DB Series Planters (140100—160099)

JOHN DEERE

OPERATOR'S MANUAL

DB Series Planters (140100—160099)

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John Deere Horizontina
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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 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 the implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I. N.) in the Specification section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order 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 from your dealer

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.

THE TIRE MANUFACTURER'S warranty applicable to your machine may not apply outside the U.S.

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.

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Company Info

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Cep: 98920-000 - Horizontina-RS - Brasil
CNPJ: 89.674.782/0001-58

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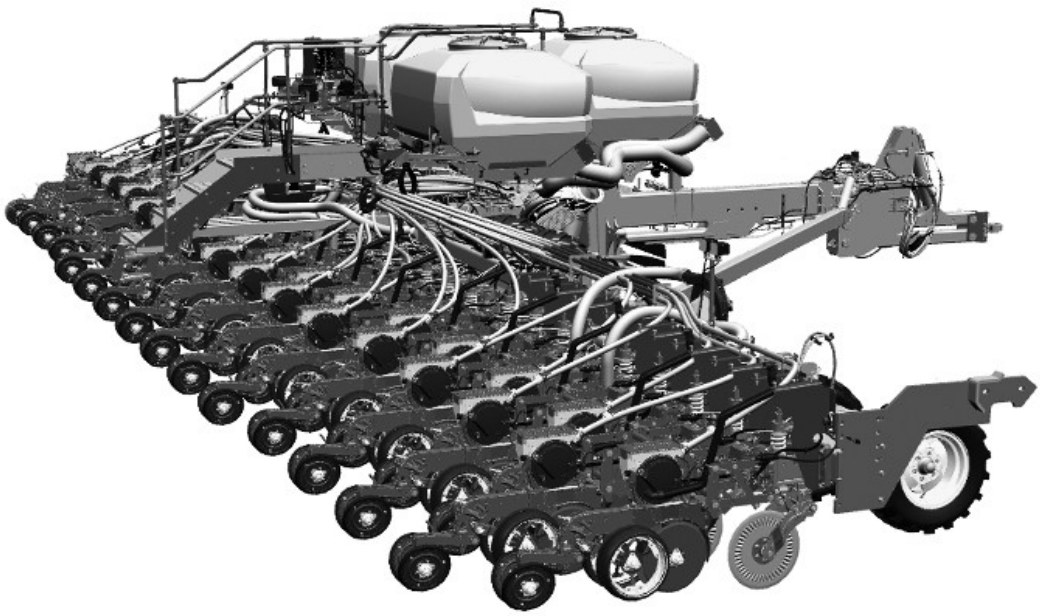
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General View



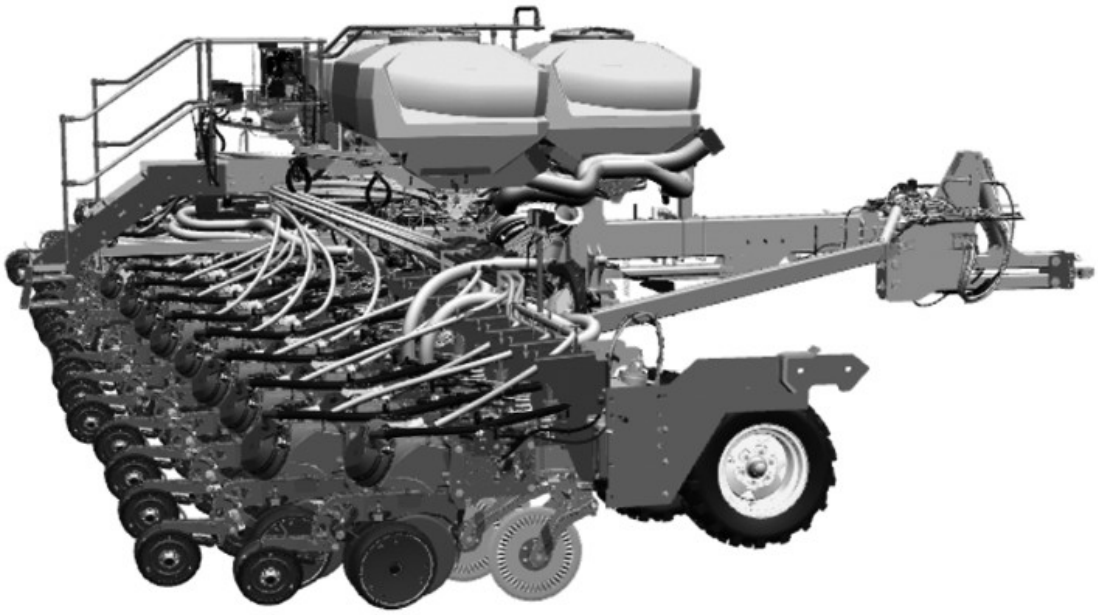
BML020637—UN—03MAY21

DB Planters—MaxEmerge 5



BML020636—UN—03MAY21

DB Planters—MaxEmerge 5e



BML020635—UN—03MAY21

DB Planters—ExactEmerge

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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



TS187—19—30SEP88

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

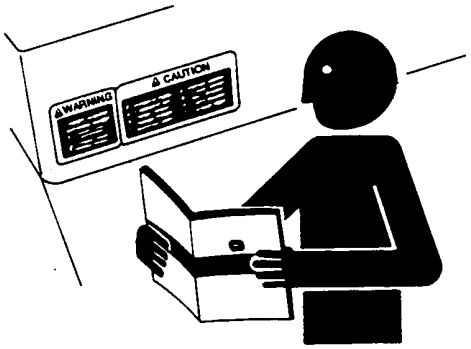
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

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. 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 your 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.

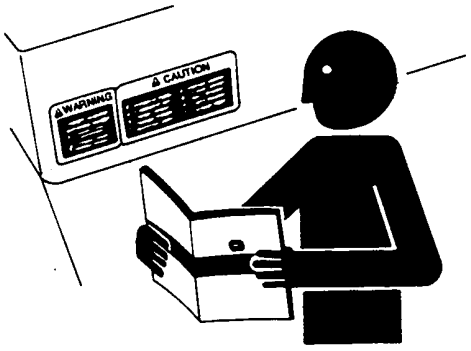
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

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 your John Deere dealer.

DX,READ-19-01AUG22

Replace Safety Signs



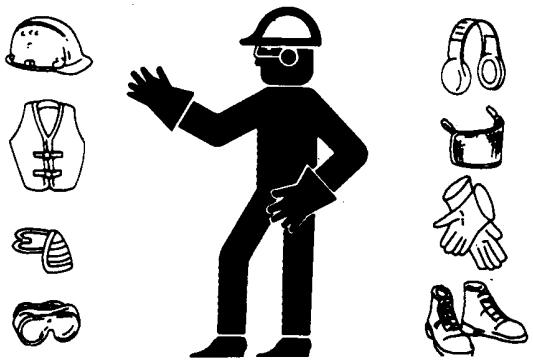
TS201—UN—15APR13

Replace missing or damaged safety signs. Use this operator’s manual for correct safety sign placement.

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-19-18AUG09

Wear Protective Clothing



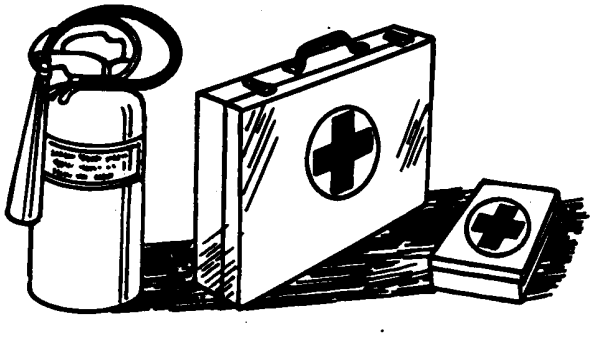
TS206—UN—15APR13

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.

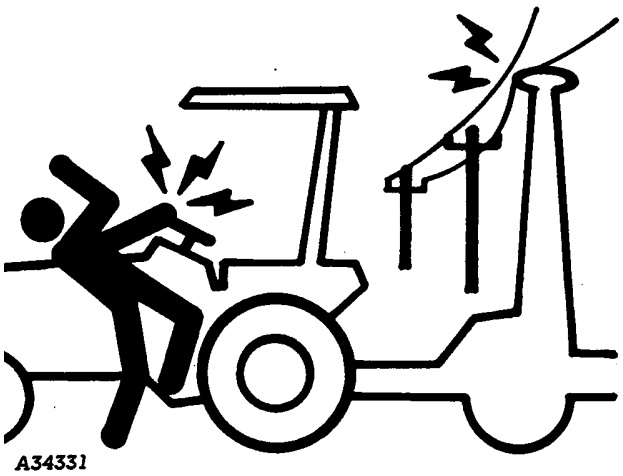
DX,FIRE2-19-03MAR93

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—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.

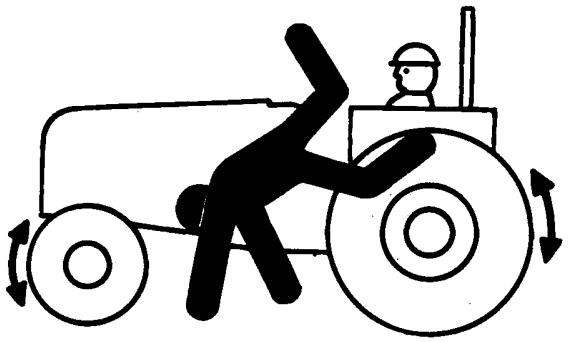
Be sure cylinder and attaching hoses are fully charged with oil before operating system.

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,OUO6074,1162-19-04AUG00

Keep Riders Off Machine



TS290—UN—23AUG88

Only allow the operator on the machine. 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.

DX,RIDER-19-03MAR93

Keep People Distant from Planter



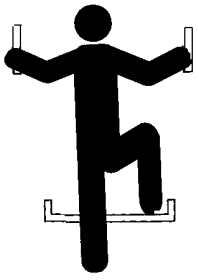
CQ291487—UN—23JAN12

Do not allow people to remain on the planter during planting, as this may cause lethal accidents.

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

NN32476,0000357-19-15APR21

Use Steps and Handholds Correctly



T133468—UN—15APR13

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



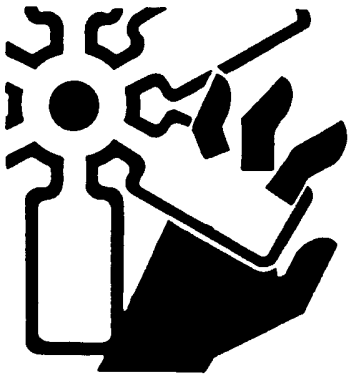
PC10857XW—UN—15APR13

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

Install All Guards



TS677—UN—21SEP89

Rotating cooling system fans, belts, pulleys, and drives can cause serious injury.

Keep all guards in place at all times during engine operation.

Wear close-fitting clothes. Stop the engine and be sure

fans, belts, pulleys, and drives are stopped before making adjustments, connections, or cleaning near fans and their drive components.

DX,GUARDS-19-18AUG09

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:

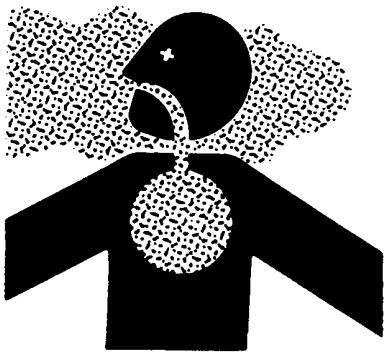
- Position the display according to the installation instructions. Ensure that the device is secured and does not obstruct the driver's view or interfere with the machine operating controls.
- Do not become distracted by the display. Stay alert. Pay attention to the machine and surrounding environment.
- 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.

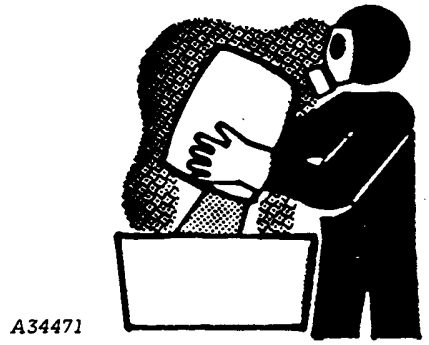
Only use available display functionality when conditions permit you to do so safely and in accordance with instructions provided. Always observe safe driving rules, state, or local laws and traffic regulations when using any secondary device.

DX,ELEC,DISPLAY-19-13JAN15

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471—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.

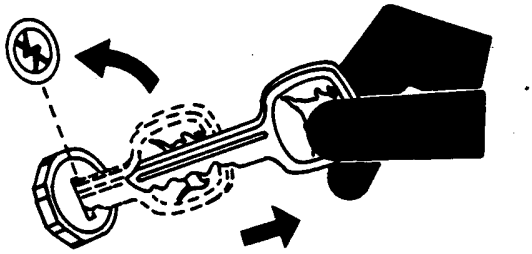
Reduce risk of exposure and injury:

- 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



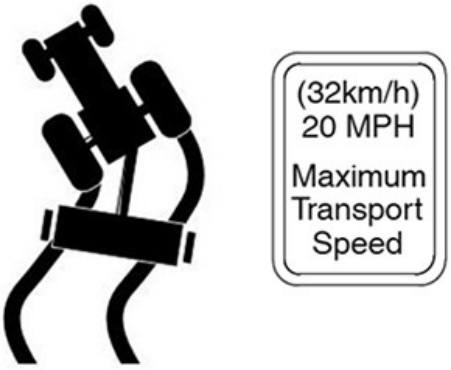
TS230—UN—24MAY89

Before working on the machine:

- Lower all equipment to the ground.
- Stop the engine and remove the key.
- Disconnect the battery ground strap.
- Hang a "DO NOT OPERATE" tag in operator station.

