	Increase the vacuum.
	The holes in the seed disk are plugged with debris.	Remove debris from the seed disk. Install the correct knockout wheel.
	The double eliminator setting is too aggressive.	Adjust the double eliminator one notch lower and check the results. Repeat lowering the double eliminator setting until the results remove the skips.
	Planting too fast.	Reduce the planting speed.
	Low seed level in hopper.	Increase CCS tank pressure.

⁸ Only for ExactEmerge.

⁹ Only for MaxEmerge 5e.

Troubleshooting

Symptom	Problem	Solution
	The knockout wheel is worn or damaged.	Check if the knockout wheel is engaging in the holes in the seed disk by viewing the back of the seed meter. Replace the knockout wheel as necessary.
Premature failure of the blower motor seal.	Incorrect hydraulic connections.	Verify the hose connections. (See Attaching and Detaching section.)
	High case drain pressure.	Check for 172 kPa (1.72 bar) (25 psi) or less back pressure at motor. Ensure that case drain line is connected and hose not kinked.
Low vacuum.	The orifices are installed incorrectly in the manifold tube.	See either the 12, 16, or 24-Row versions of the vacuum manifold orifice placement.
	Incorrect hydraulic connections.	Check connections. (See Attaching and Detaching section.)
	Planting unit vacuum hoses not connected to meter.	Connect vacuum hoses to meter.
	Flow control valve maladjusted.	Adjust control valve knob.
	Air manifold system clogged with dust.	Clean the air manifold system.
	Manifold hoses kinked or pinched.	To remove kinks or pinches, reposition the hoses.
	Blower guard clogged with dust or seed treatments.	Clean blower guard.
	Meter housing rubber strap not engaged.	Attach housing rubber strap to chamber.
	Meter seals worn or flipped.	Inspect seals. Reposition or replace.
	Air manifold system assembled without O-rings.	Disassemble air manifold system and add the O-rings were needed.
	Vacuum dome not closed properly.	Make sure that vacuum dome closes properly.
	Foreign material (chaff) built up in vacuum dome.	Inspect dome and clean if necessary.
Erratic vacuum.	Air manifold system clogged with dust.	Clean the air manifold system.
	Control valve failed.	Replace the flow control valve.
	Tractor oil level low.	Add oil to the tractor oil reservoir.

Troubleshooting

Symptom	Problem	Solution
	The tractor is not stabilizing the flow (when controlled with the tractor SCV).	Contact a John Deere dealer or other service provider.
	The vacuum manifold seal in the frame tube is missing or not installed correctly.	Install the vacuum manifold seal in the frame tube or straighten the existing seal.
Vacuum sensor does not zero.	Not adjusted.	Zero the adjustment on the vacuum sensor (See your SeedStar Application Help or the SeedStar Operator's Manual for additional information on zeroing the vacuum sensor).
Tractor Power Generation System is making rattling noise.	Light alternator load or low tractor RPMs.	At lower tractor RPMs and with a light alternator load on the tractor PTO gears, it is normal for a rattling noise when running the power generation system.
	The rubber grommets of the bracket are not in contact with the lower support.	Loosen the mounting bolts. Use a prying device to leverage the bracket down until the grommets are in contact with the lower support. Tighten the mounting bolts while applying leverage to the bracket.
Tractor Power Generation System showing high oil temperature on-screen.	Low oil level or grille of the alternator dirty.	Turn off the tractor.
		Clean the grille of the alternator.
		Check the oil level and the grease of the internal gear.

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CCS Fan Assembly

NOTE: The planters use one selective control valve (SCV) for the vacuum function, and another SCV for the central commodity system (CCS) function.

NOTE: The adjust of vacuum and central commodity system (CCS) is performed only on tractor selective control valves (SCVs).

Symptom	Problem	Solution
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Troubleshooting

Symptom	Problem	Solution
CCS fan motor leaks.	Case drain line crimped, not connected to low-pressure port, or connected to wrong port with high back-pressure.	Repair fan motor. To avoid future failures, be sure to connect drain line to low-pressure (sump) return on tractor or place hose in storage position. Case drain must have less than 172 kPa (1.72 bar) (25 psi).
	CCS fan motor seal leaking.	Replace the seal. Contact a John Deere dealer or other service provider.
	Case drain line pulled out of coupler on tractor.	Check the hose routing of hydraulic hoses across hitch. Ensure that the case drain is properly attached to tractor. Repair fan motor.
CCS fan not turning.	Check if valve is installed backwards.	Switch check valve orientation.
	Rockshafts are up.	Lower rockshafts.
	Fold switch on rockshaft malfunctioning.	Check for continuity with leads down.
	Selective control valve (SCV) not in continuous detent position.	Place SCV in retract detent position.
	Low hydraulic oil level.	Check and fill the reservoir.
	Tractor control valve return line not open.	Cycle control lever in opposite direction momentarily.
	CCS fan motor seal leaking.	Replace seal. Contact a John Deere dealer or other service provider.
	Faulty CCS fan motor.	Repair or replace motor. Contact a John Deere dealer or other service provider.
	Faulty CSS flow control valve (if equipped).	Repair or replace valve. Contact a John Deere dealer or other service provider.
	Row unit switch is depressed.	Lower machine to the ground and adjust the switch as needed.
	Row unit switch faulty.	Replace the switch.
	Flow control valve incorrectly set	Increase flow control setting.
CCS fan vibrates.	Return hose not fully engaged in SCV outlet.	Check the connections.
	Dirty fan blades.	Clean the fan.