DX,PARK-19-04JUN90

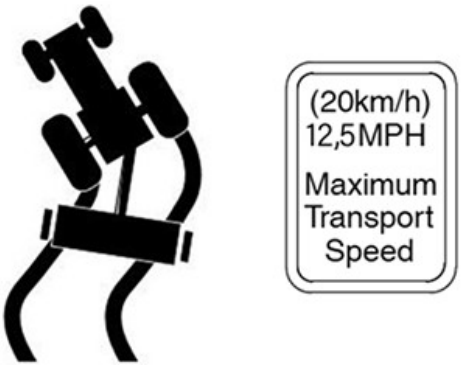
Observe the Maximum Transport Speed



BML019380—UN—04APR22

Maximum Transport Speed—DB40, DB50, and DB74

The maximum transport speed for the DB40, DB50, and DB74 is 32 km/h (20.0 mph).



BML019381—UN—04APR22

Maximum Transport Speed—DB90

The maximum transport speed for the DB90 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.

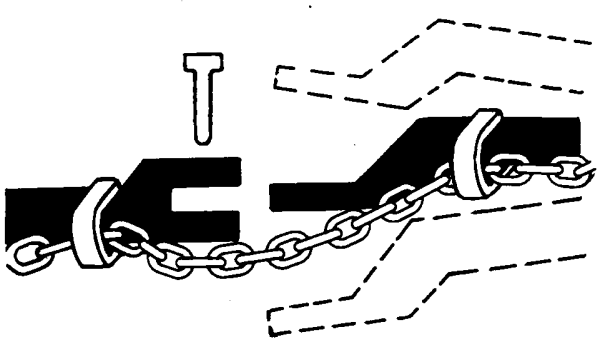
Use additional caution and reduce the speed when towing under adverse surface conditions, when turning, and when on inclines.

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.

N8XR12J,000070D-19-04APR22

Use a Safety Chain



TS217—UN—23AUG88

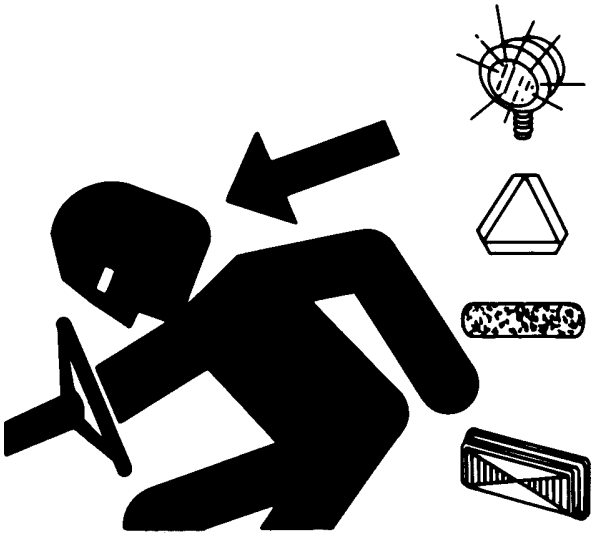
A safety chain will help control drawn equipment should it accidentally separate from the drawbar.

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.

See your John Deere dealer for a 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

Use Safety Lights and Devices



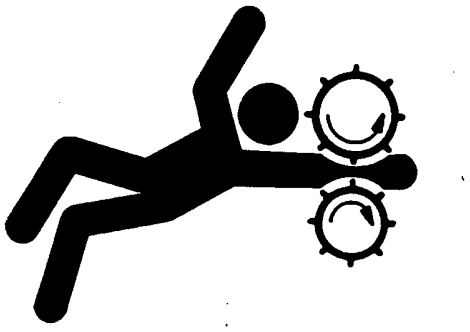
TS951—UN—12APR90

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. An implement safety lighting kit is available from your John Deere dealer.

DX,FLASH-19-07JUL99

Service Machines Safely



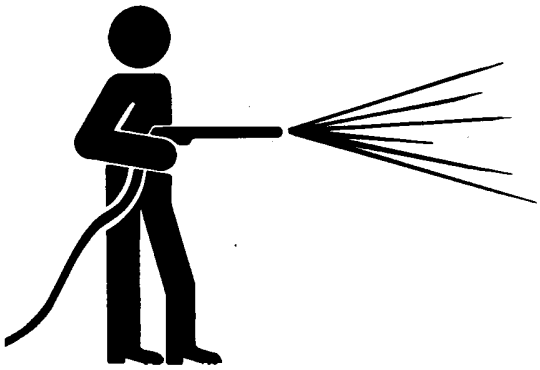
TS228—UN—23AUG88

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

Work in Clean Area



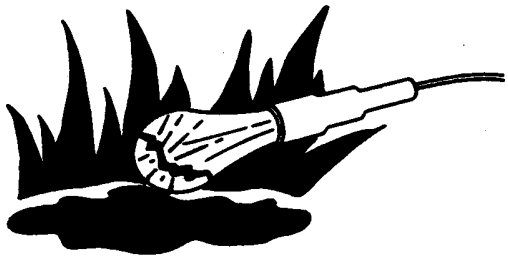
T6642EJ—UN—18OCT88

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

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

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. Remove the key. 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.

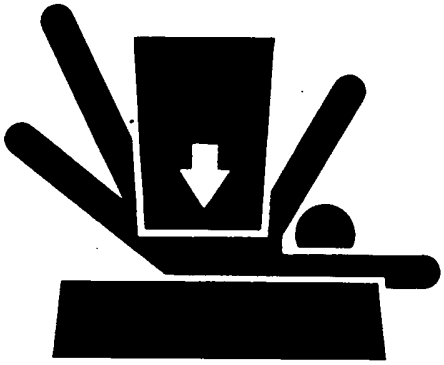
On self-propelled equipment, disconnect battery ground cable (-) before making adjustments on electrical systems or welding on machine.

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-19-28FEB17

Support Machine Properly



TS229—UN—23AUG88

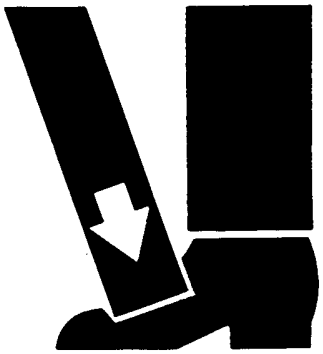
Always lower the attachment or implement to the ground before you work on the machine. If the work requires that the machine or attachment be lifted, provide secure support for them. If left in a raised position, hydraulically supported devices can settle or leak down.

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

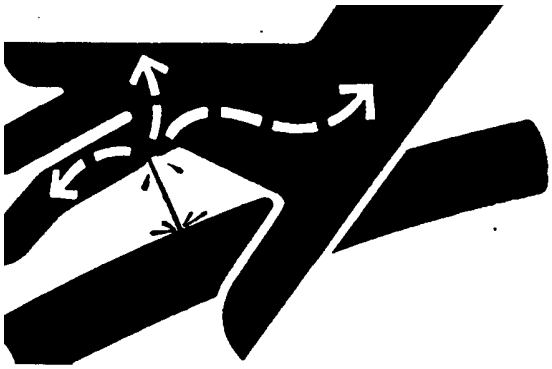


TS953—UN—15MAY90

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 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.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source. Such information is available in English from Deere & Company Medical Department in Moline, Illinois, U.S.A., by calling 1-800-822-8262 or +1 309-748-5636.

DX,FLUID-19-12OCT11

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.

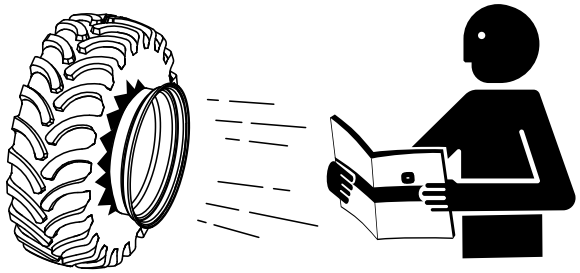
Relieve pressure from the pressurized system before removing accumulator.

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

Accumulators cannot be repaired.

DX,WW,ACCLA2-19-22AUG03

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.

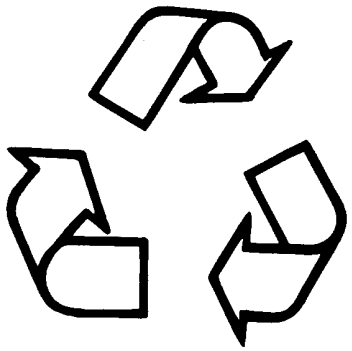
Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure. Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

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:

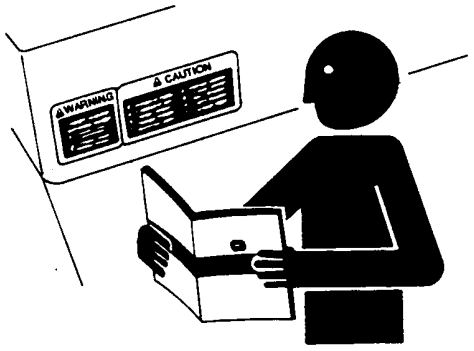
- Use appropriate tools and personal protective equipment such as clothing, gloves, face shields or glasses, during the removal or handling of objects and materials.
- Follow instructions for specialized components.
- Release stored energy by lowering suspended machine elements, relaxing springs, disconnecting 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.

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-19-18AUG09

Pictorial Safety Signs

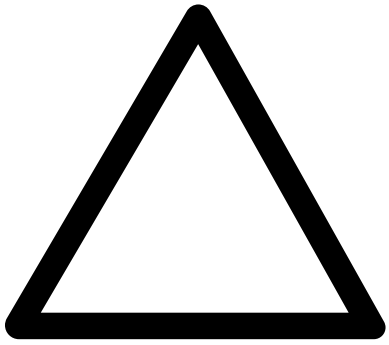


TS231—19—07OCT88

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

ER40675,0001037-19-05MAR20

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.

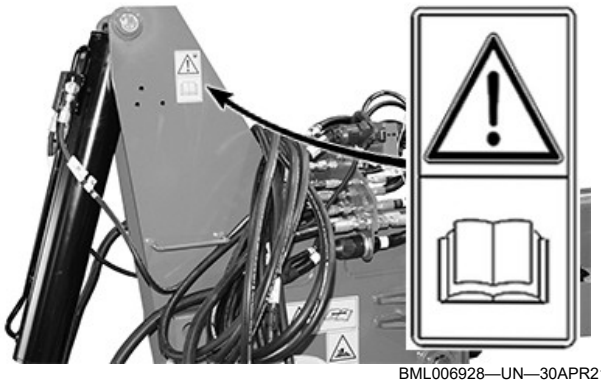
Figure B: This symbol is used for a general alert.

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



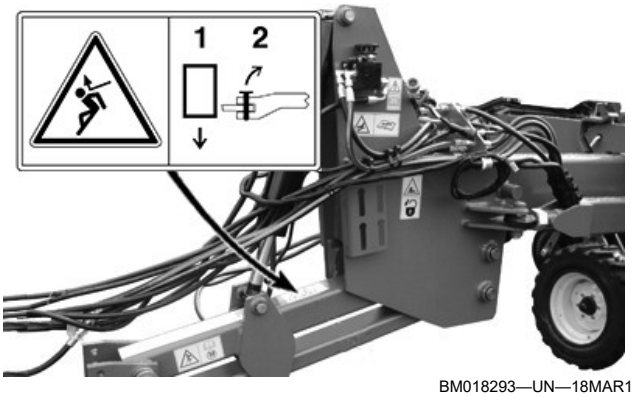
BML006928—UN—30APR21

This Operator's Manual contains all the important

information necessary for a safe operation of the machine.

Carefully observe all the safety rules to avoid accidents.

Sudden Hitch Movement



BM018293—UN—18MAR19

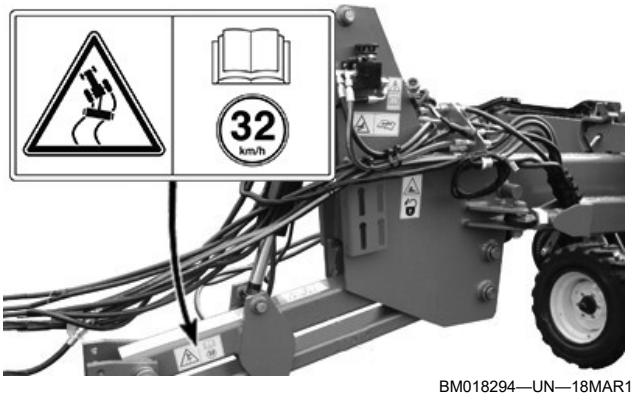
The tongue can whip upward when the hitch pin is removed.

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

The pin may come out of the hitch if it is not locked.

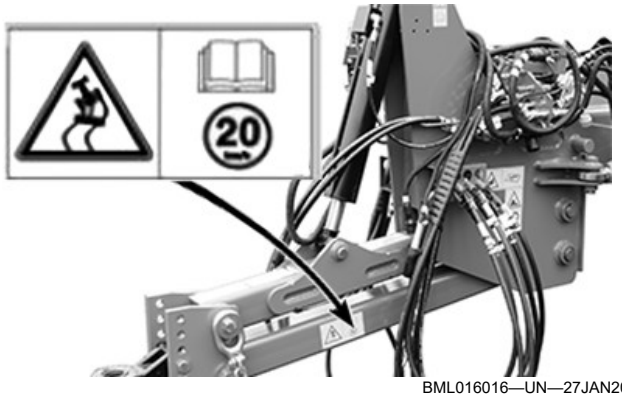
Make sure that the pin is correctly placed and locked.

Transport Guidelines



BM018294—UN—18MAR19

Transport Speed—DB40, DB50, and DB74 Planters



BML016016—UN—27JAN20

Transport Speed—Only for the DB90 Planter

Do not exceed maximum transport speed of 32 km/h (20 mph) for the DB40, DB50, and DB74 planters and 20 km/h (12.5 mph) for the DB90 planter. Exceeding this speed may result in loss of control during transport or braking, and serious injury or death.

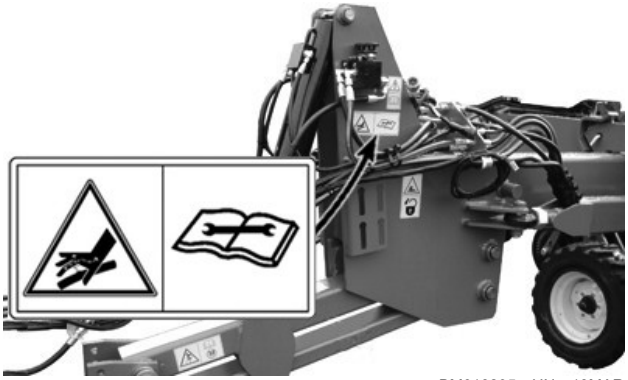
Do not transport the planter with product in the tanks.

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

Do not transport with a motor vehicle.

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

High-Pressure Fluids



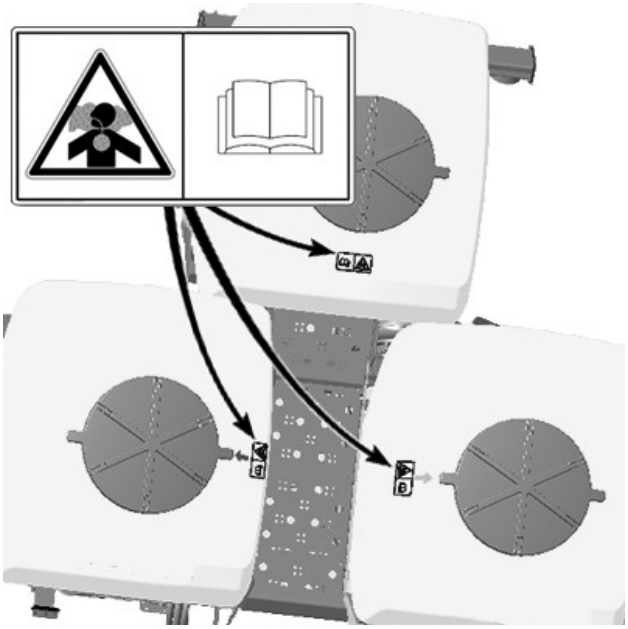
BM018295—UN—18MAR19

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.

Exposure to Airborne Chemicals



BM044847—UN—14OCT19

Avoid exposure to chemicals used in seed treatment.

Stop the central commodity system (CCS™) blower before opening the lid. The tank may be pressurized. Lid may fly upward if lid is opened while blower is operating. Dust and fumes will be exhausted if tank lid is opened.

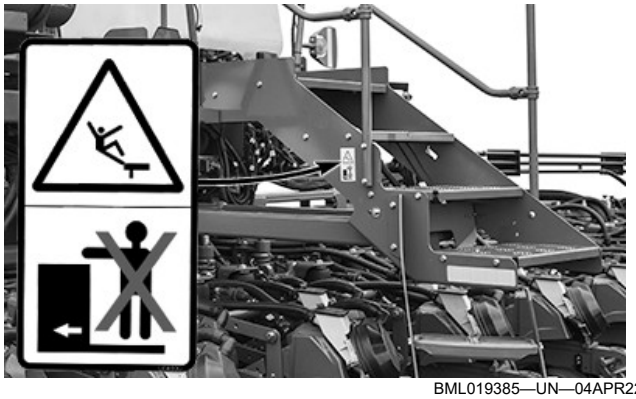
Use appropriate personal protection equipment (PPE).

Keep Riders Off the Machine



BML019384—UN—04APR22

CCS™ Decal



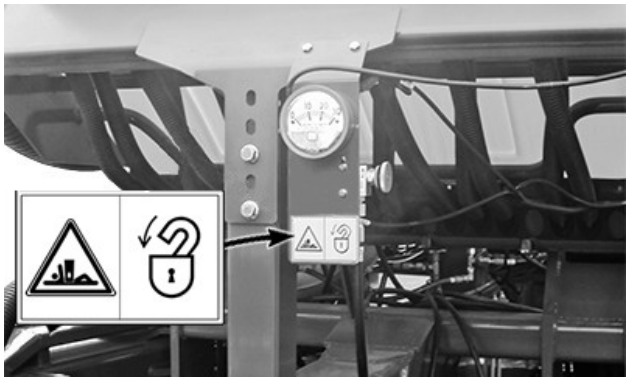
BML019385—UN—04APR22

Ladder Decal

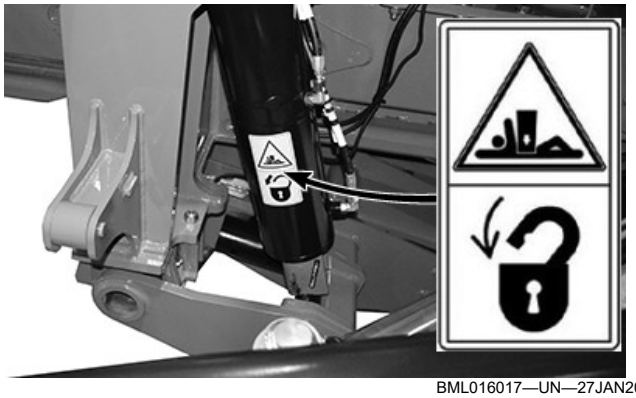
Avoid serious injury or death from falling.

Do not allow riders on the ladder or on the platform area while the machine is moving.

Service Locks

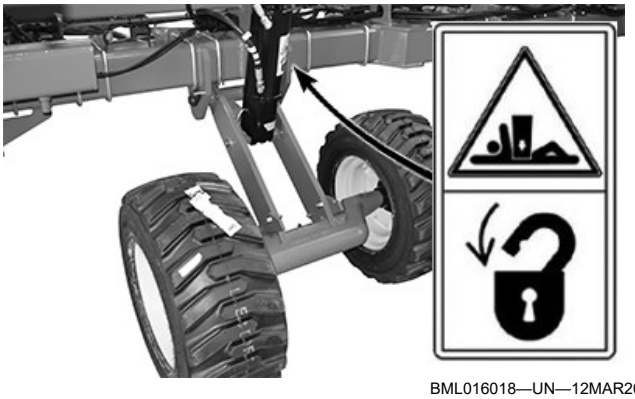


BML019382—UN—04APR22



BML016017—UN—27JAN20

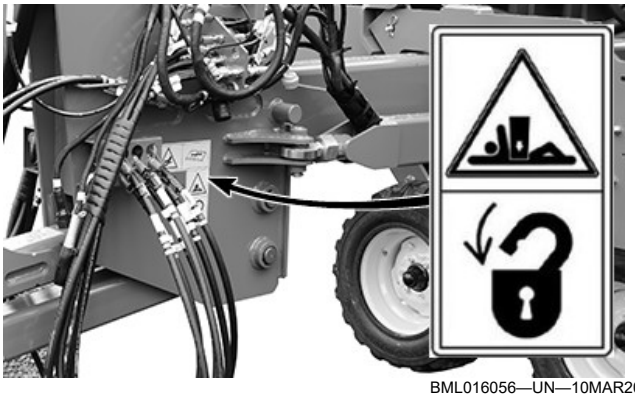
CCS is a trademark of Deere & Company



BML016018—UN—12MAR20



BM030146—UN—29JUL19



BML016056—UN—10MAR20

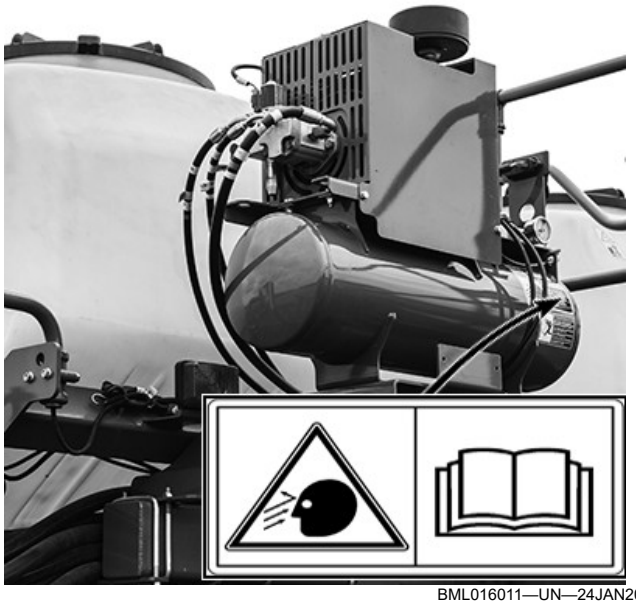
Avoid risks of crushing injury.

Always install the service locks on the hydraulic cylinders before performing any service under the machine.

See Install the Service Locks in the Maintenance and Service Intervals section.

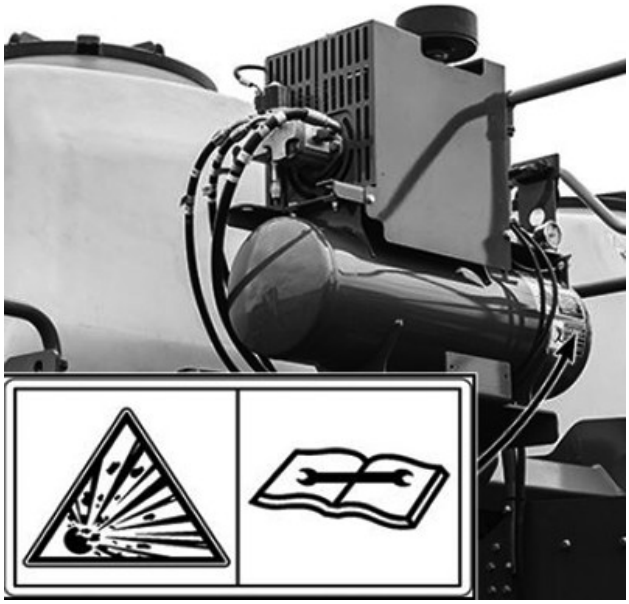
Pneumatic Downforce (PDF) Pressurized System (If Equipped)

NOTE: The position of the decals may vary according to the machine configuration.



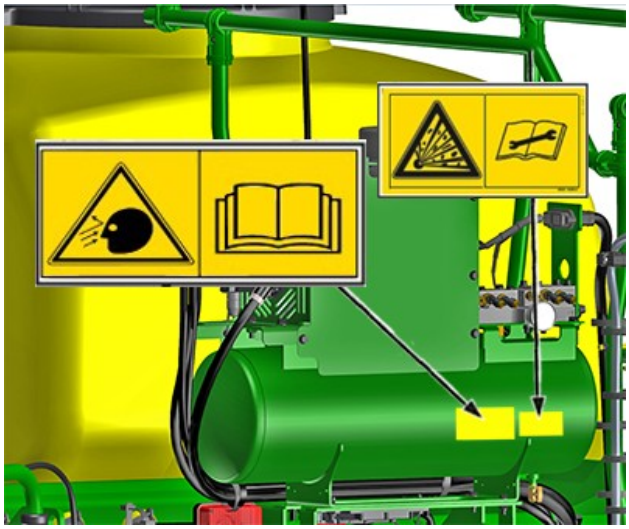
BML016011—UN—24JAN20

Stacked Position



BML016012—UN—24JAN20

Stacked Position



CQ1374778—UN—13AUG24

Side-by-Side Position

This is a high-pressurized system. Protective eyewear 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.

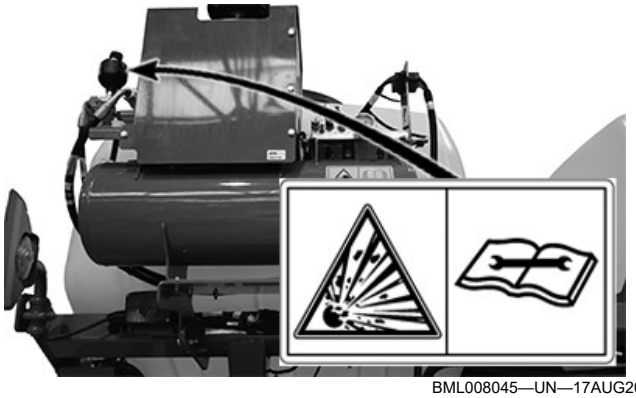
Do not inflate the single bag system above 827 kPa (8.27 bar) (120 psi).

Do not inflate the dual bag system above 552 kPa (5.52 bar) (80 psi).

Do not remove the pressure valve.

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

Accumulator (If Equipped)



BML008045—UN—17AUG20

The content of the accumulator is under pressure. Do not open, heat or puncture.

Avoid injury from contact with hydraulic oil and gas under pressure.

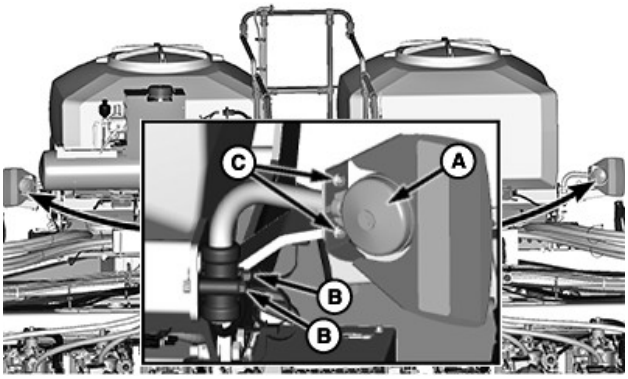
Relieve the pressure before performing any maintenance or repair.