Troubleshooting

Symptom	Problem	Solution
	Broken fan blades; fan out of balance.	Replace the fan blade assembly.
CCS fan surges.	Selective control valve (SCV) flow incorrectly set.	Adjust SCV flow setting.
Premature CCS fan motor seal failure.	CCS case drain not connected to sump.	Connect case drain hose to sump. Case drain must have less than 172 kPa (1.72 bar) (25 psi).
Tank pressure too low.	CCS pressure gauge was not zeroed.	Zero CCS pressure gauge.
	CCS pressure gauge hose not connected or damaged.	Reconnect or replace hose.
	Tractor flow control set too low.	Increase valve setting.
	Faulty CCS control valve.	Repair or replace valve. Contact a John Deere dealer or other service provider.
	Machine flow control valve set incorrect.	Increase valve setting.
	Tractor pressure too low.	Check and repair tractor hydraulic system. Contact a John Deere dealer or other service provider.
	CCS fan motor seal leaking.	Replace seal. Contact a John Deere dealer or other service provider.
	Faulty CCS fan motor.	Repair or replace motor. Contact a John Deere dealer or other service provider.
	CCS fan turning backward.	Check valve removed from return line. Check and correct hose connections to tractor.
	Excessive air leakage from tank.	Install lids.
	Pressure gauge broken.	Repair or replace gauge.
Pressure gauge does not zero.	Gauge not adjusted.	Zero gauge. (See Zeroing Central Commodity System (CCS) Fan Pressure Gauge in Service—Central Commodity System (CCS) section.)
	Gauge damaged.	Replace gauge.
	Moisture in gauge.	Dry out gauge.
	Suction hose plugged.	Clean or replace hose as needed.

Troubleshooting

Symptom	Problem	Solution
CCS fan turning on and off while going through the field.	Frame height too high causing the row unit switch to open and close.	Adjust frame height.
	Row unit fan switch misadjusted.	Adjust the switch.
CCS Blower/Agitator will not engage when planter lowered.	Inspect F3 10 A fuse in frame control harness.	Replace the fuse if necessary.
	Check pins 1 and 7 on tractor/planter 7-pin connector for 12 volts.	Contact a John Deere dealer or other service provider.
	Check CCS blower solenoid for magnetism.	Check the solenoids.
CCS Blower/Agitator will not engage when planter is raised.	During tank cleaning mode, the CCS remote switch is OFF.	Adjust the switch.

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CCS Product Delivery

Symptom	Problem	Solution
Plugged delivery hoses.	Foreign material in seed.	Clean seed or use lid screen.
	Tank lids were opened with CCS fan running.	Wait until CCS fan stops before opening lids.
	Excessive CCS fan pressure.	Reduce pressure.
	Tank lid open or leaking excessively.	Close and latch lid.
	Hose pinched or crushed.	Replace or repair the hose.
	Air volume too low.	Increase CCS fan speed. (See Operating the Central Commodity System (CCS) section.)
	Foreign material blocking air system.	Remove the hose by pulling straight off (do not twist) from nozzle to remove material causing plug. (See Service—Central Commodity System (CCS) section.)
	Hoses routed flat or uphill or have large droops.	Reroute hoses correctly.
	High humidity.	Use more graphite and mix thoroughly or wait for drier conditions.
	CCS fan running while not planting for excessive time.	Turn off the fan if not planting for more than a few minutes.
Uneven product distribution between row units.	Product level too low for accurate delivery.	CCS nozzle must be covered to deliver the seed.

Troubleshooting

Symptom	Problem	Solution
	Hopper screen plugged.	Remove the screen and tap until it is clear.
	Discharge elbow plugged.	Remove the elbow and clean. If necessary for seed used, make sure that gray discharge elbows are installed properly on 42 row and larger machines. (See Operating the Central Commodity System (CCS) section.)
	Air volume too low.	Increase CCS tank pressure. See CCS Seed Delivery section.
	Blockage in the air hose.	Clear air hose. (See Service—Central Commodity System (CCS) section.)
	Blockage in nozzle.	See Service—Central Commodity System (CCS) section.
	Seed compacted in tank nozzles.	Shut off the tractor, engage the park brake and remove the outlet delivery hose from the CCS tank (pull straight off—do not twist). Loosen or remove seed stuck in nozzle. Whenever planter is lowered and stationary for more than a few minutes with seed in CCS tank, shut off the tractor and turn the key to off position. Agitators run anytime planter is lowered and key is on and can cause the seed to pack into nozzles.
	Nozzle inserts installed on nozzles for planting sorghum.	Remove the nozzle inserts when not planting sorghum.
	Agitator not running.	Check fuse, power connector, and ground lead.
No seed in meter.	Air volume too low.	Check if the tank pressure is set to the recommended pressure.
	Blockage in the air hose.	Cleanout meter using tray. Reinstall the seed disk and close the vacuum dome. Start CCS fan and shake the hose vigorously near meter. Continue shaking hose closer and closer to tank. Increase tank pressure, if necessary to blow the seed out easier. If meter fills with seed, repeat process until no more seed is in hose. Check if both tank lids are securely closed.

Troubleshooting

Symptom	Problem	Solution
	Nozzle blockage inside tank.	With the park brake engaged, transmission in park and tractor turned off, remove the outlet air hose from tank. Check for obstruction and remove if found.
	Seed compacted in tank nozzles.	Shut off the tractor, engage the park brake and remove the outlet delivery hose from the CCS tank (pull straight off, do not twist). Loosen and remove seed stuck in nozzle. Whenever planter is lowered and stationary for more than a few minutes with seed in CCS tank, shut off the tractor and turn the key to off position. Agitators run anytime the planter is lowered and the key is on and can cause the seed to pack into nozzles.
	High humidity.	Use more talc and mix thoroughly or wait for drier conditions.
	CCS tank lid open.	Close lid.
	Cleanout doors on the bottom of the tank are open or leaking air.	Close doors.
	Discharge elbow plugged in the mini hopper.	Clear plug and decrease CCS tank pressure.
		If necessary for seed used, make sure that gray discharge elbows are installed properly on 36 row and larger machines. See CCS Seed Delivery section.
	Seed bridging in CCS tank.	Check if the agitator is running. Check fuse, power connector, and ground lead. See CCS Seed Delivery section.
		Increase CCS tank pressure.
		Add and thoroughly mix the graphite lubricant with seed.
Seed damage.	CCS tanks empty.	Fill CCS tanks.
	Nozzle inserts installed.	Remove nozzle inserts when planting other crops.
	Air volume too high.	Reduce CCS tank pressure.
		Add graphite.
	Old, dry seeds.	Use fresh seeds.

Troubleshooting

Symptom	Problem	Solution
Individual rows are overpopulating.	CCS tanks running empty.	Fill or redistribute the seed in the CCS tanks.
	Meter vacuum level too high.	Decrease vacuum level.
	Vacuum hopper vent plugged.	Clean vent.
	Discharge elbow vent plugged.	Clean vent holes in elbow.
Uneven or inaccurate metering or product delivery.	Product level in seed meter too low for accurate delivery.	Increase CCS tank pressure.
	Foreign material blocking product passages.	Remove all foreign material. (See Operating the Central Commodity System (CCS) section.)
	Hopper screen plugged.	Remove the screen and tap until it is clear.
	Lumps in seed.	Use clean seed. Use screens when filling tanks.
	Seed bridging in tank.	Increase CCS tank pressure. (See Operating the Central Commodity System (CCS.)
		Add and thoroughly mix graphite lubricant with seed.
	Rubber flap on meter not covering the seed tube opening in the shank.	Realign the rubber flap to sit flat on the row unit when meter is installed.
No seed flow.	Plugged seed delivery hose.	Do not raise and lower machine continuously without planting seed. (See Operating the Central Commodity System (CCS.)
		Do not operate the machine with nearly all meters out of seed as the seed hoses to rows with seed can plug. (See Operating the Central Commodity System (CCS.)
		Adjust CCS fan pressure to the recommended level.
	Cold hydraulic oil.	Run CCS fan 10 minutes before planting to warm the oil. Set tank pressure.
CCS fan surges.	Faulty flow control valve.	Replace the valve.

Troubleshooting

Symptom	Problem	Solution
CCS fan turns on and off while going through the field.	Frame height is too high causing fan switch on row unit between left-hand side main frame wheels to open and close.	Adjust the frame height.
CCS fan turns on while raising the planter.	CCS switch for tank cleaning is ON.	Adjust the switch.
CCS seed delivery flow is low.	Seed hose is pinched.	Straighten or repair the hose. Keep hoses as horizontal as possible.
	Foreign material is lodged in hose or manifold.	See CCS Seed Delivery section.
	Improper tank pressure.	Install lids. Readjust SCV. Increase CCS tank pressure by 2 in.
CCS tank low warning light not functioning.	Tank level sensor dirty.	Clean sensor LEDs with a soft brush.
	Tank low warning light burned out.	To test, unplug all harness connectors of the tank level sensors. If light does not come on, replace light inside the frame control box.

a3rfggt,1706029650381-19-09OCT24

Fertilizer

Symptom	Problem	Solution
Fertilizer metering does not function properly.	Blown fuse.	Repair or replace fuse.
	Malfunction motor.	Repair or replace motor.
	Fertilizer hose obstructed/torn/malfunction/bent.	Cleaning or replace hoses.
Irregular fertilizer metering.	Fertilizer moistened.	Use dry fertilizer.
	Build-up on inner components.	Clean meter.
	Lack of engine calibration.	Calibrate engine.
Does not reach desired fertilizer rate.	Inadequate spring.	Replace spring.
Inadequate fertilizer depth.	Furrow opener spring pressure.	Adjust spring pressure.

a3rfggt,1706029657945-19-24SEP24

Easy Fold

Symptom	Problem	Solution
Easy Fold does not operate.	The hitch height was calibrated while in the transport mode.	Perform the calibration while in the plant mode (See the SeedStar 5 manual for more information).
	The hydraulic hoses are connected incorrectly.	Follow the guidelines in Attaching and Detaching section.
	The selective control valves (SCVs) are not assigned.	See the SCV Assignment procedure in SeedStar 5 manual.
Easy Fold does not operate or stops (planters connected to a 2-point hitch).	The implement automation has not been activated.	Activate the automation. (Contact a John Deere dealer or other service provider or qualified service technician.)
	The planter is connected to an incompatible tractor.	Connect to a compatible tractor. (See Tractor Requirements on Specification section.)
	The tractor hitch-limits are too high.	Set the upper hitch limit at 98%.
		Set the lower hitch limit at 0%.
	The planter transport height is set too high.	Set the transport height at 96%.

a3rfggt,1706029650353-19-14APR26

SeedStar

Symptom	Problem	Solution
Singulation and coefficient of variation are not available.	Indicators disabled when the system limitations are exceeded. This restriction applies only to planters with ME5 or ME5e, due to the characteristics of the seed sensor (tube reading).	SeedStar 5—ExactEmerge does not have restriction.

NOTE: Row spacing 0.45 m (17.7 in) with approximate maximum system capacity 248 000 sem/ha (100 360 seeds/acre).

Row spacing 0.50 m (19.7 in) with approximate maximum system capacity 223 000 sem/ha (90 290 seeds/acre).

Row spacing 0.76 m (30 in) with approximate maximum system capacity 146 000 sem/ha (59 153 seeds/acre).

Row spacing 0.90 m (35.4 in) with approximate maximum system capacity 124 000 sem/ha (50 238 seeds/acre).

UZ9X5WJ,1768216564188-19-12JAN26

Specifications

Tractor Requirements

3119

Recommended Tractor Power^a 230 to 370 CV
Number of Required Selective Control Valves (SCVs)^b 5 eSCV
Minimum Hydraulic Pressure 19 700 kPa (197 bar) (2857 psi)
Minimum Hydraulic Flow 82.8 l/min (21.8 gal/min)
Drawbar (Optional)^a 5015 kg (11 056 lb) Category IV
Two-Point Hitch^a 4996 kg (11 014 lb) Category IV
Free Return YES
Power Beyond PDF Compressor/Inoculant Tank
Air Supply Compressor Without Air Compressor
Minimum Air Supply Flow (Compressor) 365 l/min (96.42 gal/min)
Air Supply Work Pressure (Compressor) 8 to 10 bar
ISOBUS 9-pin YES
7-pin YES
Ethernet YES

^aConsidering 1/3 full machine.

^bFor more information, see *Hydraulic Connection Recommendations* in *Attaching and Detaching* section.

CAUTION: For the 3119 frame, in all row-unit configurations, to be approved for operation with the John Deere 7M tractor, the following operational requirements must be observed:

- It is strongly recommended to use the two-point hitch system, due to its superior characteristics in terms of stability, load-carrying capability, and improved distribution of structural stresses during both field operation and transport conditions.
- It is strongly recommended that the implement be placed in transport mode with all commodity tanks completely empty, meaning no load of seeds, fertilizer, or inoculant should be present.