See your John Deere dealer for the recommended pressure of the accumulator.

kp318th,1723559864294-19-13AUG24

Lights

Amber Warning Light



BML004465—UN—06MAY21

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

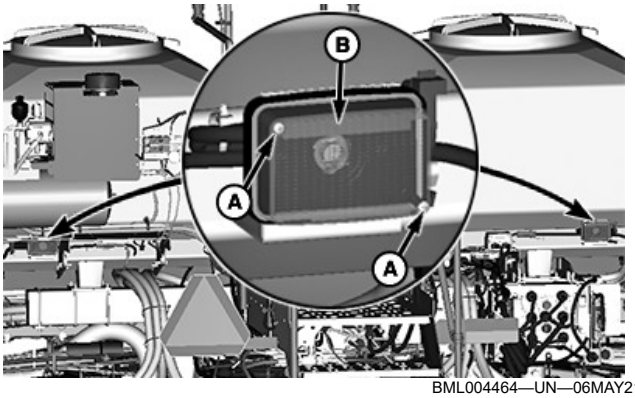
To replace them, remove the screws (B) and (C), disconnect the connector and replace the entire assembly.

NN32476,0000367-19-26MAY21

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.*
- *For tractors equipped with an ISO standard 7-pin connector, the planter rear lights work together with the brake lights of the tractor.*



BML004464—UN—06MAY21

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

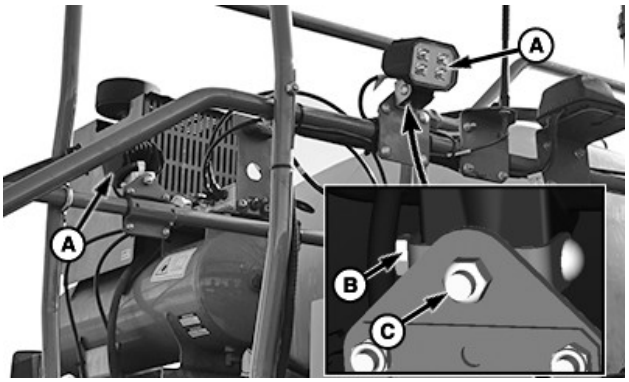
To access the bulb, remove the screws (A) and the lens (B).

NN32476,0000368-19-31MAY21

Worklights

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

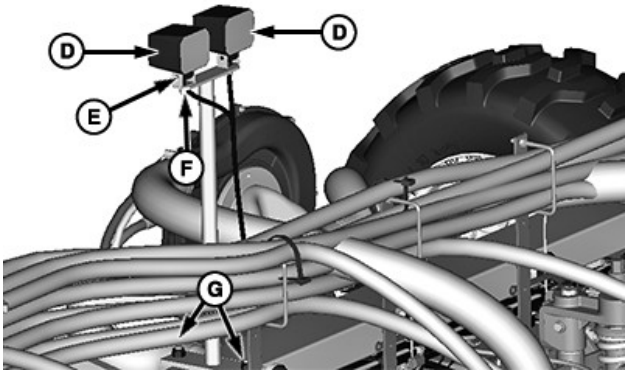
NOTE: The tractor worklights must be on for the planter worklights to function.



BML004462—UN—06MAY21

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 nuts (C).



BML004463—UN—06MAY21

The planter is also equipped with LED lights (D) on each wing.

To adjust the lights up or down, loosen the nuts (E). To turn the lights to the left or right-hand sides, loosen the nuts (F).

To change the position of the LED lights (D) assembly, remove the nuts (G) from the U-bolt.

NN32476,000036A-19-26MAY21

CCS is a trademark of Deere & Company

SeedStar™ 2

The SeedStar™ 2 monitoring system works with your display to provide all vital planting information in just one location.

For MaxEmerge™ 5 planters, refer to the SeedStar™ 2 Operator's Manual for more information.

N8XR12J,00006B5-19-01APR22

SeedStar™ 2—Setting Up Drive Sections

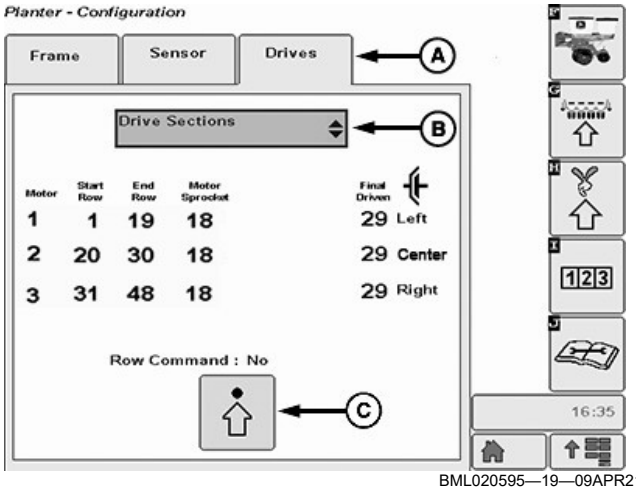
NOTE: Perform these procedures with the tractor ON.



BM017346—UN—11AUG17

Menu Button → Planter Application Button → Setup Menu Softkey

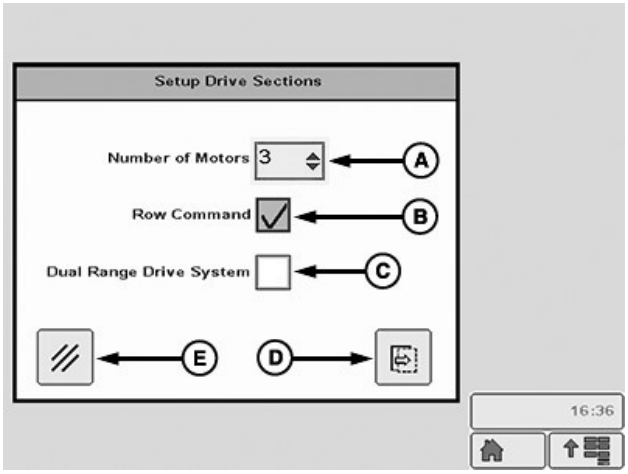
1. Select **Menu** button.
2. Select **Planter Application** button.
3. Select **Setup** menu softkey.



BML020595—19—09APR21

4. Select **Drives** tab (A).
5. Select **Drives Sections** (B).
6. Select **Settings** button (C).

Setting up Motors



BML020596—19—09APR21

1. Define the **Number of Motors** in the input box (A).

NOTE: Number of motors to be considered refers only to motors that drive seed rows.

2. Enable **RowCommand** checkbox (B) of RowCommand™ drive if you wish to enable this feature.

*NOTE: If this feature is enabled, a third setup option called RowCommand™ sections appears in **Drives** tab. This option allows the operator to set up only RowCommand™, without the need to set up again the motors.*

3. Let the **Dual Range Drive System** box (C) unchecked.
4. Select **Next Screen** button (D) to continue the drive sections setup.

*NOTE: If it is necessary to return to the first screen of the **Drives** tab without saving the setup, select **Cancel** button (E).*

Set Up Motor 1

IMPORTANT: Avoid system malfunction: the gear ratio configured on the planter transmission must be the same selected on the SeedStar™ monitor.

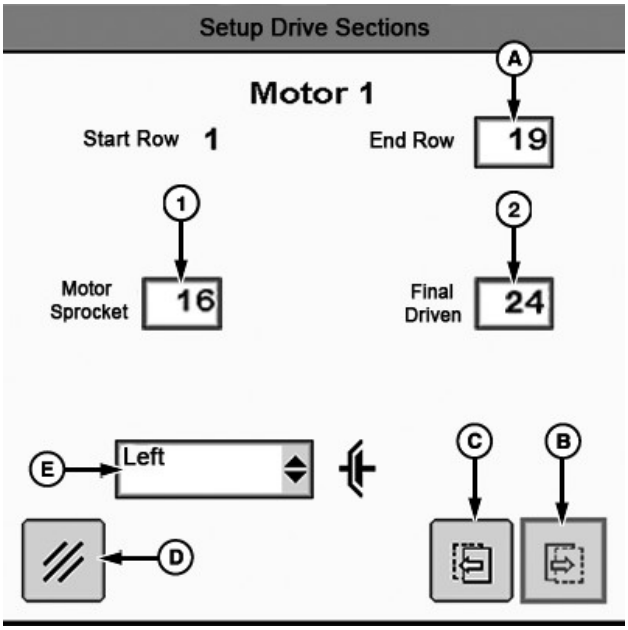
IMPORTANT: Always perform the gear ratio adjustment physically on the planter transmission before selecting the gear ratio on the SeedStar™ monitor.

NOTE: Some components are not shown in image for clarity purposes.

To set up Motor 1 sections, follow the procedures below:

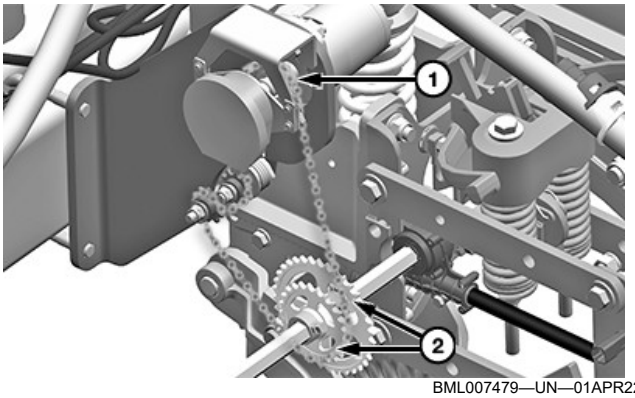
SeedStar is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company

RowCommand is a trademark of Deere & Company



BML007480—19—01APR22

Setting Up Motor 1



BML007479—UN—01APR22

Sprockets

1. Select **Left** at the selection box (E).
2. Enter the **End Row** at the input box (A).
3. Define the number of teeth for the **Motor Sprocket** (1).
4. Define the number of teeth for the **Final Driven Sprocket** (2).
5. Select **Next Screen** button (B) to access the setup of the next motor.

NOTE:

- *If it is necessary to return to the previous screen, select **Previous Screen** button (C).*
- *If it is necessary to return to first screen of **Drives** tab, without saving the setup, select **Cancel** button (D).*

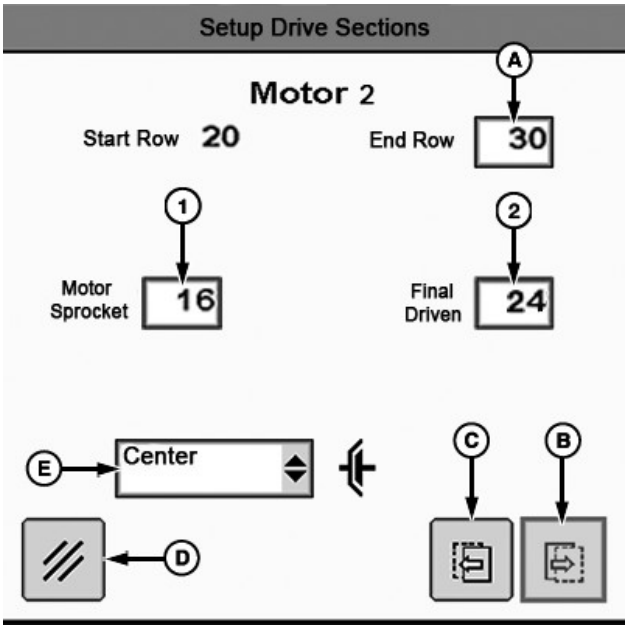
Set Up Motor 2

IMPORTANT: Avoid system malfunction: the gear ratio configured on the planter transmission must be the same selected on the SeedStar™ monitor.

IMPORTANT: Always perform the gear ratio adjustment physically on the planter transmission before selecting the gear ratio on the SeedStar™ monitor.

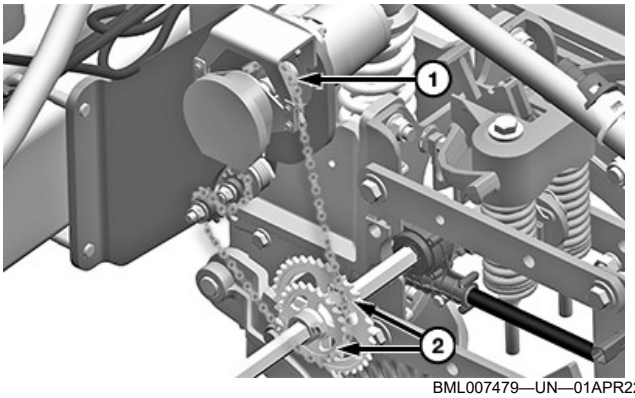
NOTE: Some components are not shown in image for clarity purposes.

To set up Motor 2 sections, follow the procedures below:



BML007481—19—01APR22

Setting Up Motor 2



BML007479—UN—01APR22

Sprockets

1. Select **Center** at the selection box (E).
2. Enter the **End Row** at the input box (A).

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3. Define the number of teeth for the **Motor Sprocket** (1).
4. Define the number of teeth for the **Final Driven Sprocket** (2).
5. Select **Next Screen** button (B) to access the setup of the next motor.