This requirement ensures operational safety, reduces undesired structural loads on both the frame and the hitch system, and maintains compliance with the defined structural limits for the tractor-implement combination.

3123

Recommended Tractor Power^a 295 to 440 CV
Number of Required Selective Control Valves (SCVs)^b 5 eSCV
Minimum Hydraulic Pressure 19 700 kPa (197 bar) (2857 psi)
Minimum Hydraulic Flow 82.8 l/min (21.8 gal/min)
Drawbar (Optional)^a 5569 kg (12 277 lb) Category IV or V
Two-Point Hitch^a 5615 kg (12 378 lb) Category IV
Free Return YES
Power Beyond PDF Compressor/Inoculant Tank
Air Supply Compressor Without Air Compressor
Minimum Air Supply Flow (Compressor) 365 l/min (96.42 gal/min)

Air Supply Work Pressure (Compressor) 8 to 10 bar
ISOBUS 9-pin YES
7-pin YES
Ethernet YES

^aConsidering 1/3 full machine.

^bFor more information, see *Hydraulic Connection Recommendations* in *Attaching and Detaching* section.

3127

Recommended Tractor Power^a 345 to 540 CV
Number of Required Selective Control Valves (SCVs)^b 5 eSCV
Minimum Hydraulic Pressure 19 700 kPa (197 bar) (2857 psi)
Minimum Hydraulic Flow 82.8 l/min (21.8 gal/min)
Drawbar (Optional)^a 6037 kg (13 309 lbs) Category v
Two-Point Hitch^a 6094 kg (13 434 lb) Heavy Duty
Free Return YES
Power Beyond PDF Compressor/Inoculant Tank
Air Supply Compressor Without Air Compressor
Minimum Air Supply Flow (Compressor) 365 l/min (96.42 gal/min)
Air Supply Work Pressure (Compressor) 8 to 10 bar
ISOBUS 9-pin YES
7-pin YES
Ethernet YES

^aConsidering 1/3 full machine.

^bFor more information, see *Hydraulic Connection Recommendations* in *Attaching and Detaching* section.

3131

Recommended Tractor Power^a 400 to 590 CV
Number of Required Selective Control Valves (SCVs)^b 5 eSCV
Minimum Hydraulic Pressure 19 700 kPa (197 bar) (2857 psi)
Minimum Hydraulic Flow 82.8 l/min (21.8 gal/min)
Drawbar (Optional)^a 8200 kg (18 077 lb) Category V
Two-Point Hitch^a 8695 kg (19 169 lb) Heavy Duty
Free Return YES
Power Beyond PDF Compressor/Inoculant Tank
Air Supply Compressor Without Air Compressor
Minimum Air Supply Flow (Compressor) 365 l/min (96.42 gal/min)
Air Supply Work Pressure (Compressor) 8 to 10 bar
ISOBUS 9-pin YES
7-pin YES
Ethernet YES

^aConsidering 1/3 full machine.

^bFor more information, see *Hydraulic Connection Recommendations* in *Attaching and Detaching* section.

CAUTION: For the 3131 frame, in all row-unit configurations, to be approved for operation with the John Deere 8R tractor, the following operational requirements must be observed:

- It is strongly recommended to use the two-point hitch system, due to its superior characteristics in terms of stability, load-carrying capability, and improved distribution of structural stresses during

both field operation and transport conditions.

- It is strongly recommended that the implement be placed in transport mode with all commodity tanks completely empty, meaning no load of seeds, fertilizer, or inoculant should be present.

This requirement ensures operational safety, reduces undesired structural loads on both the frame and the hitch system, and maintains compliance with the defined structural limits for the tractor–implement combination.

FHSSYU9,1774352280990-19-13APR26

Frame Specifications

Frame Specifications

Frame Type Three sections. And, it has front folding.
Maximum Inclination of Side Sections 15° up and 15° down
Vertical oscillation of rows 300 mm up and 225 mm down
3119 and 3123 Lift Cylinders: 2 Center Wheels and 2 Wing Wheels
3127 and 3131 Lift Cylinders: 2 Center Wheels and 3 Wing Wheels
Drawbar Cylinder (If equipped) 1
Hitch Lock Cylinder 2
Folding Cylinder 2
Rockshaft Cylinder 2

a3rfggt,1706030484695-19-24SEP24

Rows and Spacing Specifications

3119 Planters

Option 1 19 rows of 45 cm (17.7 in)
Option 2 18 rows of 50 cm (19.7 in)

Option 3 16 rows of 52.5 cm (20.7 in)
Option 4 15 rows of 60 cm (23.6 in)
Option 5 12 rows of 70 cm (27.5 in)
Option 6 12 rows of 76 cm (29.9 in)
Option 7 10 rows of 90 cm (35.4 in)

3123 Planters

Option 1 23 rows of 45 cm (17.7 in)
Option 2 20 rows of 50 cm (19.7 in)
Option 3 20 rows of 52.5 cm (20.7 in)
Option 4 17 rows of 60 cm (23.6 in)
Option 5 14 rows of 70 cm (27.5 in)
Option 6 14 rows of 76 cm (29.9 in)
Option 7 12 rows of 90 cm (35.4 in)

3127 Planters

Option 1 27 rows of 45 cm (17.7 in)
Option 2 24 rows of 50 cm (19.7 in)
Option 3 24 rows of 52.5 cm (20.7 in)
Option 4 21 rows of 60 cm (23.6 in)
Option 5 18 rows of 70 cm (27.5 in)
Option 6 16 rows of 76 cm (29.9 in)
Option 7 14 rows of 90 cm (35.4 in)

3131 Planters

Option 1 31 rows of 45 cm (17.7 in)
Option 2 28 rows of 50 cm (19.7 in)
Option 3 26 rows of 52.5 cm (20.7 in)
Option 4 23 rows of 60cm (23.6 in)
Option 5 20 rows of 70 cm (27.5 in)
Option 6 18 rows of 76 cm (29.9 in)
Option 7 16 rows of 90 cm (35.4 in)

FHSSYU9,1774353982391-19-24MAR26

Tire Specification

Tire Size	Tire Pressure		
	kPa	bar	psi
Center Frame Tires 400/55 - 22.5 147/159 A8	551	5.5	80
Wing Frame Tires 7.50 - 16 12PR	468	3.9	68

NOTE: 3119 and 3123 are equipped with 2 center wheels, and 2 wheels for each wing.