NOTE:

- *If it is necessary to return to the previous screen, select **Previous Screen** button (C).*
- *If it is necessary to return to first screen of **Drives** tab, without saving the setup, select **Cancel** button (D).*

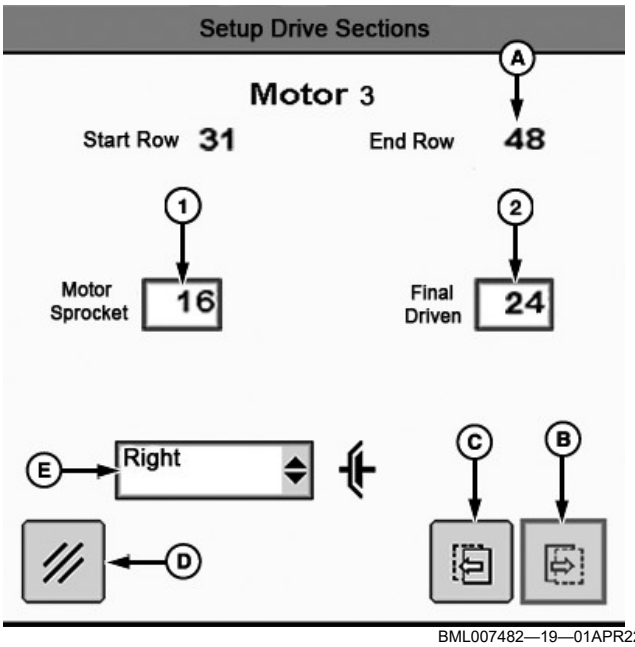
Set Up Motor 3

IMPORTANT: Avoid system malfunction: the gear ratio configured on the planter transmission must be the same selected on the SeedStar™ monitor.

IMPORTANT: Always perform the gear ratio adjustment physically on the planter transmission before selecting the gear ratio on the SeedStar™ monitor.

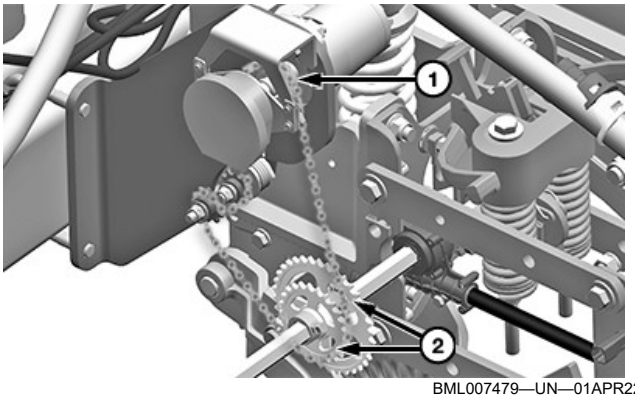
NOTE: Some components are not shown in image for clarity purposes.

To set up Motor 3 sections, follow the procedures below:



BML007482—19—01APR22

Setting Up Motor 3



BML007479—UN—01APR22

Sprockets

1. Select **Right** at the selection box (E).
2. Enter the **End Row** (A) at the input box.
3. Define the number of teeth for the **Motor Sprocket** (1).
4. Define the number of teeth for the **Final Driven Sprocket** (2).
5. Select **Next Screen** button (B) to end the setup of motors.

NOTE:

- *If it is necessary to return to the previous screen, select **Previous Screen** button (D).*
- *If it is necessary to return to first screen of **Drives** tab, without saving the setup, select **Cancel** button (E).*

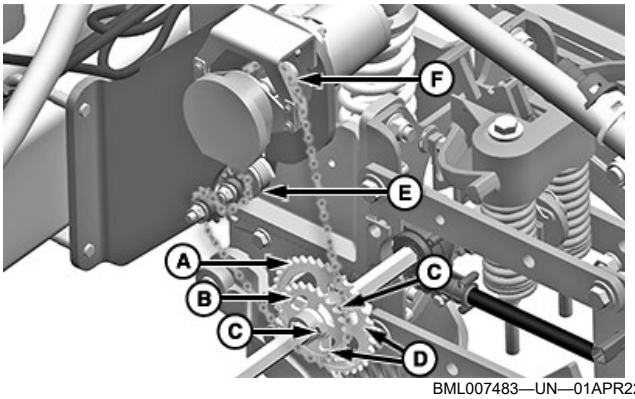
Setting Up the Final Driven Sprocket

IMPORTANT: Avoid system malfunction: the gear ratio configured on the planter transmission must be the same selected on the SeedStar™ monitor.

IMPORTANT: Always perform the gear ratio adjustment physically on the planter transmission before selecting the gear ratio on the SeedStar™ monitor.

NOTE: Some components are not shown in image for clarity purposes.

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BML007483—UN—01APR22

The final driven sprocket (D) is a double gear that possibilities two different gear ratios in combination with the motor sprocket (F) that has 16 teeth.

Use the chain on the 36-tooth gear (A) for low seed populations (such as corn) and on the 24-tooth gear (B) for high seed populations (such as soybean).

Use the following charts to determine when the chain must be assembled on another gear to reach another gear ratio:

Gear Ratio 16X36—ProMax 40 Disk		
Planter Ground Speed km/h (mph)	Seed Population seeds/meter	
	Motor Minimum Speed (18 rpm)	Motor Maximum Speed (188 rpm)
3.2 (1.99)	4.0	41.8
8.0 (4.97)	1.6	16.7
10.0 (6.21)	1.3	13.4

Gear Ratio 16X36—ProMax 64 Disk		
Planter Ground Speed km/h (mph)	Seed Population seeds/meter	
	Motor Minimum Speed (18 rpm)	Motor Maximum Speed (188 rpm)
3.2 (1.99)	6.4	66.8
8.0 (4.97)	2.6	26.7
10.0 (6.21)	2.0	21.4

Gear Ratio 16X24—ProMax 40 Disk		
Planter Ground Speed km/h (mph)	Seed Population seeds/meter	
	Motor Minimum Speed (18 rpm)	Motor Maximum Speed (188 rpm)
3.2 (1.99)	6.0	62.7
8.0 (4.97)	2.4	25.1
10.0 (6.21)	1.9	20.1

Gear Ratio 16X24—ProMax 64 Disk		
Planter Ground Speed km/h (mph)	Seed Population seeds/meter	
	Motor Minimum Speed (18 rpm)	Motor Maximum Speed (188 rpm)
3.2 (1.99)	9.6	100.3
8.0 (4.97)	3.8	40.1
10.0 (6.21)	3.1	32.1

NOTE: The charts show only the values when using the two disks supplied with the planter: ProMax 40 and ProMax 64. For other disks the values differ. See you John Deere Dealer for details.

To set up the final driven sprocket (D), perform the following procedure:

1. Release the chain tensioners (E).
2. Remove the rubber clamps (C).
3. To align the motor sprocket (F) with the final driven sprocket (D) and position the chain correctly, slide the gears (A) and (B) over the shaft according to the desired gear ratio.

IMPORTANT: Avoid wear on components. Misaligned gears cause wear on the components due to the action of the chain.

4. Connect the chain to the selected gear.
5. Reinstall the rubber clamps (C).
6. Adjust the tension using the chain tensioners (E).
7. Set in the SeedStar™ 2 monitor the same quantity of teeth of the physically selected gear (A) or (B) for the final driven sprocket (D).

RowCommand™ Sections

IMPORTANT: The planter is divided in grouped sections with variable rate drive actuating a specific number of row units. When selecting rows for the control section, only use rows within the same variable rate drive group.

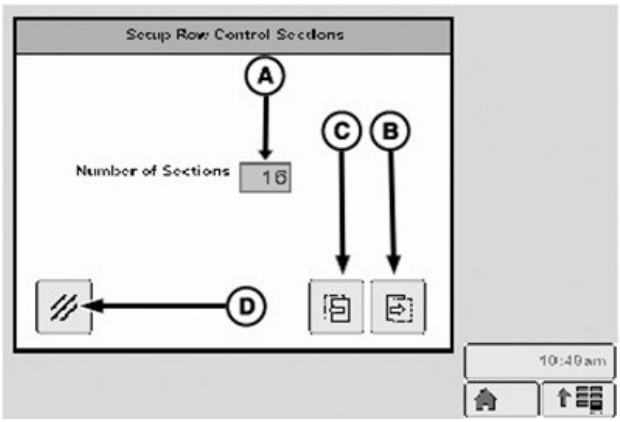
It is possible to configure sections with row spacing smaller than 152 cm (60 in). However, depending on GPS signal accuracy there may occur unexpected row activation (ON and OFF).

Unexpected activation may occur particularly at outer rows that are planting in parallel to previously planted area. To avoid unexpected row activation in this section, it is recommended to use an RTK signal for row spacing smaller than 152 cm (60 in).

SeedStar is a trademark of Deere & Company
RowCommand is a trademark of Deere & Company

IMPORTANT: If many RowCommand™ clutches are powered simultaneously (clutches engaged), there may occur a tractor low voltage warning due to limited alternator power output. If this occurs, reduce electrical load or increase engine speed.

To set up this screen, perform the following steps:

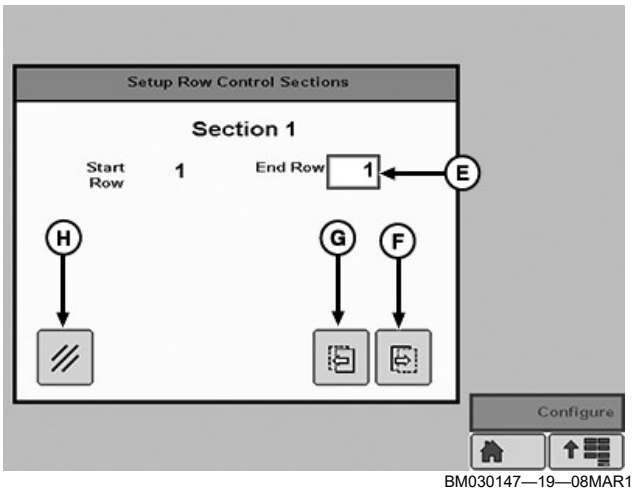


BM028764—19—08MAR19

1. Enter the **Number of Sections** (A).
2. Select **Next Screen** button (B) to continue to RowCommand™ section setup.

NOTE:

- *If it is necessary to return to the previous screen, select **Previous Screen** button (C).*
- *If it is necessary to return to first screen of **Drives** tab, without saving the setup, select **Cancel** button (D).*



BM030147—19—08MAR19

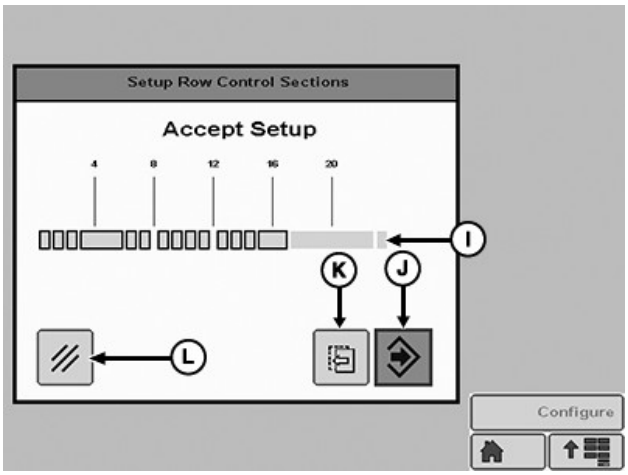
3. Enter the end row of each section in the input box (E).

NOTE: Repeat until all sections are completed.

4. Select **Next Screen** button (F) to continue the RowCommand™ section setup.

NOTE:

- *If it is necessary to return to the previous screen, select **Previous Screen** button (G).*
- *If it is necessary to return to first screen of **Drives** tab, without saving the setup, select **Cancel** button (H).*

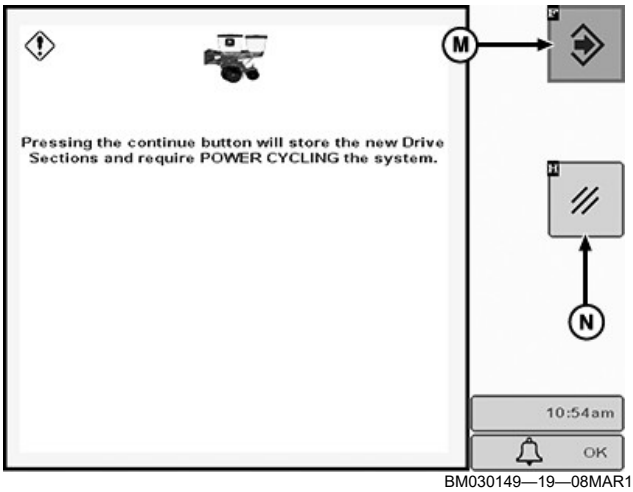


BM030148—19—08MAR19

5. Check graphical representation of **Setup Sections** (I).
6. Select **Next** button (J) to confirm the setup.

NOTE:

- *If the setup is not as desired, select **Cancel** button (L) to return to first screen of **Drives** tab, without saving the setup.*
- *Select **Previous Screen** button (K) to return to the setup of the sections.*



BM030149—19—08MAR19

7. Select **Continue** button (M) to save the new settings.
8. Reinitiate the system.

RowCommand is a trademark of Deere & Company

*NOTE: If it is necessary to return to the previous screen, select **Previous Screen** button (N).*

KK69021,0000AFE-19-01APR22

SeedStar™ 4

The SeedStar™ 4 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™ 4 Operator's Manual for more information.

N8XR12J,00006B7-19-29MAR22

SeedStar is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company

Central Commodity System (CCS™) Blower and VacuMeter™ Motor (Case) Drain Requirements

IMPORTANT: Avoid blower motor damage. Ensure that tractor case drain has less than 172 kPa (1.72 bar) (25 psi).

Central commodity system CCS™ blower and VacuMeter™ 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 and VacuMeter™ 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. See your John Deere dealer for more information.

ER40675,0000303-19-05MAR20

VacuMeter™ Hydraulic Motor and Variable Rate Drive Return Coupler



A53457—UN—02MAR04

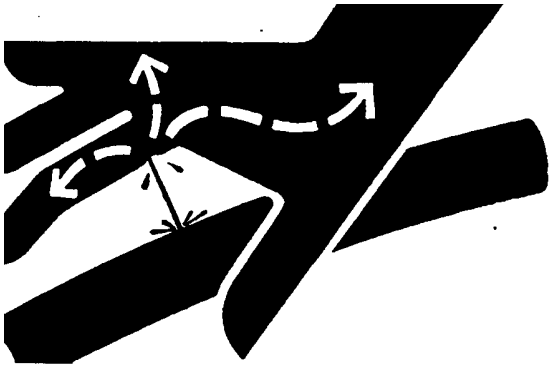
All machines are equipped with a special return coupler on the variable rate drive and vacuum motor return hoses.

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.

ER40675,0000C53-19-12FEB20

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.

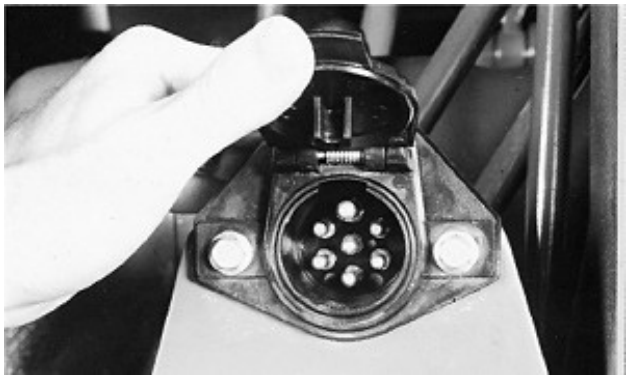
ER40675,0001041-19-05MAR20

Attach the 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.

CCS is a trademark of Deere & Company
VacuMeter is a trademark of Deere & Company



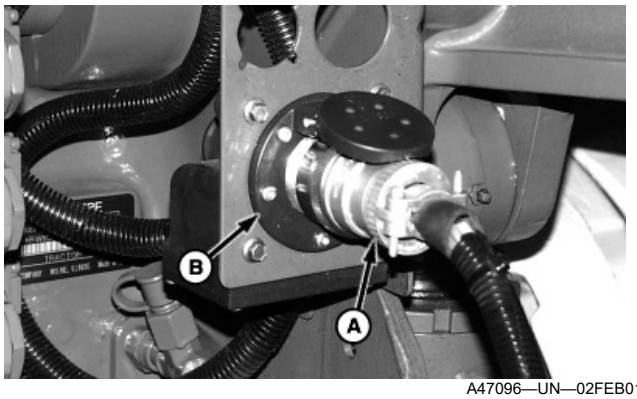
RW20845—UN—07MAY92

Attach the light harness to the 7-pin connector.

OUO1074,0000042-19-11MAY16

Connect SeedStar™ Monitor Harness

NOTE: Harness locations vary from tractor to tractor.



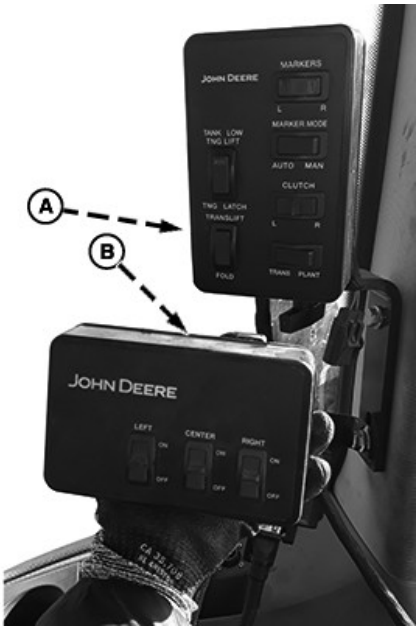
A47096—UN—02FEB01

Connect SeedStar™ monitor harness (A) to connector (B).

ER40675,0000304-19-12FEB20

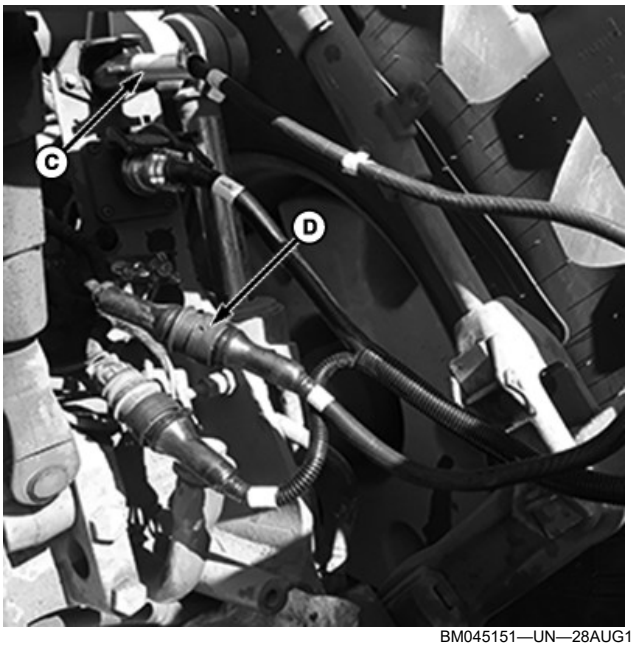
Connect the Frame Control Harness—MaxEmerge™ 5

NOTE: Harness locations vary from tractor to tractor.



BM045150—UN—28AUG19

1. Connect the control frame panels (A and B) in the tractor.



BM045151—UN—28AUG19

2. Connect the 7-pin harness (C).
3. Connect the control harness (D).

NN32476,000036C-19-03MAY21

SeedStar is a trademark of Deere & Company

Hydraulic Connection Recommendations—MaxEmerge™ 5

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

Extend and retract symbols are on SCV cover.

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.



A64361—UN—11MAR09
Extend Symbol



A64362—UN—11MAR09
Retract Symbol

Hose Connections (DB40)—Type A				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)	I	Extend	Retract	Start at 5 and adjust as necessary.	10 seconds or as required for full extend and retract. CCS level controlled with CCS valve.
Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder	II	Extend	Retract	10 Maximum	Constant **C**
Vacuum 1 and 2 (controlled with the flow control valve)	III	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Variable Rate Drive (VRD) on Power Beyond with Load Sense	IV/Power Beyond (PB)	Extend/Power Beyond Pressure	Retract/Power Beyond Return	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

Hose Connections (DB40)—Type B				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders	I	Extend	Retract	Start at 5 and adjust as necessary.	10 seconds or as required for full extend and retract.
Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Central Commodity System (CCS)	II	Extend	Retract	Start at 5 and adjust as necessary.	Constant **C**
Vacuum 1 and 2 (controlled with the flow control valve)	III	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Variable Rate Drive (VRD) on Power Beyond with Load Sense	IV	Extend	Retract	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

Hose Connections (DB50)—Type A				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)	I	Extend	Retract	10 Maximum	Constant **C** CCS level controlled with CCS valve.
Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder	II	Extend	Retract	Start at 5 and adjust as necessary.	10 seconds or as required for full extend and retract.
Vacuum 1 and 2 (controlled with the flow control valve)	III	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Vacuum 3 (controlled with the flow control valve)	IV	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Variable Rate Drive (VRD) on Power Beyond with Load Sense	V/Power Beyond (PB)	Extend/Power Beyond Pressure	Retract/Power Beyond Return	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

Hose Connections (DB50)—Type B				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders	I	Extend	Retract	10 Maximum	Constant **C**
Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Central Commodity System (CCS)	II	Extend	Retract	Start at 5 and adjust as necessary.	10 seconds or as required for full extend and retract.
Vacuum 1, 2, and 3 (controlled with the flow control valve)	III	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Variable Rate Drive (VRD) on Power Beyond with Load Sense	IV	Extend/Power Beyond Pressure	Retract/Power Beyond Return	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

Hose Connections—Fold Assist Equipped Machines (DB74)—Type A				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)	I	Extend	Retract	10 Maximum	Constant **C** CCS level controlled with CCS valve.
Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder	II	Extend	Retract	Start at 5 and adjust as necessary.	10 seconds or as required for full extend and retract.
Header Cylinder	III	Extend	Retract	Start at 5 and adjust as necessary.	0
Vacuum 1 and 2 (controlled with the flow control valve)	IV	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Vacuum 3 and 4 (controlled with the flow control valve)	V	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**

Hose Connections—Fold Assist Equipped Machines (DB74)—Type A				Function Settings For John Deere Tractors	
Variable Rate Drive (VRD) on Power Beyond with Load Sense	VI/Power Beyond (PB)	Extend/Power Beyond Pressure	Retract/Power Beyond Return	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

Hose Connections—Fold Assist Equipped Machines (DB74)—Type B				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders	I	Extend	Retract	10 Maximum	Constant **C**
Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Central Commodity System (CCS)	II	Extend	Retract	Start at 5 and adjust as necessary.	10 seconds or as required for full extend and retract.
Vacuum 1, 2, 3, and 4 (controlled with the flow control valve)	III	Retract	Extend	Start at 4 and adjust as necessary	Constant **C**
Header Cylinder	IV	Extend	Retract	Start at 5 and adjust as necessary.	0
Variable Rate Drive (VRD) on Power Beyond with Load Sense	V/Power Beyond (PB)	Extend/Power Beyond Pressure	Retract/Power Beyond Return	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

Hose Connections—Fold Assist Equipped Machines (DB90)				Function Settings For John Deere Tractors	
Hose Function	**SCV**	**Pressure**	**Return**	**Flow[a]**	**Detent (Time)**
Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders	I	Extend	Retract	10 Maximum	Constant **C**
Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Central Commodity System (CCS)	II	Extend	Retract	Start at 5 and adjust as necessary.	Constant **C**
Vacuum 1, 2, 3, and 4 (controlled with the flow control valve)	III	Retract	Extend	Start at 4 and adjust as necessary.	Constant **C**
Header Cylinder	IV	Extend	Retract	Start at 5 and adjust as necessary.	0
Variable Rate Drive (VRD) on Power Beyond with Load Sense	V/Power Beyond (PB)	Extend/Power Beyond Pressure	Retract/Power Beyond Return	10 Maximum/Not Applicable	Constant **C**/Not Applicable

[a]Hydraulic 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.

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

IMPORTANT: Vacuum and variable rate drive RETURN hoses, with special tip, must be connected to the tractor EXTEND port. Avoid damaging pressure spikes. Shut off the vacuum motor and the variable rate drive by placing SCV lever in float position.

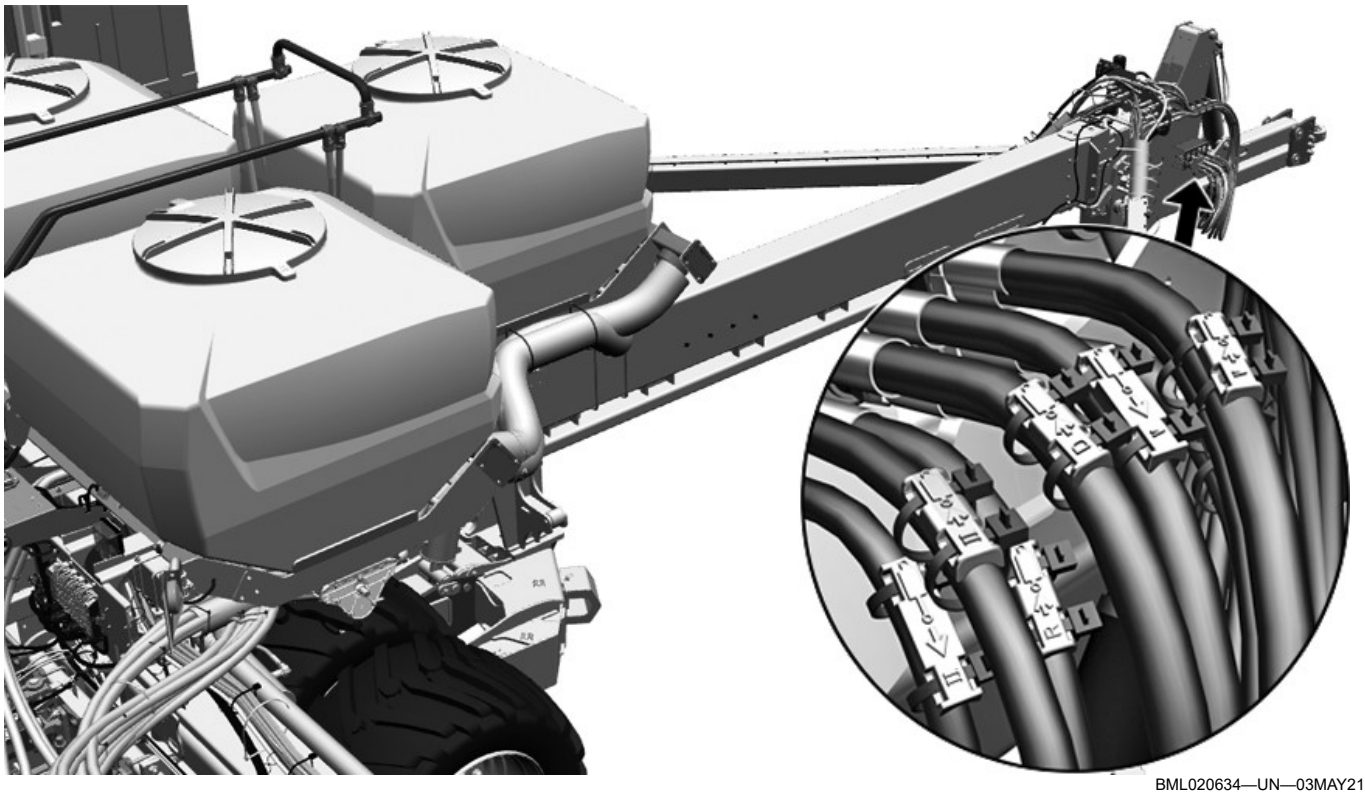
The SeedStar system is used to control the variable rate drive.

h3ymaet,1656002091874-19-07DEC22

Planter and Tractor Connections

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

IMPORTANT: Prevent system malfunction. To connect the hydraulic hoses to the correct SCV, use the identifications as shown in the image. Connecting the hoses to the wrong connectors causes damage to the hydraulic system.