3127 and 3131 are equipped with 2 center wheels, and 3 wheels for each wing.

a3rfggt,1706030484529-19-24SEP24

Planting Unit Specifications

Planter Model	3119	3123	3127	3131
CCS ^a Blower	1			
Vacuum Blowers	2			
Row Pressure System ^{bc}	Up to 3 (if equipped)			
Row Type and Available Meter Technology	ExactEmerge with air spring			
	MaxEmerge 5e Offset with mechanical spring			
	MaxEmerge 5e Offset with air spring			
	MaxEmerge 5e EmergePro with mechanical spring			
	MaxEmerge 5e EmergePro with air spring			

^aCentral Commodity System

^bWith MaxEmerge 5e, if the planting row is mechanical, the cutting disk and fertilizer row are also mechanical. If the planting row is pneumatic, the cutter disk and fertilizer row can be pneumatic or mechanical.

^cWith ExactEmerge, if the planting row is pneumatic, the cutting disk and fertilizer row can be pneumatic or mechanical.

a3rfggt,1706030484332-19-24SEP24

Fertilizer Unit Specification

Fertilizer Unit Specification	3119	3123	3127	3131
Furrow Opener Type	Double Disk or Chisel			
System of Row Pressure	Mechanical or Pneumatic Downforce (PDF)			

NOTE: If the furrow opener is equipped with Pneumatic Downforce (PDF), the planting unit must also be equipped with PDF.

a3rfggt,1706030526840-19-24SEP24

Fertilizer Unit Specification

Fertilizer Unit Specification	3119	3123	3127	3131
Furrow Opener Type	Double Disk or Chisel			
System of Row Pressure	Mechanical or Pneumatic Downforce (PDF)			

Capability

Models	Tanks	Capability
3119FT	3 tanks	2974 L (306,4 gal)
3123FT	3 tanks	3375 L (891,6 gal)
3127FT	5 tanks	3829 L (1011,5 gal)
3131FT	5 tanks	4725 L (1248,2 gal)

NOTE: If the furrow opener is equipped with Pneumatic Downforce (PDF), the planting unit must also be equipped with PDF.

UZ9X5WJ,1754920473277-19-11AUG25

Estimated Weights—Empty

3123

Planter Empty (If Equipped with Two-point Hitch) 17 574 kg (38 744 lb)

Planter Empty (If Equipped with Drawbar) . . 17 594 kg (38 788 lb)

Specifications

3131

Planter Empty (If Equipped with Two-point hitch). 21 950 kg (48 391 lb)

Planter Empty (If Equipped with Drawbar) . . 21 597 kg (47 613 lb)

a3rfggt, 1706030484170-19-24SEP24

Dimensions

Transport Length (If Equipped with Two-point Hitch). 12.75 m (501.9 in)

Transport Length (If Equipped with Drawbar) . . . 13.50 m (531.4 in)

Transport Height (Highway) 3.85 m (151.5 in)

Transport Height (Truck). 3.60 m (141.7 in)

Transport Width (Between Fields) 4.80 m (188.9 in)

Transport Width (Highway) 3.20 m (125.9 in)

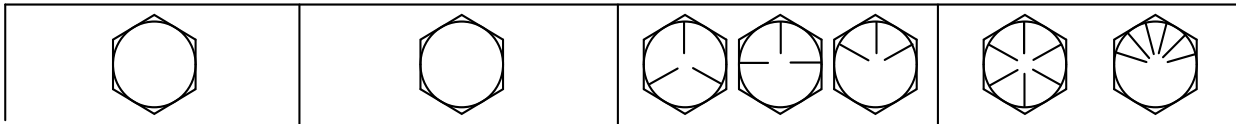
Transport Width (Truck) 3.20 m (125.9 in)

Work Width

3123	3131
10,765 m (423.8 in)	14,450 m (568.8 in)

a3rfggt, 1706030484047-19-24SEP24

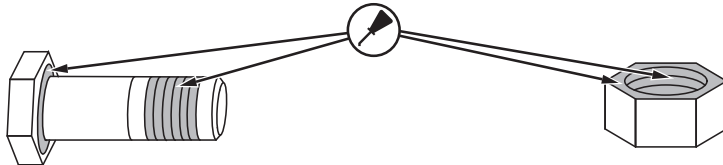
Unified Inch Cap Screw Torque Values



TS1671—UN—01MAY03

Cap Screw Size	SAE Grade 1 ^a				SAE Grade 2 ^b				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d		Hex Head ^c		Flange Head ^d	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
1/4	3.1	27.3	3.2	28.4	5.1	45.5	5.3	47.3	7.9	70.2	8.3	73.1	11.2	99.2	11.6	103
													N·m	lb·ft	N·m	lb·ft
5/16	6.1	54.1	6.5	57.7	10.2	90.2	10.9	96.2	15.7	139	16.8	149	22.2	16.4	23.7	17.5
									N·m	lb·ft	N·m	lb·ft				
3/8	10.5	93.6	11.5	102	17.6	156	19.2	170	27.3	20.1	29.7	21.9	38.5	28.4	41.9	30.9
					N·m	lb·ft	N·m	lb·ft								
7/16	16.7	148	18.4	163	27.8	20.5	30.6	22.6	43	31.7	47.3	34.9	60.6	44.7	66.8	49.3
	N·m	lb·ft	N·m	lb·ft												
1/2	25.9	19.1	28.2	20.8	43.1	31.8	47	34.7	66.6	49.1	72.8	53.7	94	69.3	103	75.8
9/16	36.7	27.1	40.5	29.9	61.1	45.1	67.5	49.8	94.6	69.8	104	77	134	98.5	148	109
5/8	51	37.6	55.9	41.2	85	62.7	93.1	68.7	131	96.9	144	106	186	137	203	150
3/4	89.5	66	98	72.3	149	110	164	121	230	170	252	186	325	240	357	263
7/8	144	106	157	116	144	106	157	116	370	273	405	299	522	385	572	422
1	216	159	236	174	216	159	236	174	556	410	609	449	785	579	860	634
1-1/8	305	225	335	247	305	225	335	247	685	505	751	554	1110	819	1218	898
1-1/4	427	315	469	346	427	315	469	346	957	706	1051	775	1552	1145	1703	1256
1-3/8	564	416	618	456	564	416	618	456	1264	932	1386	1022	2050	1512	2248	1658
1-1/2	743	548	815	601	743	548	815	601	1665	1228	1826	1347	2699	1991	2962	2185
The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench. DO NOT use these values if a different torque value or tightening procedure is given for a specific application.									Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.							