BML020634—UN—03MAY21

Identification of the Hydraulic Hoses

DB40 MaxEmerge 5—Type A

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)
- **SCV2:** Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder
- **SCV3:** Vacuum 1 and 2
- **SCV4 or Power Beyond (PB):** Variable Rate Drive (VRD)

DB40 MaxEmerge 5—Type B

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1 and 2
- **SCV4:** Variable Rate Drive (VRD)

DB40 ExactEmerge and MaxEmerge 5e—Type A

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)/Compressor
- **SCV2:** Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder
- **SCV3:** Vacuum 1
- **SCV4:** Vacuum 2

DB40 ExactEmerge and MaxEmerge 5e—Type B

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1 and 2
- **SCV4 or Power Beyond (PB):** Compressor

DB50 MaxEmerge 5—Type A

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)
- **SCV2:** Header Cylinder/Hitch Latch Cylinder/Field

Transport Cylinder (Upper Rod)/Wing Folding Cylinder

- **SCV3:** Vacuum 1 and 2
- **SCV4:** Vacuum 3
- **SCV5 or Power Beyond (PB):** Variable Rate Drive (VRD)

DB50 MaxEmerge 5—Type B

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1, 2, and 3
- **SCV4:** Variable Rate Drive (VRD)

DB50 ExactEmerge and MaxEmerge 5e—Type A

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:**Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1
- **SCV4:** Vacuum 2
- **SCV5:** Vacuum 3

DB50 ExactEmerge and MaxEmerge 5e—Type B

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1, 2, and 3
- **SCV4 or Power Beyond (PB):** Compressor

DB74 MaxEmerge 5—Type A

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder
- **SCV3:** Header Cylinder
- **SCV4:** Vacuum 1 and 2
- **SCV5:** Vacuum 3 and 4
- **SCV6 or Power Beyond (PB):** Variable Rate Drive (VRD)

DB74 MaxEmerge 5—Type B

- **SCV1:** Planter Raise Cylinder (Lower Rod)
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Wing Wheel Cylinders/Central Commodity System (CCS)
- **SCV3:** Vacuum 1, 2, 3, and 4
- **SCV4:** Header Cylinder
- **SCV5 or Power Beyond (PB):** Variable Rate Drive (VRD)

DB74 ExactEmerge and MaxEmerge 5e—Type A

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders/Central Commodity System (CCS)/ Compressor
- **SCV2:** Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder
- **SCV3:** Vacuum 1
- **SCV4:** Vacuum 2
- **SCV5:** Vacuum 3
- **SCV6:** Vacuum 4

DB74 ExactEmerge and MaxEmerge 5e—Type B

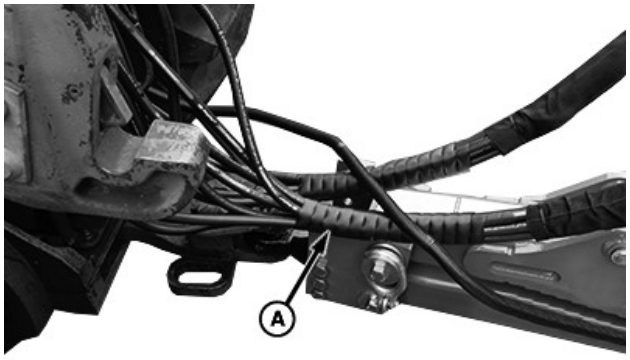
- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1, 2, 3, and 4
- **SCV4 or Power Beyond (PB):** Compressor

DB90 MaxEmerge 5

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1, 2, 3, and 4
- **SCV4:** Header Cylinder
- **SCV5 or Power Beyond (PB):** Variable Rate Drive (VRD)

DB90 MaxEmerge 5e

- **SCV1:** Planter Raise Cylinder (Lower Rod)/Wing Wheel Cylinders
- **SCV2:** Header Cylinder/Hitch Latch Cylinder/Field Transport Cylinder (Upper Rod)/Wing Folding Cylinder/Wing Folding Auxiliary Cylinder/Central Commodity System (CCS)
- **SCV3:** Vacuum 1, 2, 3, and 4
- **Power Beyond (PB) (Preferred) or SCV4 (If Power Beyond Is Unavailable):** Compressor

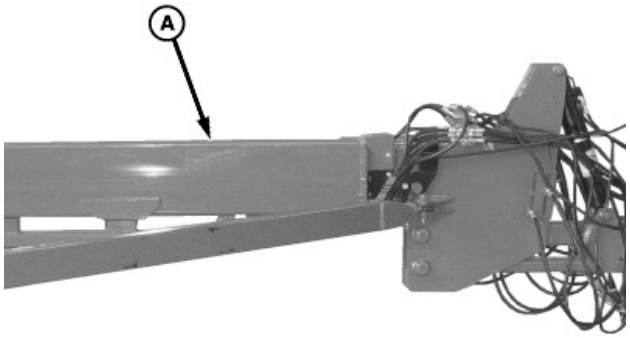


BML012203—UN—28JUL20

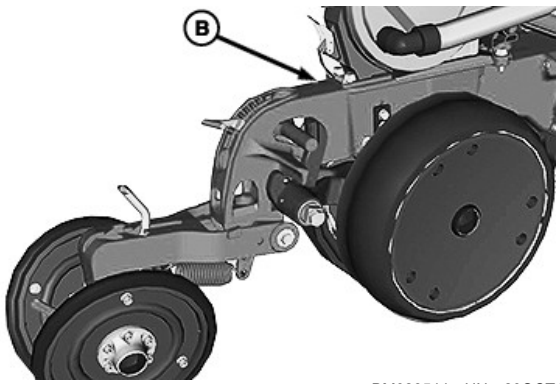
After making the connections between the planter and the tractor, install the spiral tube (A) to fasten the hoses together.

h3ymaet,1655896981591-19-15DEC22

Level Hitch Tube



A68031—UN—02JUL10



BM028544—UN—23OCT18

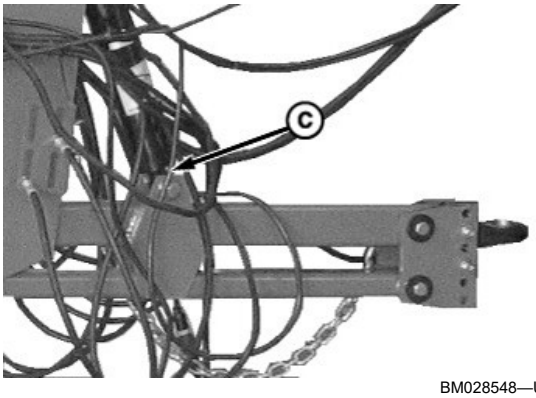
Periodically check that hitch tube (A) and planting unit frames (B) are parallel to the ground during operation.

IMPORTANT: Match tractor drawbar and implement clevis.

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

NOTE: If center frame of machine is higher or lower than wings, rephase hydraulic lift system. Raise machine and hold selective control valve (SCV) lever for several seconds to rephase. If center frame on machine is lower than wings after rephasing, see Adjust Main Frame Height in Operate Machine—MaxEmerge™ 5 section.

1. Set adjustable downforce system to zero pressure.
2. Lower machine on level ground.



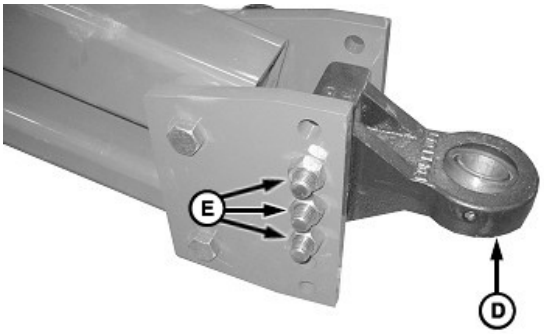
BM028548—UN—10NOV17

3. Completely retract the drawbar hitch cylinder (C).
4. Raise and lower machine.
5. Verify that hitch tube is parallel with ground. If the hitch is not parallel, proceed with remaining steps.
6. Place planter in park position. (See Detach Machine in this section.)
7. Disconnect clevis from tractor.

IMPORTANT: For DB40, in some cases, the installation of the clevis on the lower holes does not allow a proper coupling with the tractor. If this happens, it is necessary to use the upper holes. To leveling DB40, see Use Lock of the Drawbar Hitch Cylinder in Preparing the Planter section.

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

MaxEmerge is a trademark of Deere & Company



BM028549—UN—10NOV17

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

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

NOTE: To improve the planter cutting efficiency, it is recommended to install the clevis (D) in the lower holes.

9. Tighten screws and nuts (E) to specification.

Screws — Specification

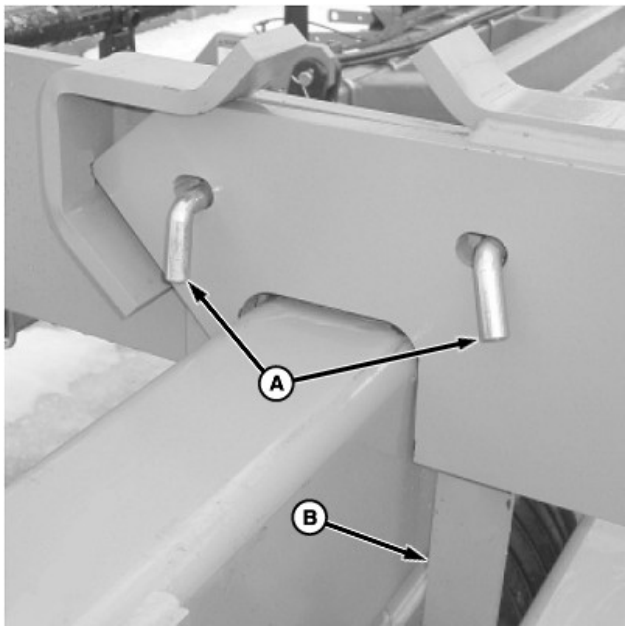
Hitch Clevis Attaching Screws and Nuts—Torque. . . . . 680 N·m (501.5 lb·ft)

10. Attach tractor to drawbar, unfold the planter, and put in plant position.
11. Retract the drawbar cylinder completely.
12. 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.
13. If center frame of machine becomes higher or lower than wings during operation, repeat the procedure.

K2F379Y,00000CA-19-26JUL20

Detach Machine

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.



A67353—UN—28JUN10

1. Fold machine. (See Unfold and Fold Planters in Transport section.)
2. Install the U-bracket (B) as shown between the wing latch plates and secure with pins (A).
3. Install cylinder service locks on the main frame wheels.
4. Remove lock of the drawbar hitch cylinder (only for DB40 Planters).
5. Lower the machine on service locks.
6. Lower wing wheels until they touch the ground and tongue raises off the drawbar.
7. Remove safety chain and hitch pin.
8. Remove all hydraulic hoses and wiring harnesses.

NN32476,00003CE-19-28APR21

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.

ER40675,0001042-19-05MAR20

Calculate the Minimum Tractor Weight for Safe Road 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 a planter in folded position with product in tanks.

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

ER40675,00003DE-19-05MAR20

Front End Weighting



CQ297976—UN—06FEB14

Properly ballast all tractors to improve stability.

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

ER40675,000102B-19-05MAR20

Rear Wheel Weighting

Do not use liquid in, or wheel weights on, the rear tractor tires. Using liquid or weights decreases the tire load carrying capacity needed when transporting the machine. Properly ballast all tractors.

OUO6064,0000108-19-21MAY10

Tractor Tire Recommendation

Dual rear tractor tires are recommended for stability and load carrying capacity with machine in folded transport position.

OUO6064,000010A-19-21MAY10

Set Tractor Wheel Spacing

Row-Crop Tractors

Set tires (center-to-center of tread) accordingly to row width specified in the tractor OM, based on the row width of the purchased DB planter

ER40675,0001043-19-05MAR20

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

Check Tractor Hydraulic System

For the complete tractor operating instructions, refer to the tractor Operator's Manual.

The vacuum motor and variable rate drive 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 system are NOT compatible with this system.

Minimum required tractor standby pressure is approximately 15 513 kPa (155 bar) (2250 psi) depending on frame configuration, planting speed, and number of rows.

Hydraulic system working pressure is 20 684 kPa (207 bar) (3000 psi). Hydraulic system burst pressure is 82 737 kPa (827 bar) (12 000 psi).

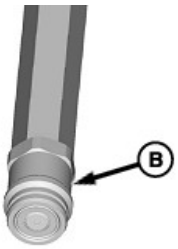
IMPORTANT: Do not use a tractor with open center hydraulic system to operate machine. Permanent damage to the tractor pump can result.

ER40675,00002FF-19-05MAR20

Case Drain and Hydraulic Motor Requirements



A85287—UN—09MAR15



A85597—UN—10MAR15

A—Machine Drain Connection
B—Tractor Drain Connection

IMPORTANT: To avoid damage to the hydraulic motors, equip the tractor with a low-pressure drain coupler. Install the coupler in a port with less than 172 kPa (1.72 bar) (25 psi). See the Case Drain Connection Kits table.

Use the connection kits listed in the table on John Deere tractors. If a drain kit is already installed, verify that it matches what is listed on the table.

The machine drain connection (A) must be attached to a low-pressure drain connection before any other hose connection.

Order one of the following kits for a John Deere tractor. For other tractors, see the tractor dealer for a suitable connection kit.

Some hydraulic motors are low-flow, high-pressure motors. The motors are designed to operate on a closed center hydraulic system. Connecting low-flow, high-pressure hydraulic motors to an open center system is not recommended. See your John Deere dealer or qualified service provider for more information.