Specifications

Cap Screw Size	SAE Grade 1 ^a		SAE Grade 2 ^b		SAE Grade 5, 5.1 or 5.2		SAE Grade 8 or 8.2	
	Hex Head ^c	Flange Head ^d	Hex Head ^c	Flange Head ^d	Hex Head ^c	Flange Head ^d	Hex Head ^c	Flange Head ^d
For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.								
• Make sure that fastener threads are clean. • Apply a thin coat of Hy-Gard or equivalent oil under the head and on the threads of the fastener, as shown in the following image. • Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil. • Properly start thread engagement.								
								

TS1741—UN—22MAY18

TS1741—UN—22MAY18

^aGrade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of screws of any length.

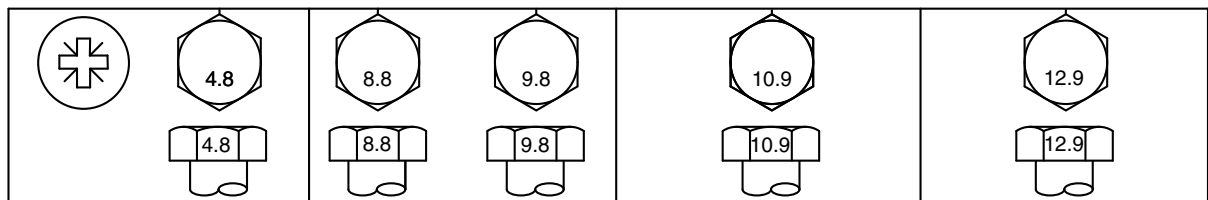
^bGrade 2 applies for hex cap screws (not hex cap screws) up to 6 in (152 mm) long.

^cHex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

^dHex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

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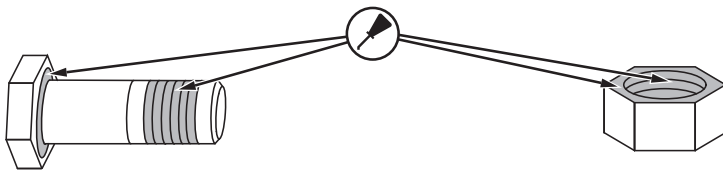
Metric Cap Screw Torque Values



TS1742—UN—31MAY18

Cap Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b		Hex Head ^a		Flange Head ^b	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112
									N·m	lb·ft	N·m	lb·ft	N·m	lb·ft	N·m	lb·ft
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3
			N·m	lb·ft	N·m	lb·ft	N·m	lb·ft								
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3
	N·m	lb·ft														
M12	—	—	—	—	55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4
M14	—	—	—	—	87	64.2	96	70.8	128	94.4	141	104	150	111	165	122
M16	—	—	—	—	135	99.6	149	110	198	146	219	162	232	171	257	190
M18	—	—	—	—	193	142	214	158	275	203	304	224	322	245	356	263
M20	—	—	—	—	272	201	301	222	387	285	428	316	453	334	501	370
M22	—	—	—	—	365	263	405	299	520	384	576	425	608	448	674	497
M24	—	—	—	—	468	345	518	382	666	491	738	544	780	575	864	637
M27	—	—	—	—	683	504	758	559	973	718	1080	797	1139	840	1263	932
M30	—	—	—	—	932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265
M33	—	—	—	—	1258	928	1398	1031	1788	1319	1986	1465	2092	1543	2324	1714
M36	—	—	—	—	1617	1193	1789	1319	2303	1699	2548	1879	2695	1988	2982	2199

Specifications

Cap Screw Size	Class 4.8		Class 8.8 or 9.8		Class 10.9		Class 12.9	
	Hex Head ^a	Flange Head ^b	Hex Head ^a	Flange Head ^b	Hex Head ^a	Flange Head ^b	Hex Head ^a	Flange Head ^b
The nominal torque values listed are for general use only with the assumed wrenching accuracy of 20%, such as a manual torque wrench. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application.					Replace fasteners with the same or higher property class. If higher property class fasteners are used, tighten these to the strength of the original.			
• Make sure that fastener threads are clean. • Apply a thin coat of Hy-Gard or equivalent oil under the head and on the threads of the fastener, as shown in the following image. • Be conservative with the amount of oil to reduce the potential for hydraulic lockup in blind holes due to excessive oil. • Properly start thread engagement.								
								
TS1741—UN—22MAY18								

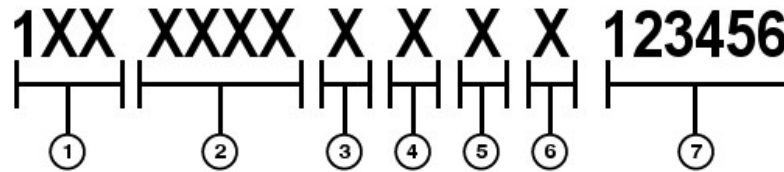
^aHex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.

^bHex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2(T)-19-25MAR26

Serial Numbers

Interpreting Machine Serial Number



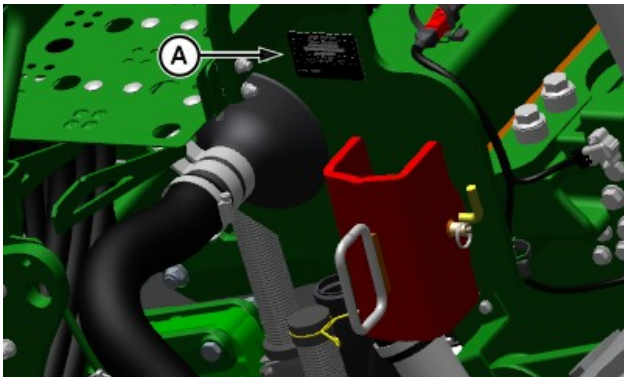
H105725—UN—22AUG12

1	Manufacturer Code	AX - John Deere Seeding Group BM - John Deere Montenegro CC - John Deere Arc-les-Gray CD - John Deere Usine De Saran CE - John Deere Iberica Getafe CJ - John Deere Nigel CP - John Deere Tianjin Works CQ - John Deere Horizontina DM - John Deere Roberine Enschede DW - John Deere Davenport Works DX - Deere & Company EK - John Deere Orenburg EX - John Deere Ottumwa Works FD - DCEO-Mannheim FX - DCEO-Mannheim GX - John Deere Power Products H0 - John Deere Harvester Works J0 - Industrias John Deere Argentina S.A. JZ - John Deere Domodedovo KM - Kemper KV - Knoxville LG - Mannheim 5x20 LV - John Deere Augusta Works L0 - John Deere Werke Mannheim MC - DCEO Parts Marketing MX - John Deere Horicon Works MY - John Deere Sirhind Works	N4 - John Deere Ningbo Works NF - John Deere Tianjin Tractor Co.,Ltd NW - John Deere Catalão N0 - John Deere Des Moines Works PC - John Deere Intelligent Solutions Group PX - Industrias John Deere S.A. de C.V. PY - John Deere India Pvt. Ltd RG - John Deere Power Systems RW - John Deere Waterloo Works SA - SABO Gummersbach T8 - John Deere Thibodaux TC - John Deere Turf Care TX - Worldwide Construction And Forestry Division TY - John Deere Merchandise Division WX - John Deere Welland Works WZ - John Deere Fabrick Horst B.V. XJ - Ashok Leyland John Deere Construction Equipment Company, Pvt. Ltd. XU - Xuzhou XCG John Deere Machinery Manufacturing Co., Ltd. YC - John Deere Jiamusi Agricultural Machinery YH - John Deere Harbin Works YN - John Deere Tianjin Construction Works YZ - John Deere Coffeyville Works ZT - JDI GmbH-ISB Z0 - John Deere Werke Zweibrücken 9Q - John Deere Water
2	Machine Model Identifier		
3	Model Identifier Suffix Machine Configuration Code Additional Machine Information		Example: N, T, W, etc.
4	Check Letter		Example: A, B, C, D, etc.
5	Calendar Year of Manufacture		Refer to Year of Manufacture Code table
6	Additional Information		
7	Manufacturing Serial Number		Example: 000001, 000127, etc.

Year of Manufacture Code							
Year	Code	Year	Code	Year	Code	Year	Code
2008	8	2018	J	2028	W	2038	8
2009	9	2019	K	2029	X	2039	9
2010	A	2020	L	2030	Y	2040	A
2011	B	2021	M	2031	1	2041	B
2012	C	2022	N	2032	2	2042	C
2013	D	2023	P	2033	3	2043	D
2014	E	2024	R	2034	4	2044	E
2015	F	2025	S	2035	5	2045	F
2016	G	2026	T	2036	6	2046	G
2017	H	2027	V	2037	7	2047	H

a3rfggt,1716203238770-19-20MAY24

Machine Identification Plate



CQ1380909—UN—24OCT24

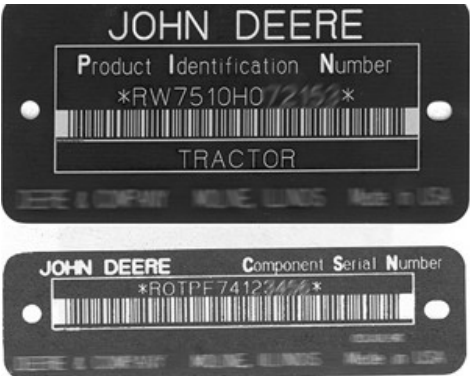
A—Serial Number Plate

Serial number plate (A) is on the main frame lateral, near the center wheels. Record in the spaces provided.

Machine Model	
Serial Number	

a3rfggt,1706031694450-19-24OCT24

Keep Proof of Ownership

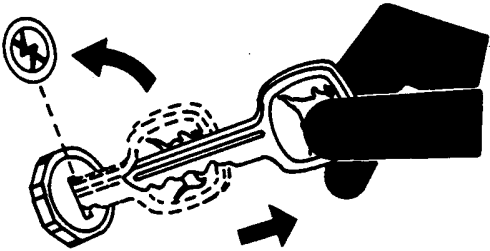


TS1680—UN—09DEC03

1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.
3. Other steps you can take:
 - Mark your machine with your own numbering system
 - Take color photographs from several angles of each machine

DX,SECURE1-19-18NOV03

Keep Machines Secure



TS230—UN—24MAY89

1. Install vandal-proof devices.
2. When machine is in storage:
 - Lower equipment to the ground
 - Set wheels to widest position to make loading more difficult
 - Remove any keys and batteries
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify your John Deere dealer of any losses.

DX,SECURE2-19-18NOV03

Lubrication and Service Records

How to Use the Service Records

NOTE: For specific and detailed service and maintenance information, refer to the appropriate system service section in this Manual.

In this section, you find a summary of all the machine services, divided by their respective intervals.

For each service interval, a chart is provided for recording maintenance and service information. Use a pen to record the following fields, each time a service interval is reached:

- **Date:** Fill in the date the service is performed.
- **Machine Hours:** Fill in the current working hours of the machine.
- **Signature:** Field intended for signature of the responsible dealer or service provider.

Always keep all charts updated to create a historical record of all service and maintenance done on your machine. Such information can help dealers or other service providers with better troubleshooting, and even add more value to your machine in a sale.

KK69021,00009B2-19-17JUL25

Service—Start of Season

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check electrical routing and connectors.
- Check ethernet switch dust cap.
- Clean the electronic power take-off (EPTO) alternator.
- Check and clean planter wheel motion sensor.
- Clean the electronic power take-off (EPTO) alternator gear case.
- Lubricate the electronic power take-off (EPTO) alternator gear case coupling.
- Check the electronic power take-off (EPTO) alternator gear case oil level.
- Change the electronic power take-off (EPTO) alternator gear case oil.
- Lubricate the central frame lift cylinders.
- Lubricate the fold cylinders.
- Lubricate the wing frame lift cylinders.
- Lubricate the rockshaft cylinders.
- Lubricate the hitch tube cylinder (if equipped).
- Check the center frame wheel screws torque.
- Check the wing wheel screws torque.
- Check the wing wheel bracket torque.
- Check the wing wheel clamp torque.
- Lubricate the center wheel hub.
- Lubricate the center wheel pivots.
- Lubricate the wing wheel pivots.
- Lubricate the central frame lift pivots.
- Lubricate the swing arm fold pivots.
- Lubricate the swing arm flex pivots.
- Lubricate the hitch link (if equipped).
- Lubricate the two-point hitch pivot (if equipped).
- Lubricate the two-point hitch head pivot (if equipped).
- Lubricate the front hitch pivots (if equipped).
- Lubricate the rear hitch pivots (if equipped).
- Lubricate the wishbone pivot.
- Lubricate the central commodity system (CCS) extension pivots.
- Lubricate the rockshaft pivots.
- Check the coulter support screws torque.
- Check the coulter cast bracket torque.
- Check the coulter hub screw torque.
- Check the coulter bearings.
- Check the coulter bushing and pin.
- Check double disks blade bearings.
- Check and adjust the double disk blade.
- Check the double disk blade scrapers.
- Check and adjust the double disk blade (MaxEmerge 5e offset only).
- Check the double disk blade scrapers (MaxEmerge 5e offset only).
- Check chisel tip wear.
- Clean the fertilizer boxes.
- Clean the fertilizer meters.
- Check the fertilizer meters electric drive operation.
- Lubricate the fertilizer meter bearings.
- Check double disk blade bearings.
- Check the bracket clamp torque.
- Check and adjust the double disk blade.
- Check the double disk blade scrapers.
- Check the depth gauge wheel pivot arm torque.
- Check depth gauge wheel bearings.
- Check scraper rings (if equipped).
- Check closing wheel bearings.
- Clean seed delivery system.
- Clean seed tube (only for MaxEmerge 5e).
- Clean BrushBelt cartridge (only for ExactEmerge).
- Clean seed meter.
- Clean row unit hopper screen (only for MaxEmerge 5e).

- Inspect and service the seed meter (only for MaxEmerge 5e).
- Inspect and service the seed meter (only for ExactEmerge).
- Adjust the meter latch (only for ExactEmerge).
- Check cartridge guard (only for ExactEmerge).
- Lubricate vacuum seal and seed disk.
- Drain the pneumatic downforce (PDF) system tank.
- Check the pneumatic downforce (PDF) system pressure sensors.
- Change the pneumatic downforce (PDF) compressor oil.
- Check for pneumatic downforce (PDF) system connectors leaks.
- Check for leaks on pneumatic downforce (PDF) system air springs.
- Check vacuum motor.

- Check the pneumatic downforce system spring linkage bushing wear.
- Check the mechanical downforce system spring linkage bushing wear.
- Check and clean vacuum housing and impeller.
- Clean the vacuum pressure sensor hose.
- Check the vacuum system couplings.
- Check central commodity system (CCS) hoses routing.
- Clean central commodity system (CCS) manifold.
- Check and clean the central commodity system (CCS) tank level sensors.
- Check central commodity system (CCS) blower pressure gauge filter.
- Check the meter protective cap.

FHSSYU9,1773665249720-19-20MAR26

Service—First 10 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check the center frame wheel screws torque.
- Check the wing wheel bracket torque.
- Check the wing wheel clamp torque.
- Check the coulter support screws torque.
- Check the coulter cast bracket torque.
- Check the bracket clamp torque.
- Check the depth gauge wheel pivot arm torque.

a3rfggt,1734610987545-19-19DEC24

Service—First 20 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Change the pneumatic downforce (PDF) compressor oil.

a3rfggt,1706035743008-19-09JUL24

Service—First 50 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check the coulter hub screw torque.

a3rfggt,1706035890973-19-18JUL24

Service—First 100 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check the coulter cast bracket torque.

a3rfggt.1720524302115-19-09JUL24

Service—Every 50 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Lubricate the fertilizer double disk bearings.
- Lubricate double disk blade hub (MaxEmerge 5e offset only).
- Lubricate the depth gauge wheel hub (MaxEmerge 5e offset only).
- Lubricate the closing wheels hub (MaxEmerge 5e offset only).
- Clean BrushBelt cartridge (only for ExactEmerge).
- Lubricate vacuum seal and seed disk.
- Clean the pneumatic downforce (PDF) compressor air filter.
- Clean the vacuum system.

a3rfggt.1706035742736-19-18JUL24

Service—Every 100 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Clean the electronic power take-off (EPTO) alternator gear case.
- Lubricate the electronic power take-off (EPTO) alternator gear case coupling.
- Check the electronic power take-off (EPTO) alternator gear case oil level.
- Lubricate the center wheel hub.
- Lubricate the center wheel pivots.
- Lubricate the wing wheel pivots.
- Lubricate the central frame lift pivots.
- Lubricate the swing arm flex pivots.
- Lubricate the two-point hitch pivot (if equipped).
- Lubricate the two-point hitch head pivot (if equipped).
- Lubricate the depth gauge wheel arms (MaxEmerge 5e EmergePro and Exact Emerge).
- Replace the pneumatic downforce (PDF) compressor air filter.

a3rfggt,1706035742600-19-10OCT24

Service—Every 200 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Change the electronic power take-off (EPTO) alternator gear case oil.

UZ9X5WJ,1749815133637-19-13JUN25

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John Deere Service Literature Available

John Deere Parts



TS100—UN—23AUG88

We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.

DX,IBC,A-19-04JUN90

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!

DX,IBC,C-19-04JUN90

Prompt Service



TS103—UN—23AUG88

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances: see us, depend on us.

JOHN DEERE SERVICE SUPERIORITY: We'll be around when you need us.

DX,IBC,D-19-04JUN90

The Right Tools



TS101—UN—23AUG88

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.

DX,IBC,B-19-04JUN90

Well-Trained Technicians



TS102—UN—23AUG88