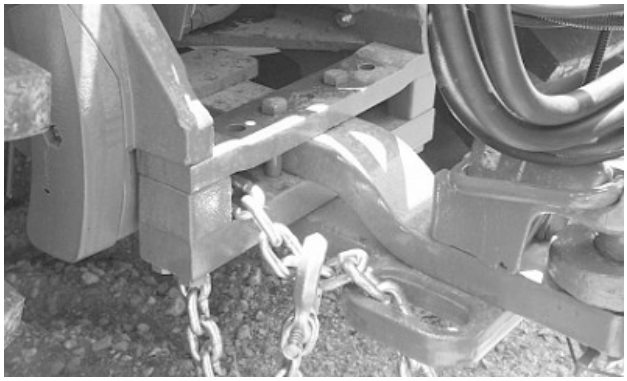
NOTE: John Deere connection kits include installation instructions.

Case Drain Connection Kits[a]	
Tractor Model	**Kit Number**
7000 and 7010 Series	BA30218[b]
7J, 7715, 7815, 7720, 7820, 7920, 7630, 7730, 7830, and 7930 Tractors	RE211441
7R Series Tractors	RE327561
7R Series, 8R Series (090001—), 8000, 8000 TEN, 8020, 8030, 8R and 8RT Series Tractors	BRE10281
9R (015000—), 9RT (906000—) and 9RX Series Tractors	BRE10112[c]
9R (015000—), 9RT (906000—) and 9RX Series Tractors	BRE10113[d]
9R (015000—), 9RT (906000—) and 9RX Series Tractors	BRE10114[e]
9R (015000—), 9RT (906000—) and 9RX Series Tractors	BRE10115[f]

[a] *All available kits are shown. Match the kit to the tractor.*
[b] *Order through service parts.*
[c] *For single reduction wheel.*
[d] *For double reduction wheel.*
[e] *For 4 track.*
[f] *For 2 track.*

NN32476,000036E-19-18MAY21

Install Drawbar Support on 9000 Series Tractors (Only for DB90)



A52423—UN—10JUL03

A Category 5 heavy-duty drawbar support is required on John Deere 9000 Series tractors when attaching to DB Planters.

See your tractor Operator's Manual or tractor Pre-Delivery Instructions for heavy-duty drawbar installation.

ER40675,0000D06-19-05MAR20

Recommended Tractor Settings

See Tractors Operator's Manual for the complete operating instructions.

Tractor Settings			
Item to set	**DB40**	**DB50, DB74**	**DB90**
Drawbar Distance from Ground	430 mm (17 in)		
Drawbar Position	Centered in Short Position		
Drawbar Support	Drawbar Support Installed		
Drawbar Category	Category 4 or Category 3 Heavy-Duty	Category 4 or Category 5	Category 5
Tire Ballast	Limit liquid or cast weight on rear tires[ab].		
Tractor Hydraulics Requirements	Closed Center Only Working pressure - 20 684 kPa (207 bar) (3000 psi)		
Tire Pressures	See Tractor Operator's Manual.		
Hydraulic Controls	See Hydraulic Connections Recommendations in Attaching and Detaching section		

[a]Dual rear tractor tires are recommended for stability and for load carrying capacity, especially when the machine is folded for transport.
[b]To carry the machine for transport, limit liquid or cast wheel weights on rear tractor tires as tire load carrying capacity is decreased.

ER40675,0000970-19-12MAR20

Initial Use of Central Commodity System (CCS™)

The first time a new seed tank is used, coat the bottom of the seed tank with a thin layer of talc. Mix triple amount of talc into first, two, or three bushels of seed. (See Meter Lubricant section). This provides the CCS™ and hoses a protective layer to resist buildup of seed coatings.

ER40675,0000F8D-19-05MAR20

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 sorghum or small popcorn seeds, see Preparing Mini-Hopper When Planting Sorghum and Small Popcorn 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 the Vacuum Level and Vacuum Level Recommendations at the end of the Operating the Seed Meter—ExactEmerge™ section.)
5. For planters equipped with MaxEmerge™ 5 and 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™ 5 and MaxEmerge™ 5e section.)
   b. Adjust the double eliminator. (See Adjust the Double Eliminator in Operating the Seed Meter —MaxEmerge™ 5 and MaxEmerge™ 5e section.)
   c. Adjust the seed meter hub. (See Adjust MaxEmerge™ 5 and MaxEmerge™ 5e Meter Hub in Operating the Seed Meter —-MaxEmerge™ 5 and MaxEmerge™ 5e section.)
   d. Set the vacuum level. (See Set the Vacuum Level and Vacuum Level Recommendations at the end of the Operating the Seed Meter—MaxEmerge™ 5 and MaxEmerge™ 5e section.)

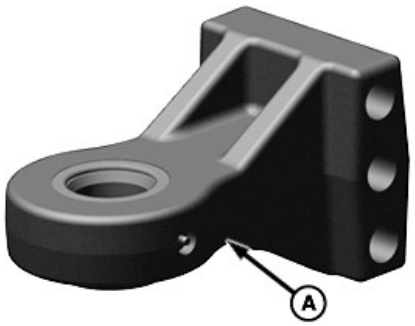
NN32476,000036F-19-30APR21

Determine Compatibility of Tractor Drawbar and Implement Clevis

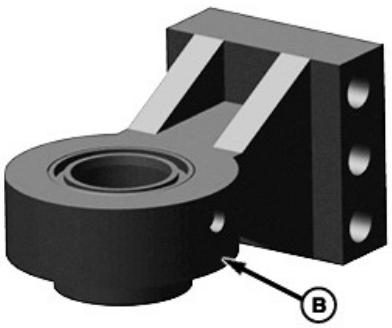
IMPORTANT: Avoid machine damage. Match the tractor drawbar and implement clevis. Refer to tractor Operator's Manual for specific drawbar information.

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.



BML020640—UN—06MAY21



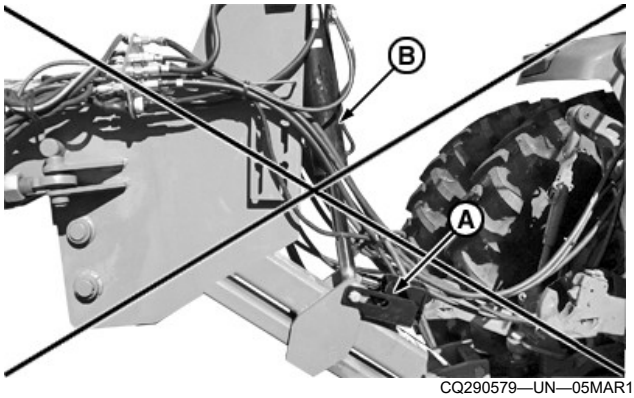
BML020639—UN—06MAY21

CCS is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company

- For DB40, DB50 and DB74 it is possible to work with category 4 (A) or category 5 (B).
- For DB90 it is only possible to work with category 5 (B).

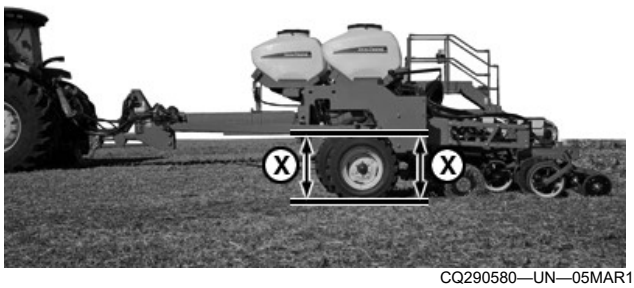
NN32476,000040B-19-26MAY21

Use Lock of the Drawbar Hitch Cylinder



CQ290579—UN—05MAR15

NOTE: While planting, it is not recommended to use the drawbar hitch cylinder (B) opened without the lock (A). If the cylinder is not locked, it extends totally and the alignment between the ground and planter is lost.



CQ290580—UN—05MAR15

NOTE: The length (X) must be the same on the front and rear of the planter frame. A small variation is allowed but the planter frame and ground must be aligned.

For more information, see Attaching and Detaching section.

ER40675,0000302-19-06MAR20

Check Frame Height

IMPORTANT: Only perform this procedure in the field.

1. Set adjustable downforce system to zero pressure.
2. Unfold and lower machine on level ground.
3. Level hitch on the planter front to rear. (See Level Hitch Tube in Attaching and Detaching section.)
4. Measure from the ground to the bottom of (7 x 7 in) frame. Measurement is approximately 533—560 mm (21—22 in) at the following locations:
   - Center of planter
   - End of left-hand side wing
   - End of right-hand side wing
   - Middle of left-hand side and right-hand side wings if machine has five section (DB90)
5. If frame height is not 533—560 mm (21—22 in), see Adjust Main Frame Height and Adjust Wing Frame Height in this section.

NOTE: After adjust planter height is necessary to procedure the height sensor calibration.

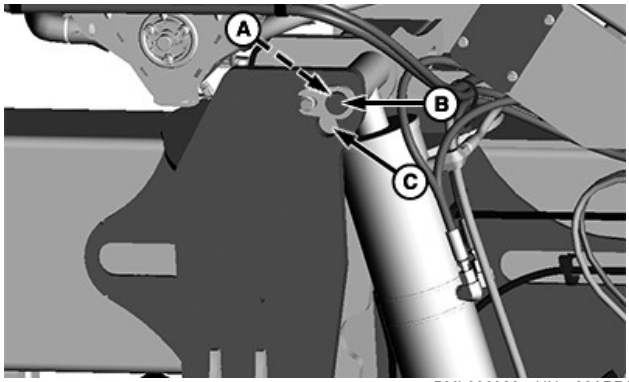
ER40675,000100C-19-01FEB23

Adjust the Main Frame Height

NOTE: The soil conditions may vary and affect the frame height. In this case, it is necessary to repeat the adjustment.

NOTE: The wing wheels can be adjusted differently than the center frame wheels due to varying attachments and frame configurations.

DB40, DB50, and DB74



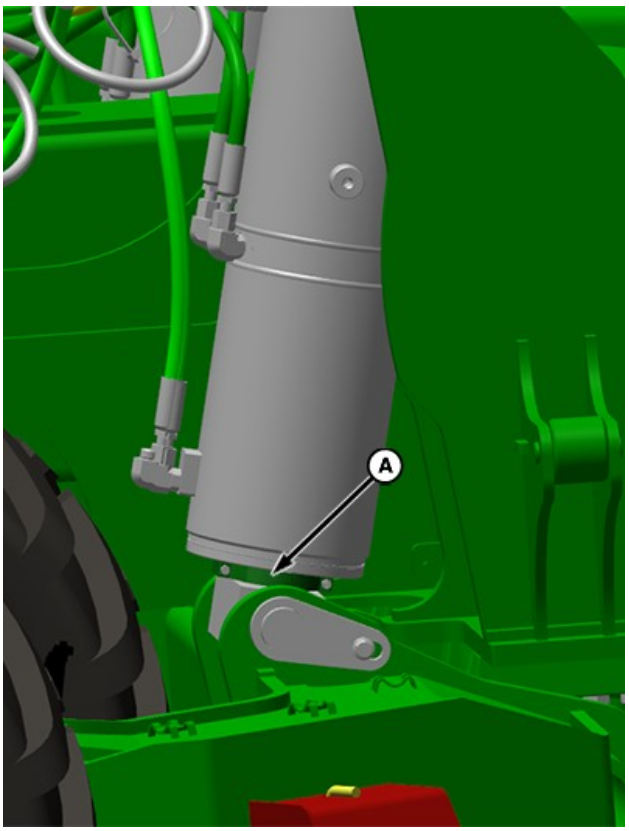
BML006929—UN—30APR21

Center Frame Cylinder

To increase the main frame height in conditions where the main frame is lower than the wings, move the top pin (B) of the transport cylinder to the hole (C).

To decrease the main frame height in conditions where the main frame is higher than the wings, move the top pin (B) of the transport cylinder to the hole (A).

DB90



BM058059—UN—30OCT23

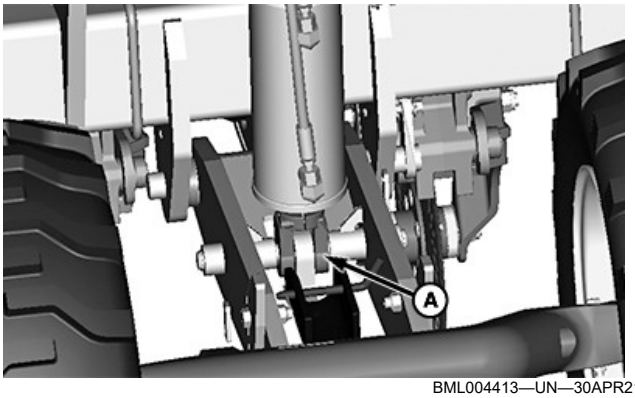
Center Frame Cylinder

To adjust the main frame height use spacers (A) on the transport cylinders supplied with the planter in the attachment box.

TS95756,0000175-19-30OCT23

Adjust the Wing Frame Height

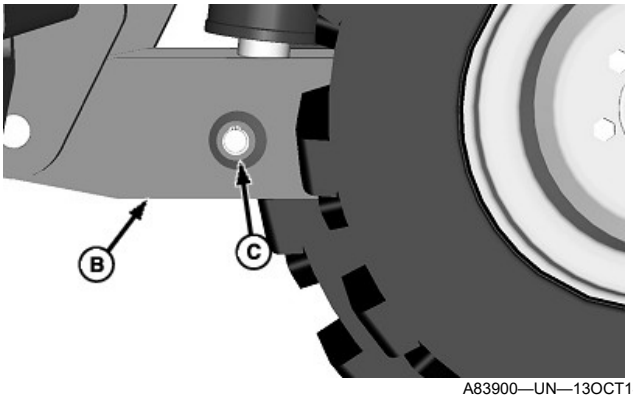
DB40, DB50, and DB74



BML004413—UN—30APR21

Wing Cylinder Clevis DB40, DB50, and DB74

If the frame height differs between the center frame and the wing frames, adjust the threaded clevis (A) on the cylinder.



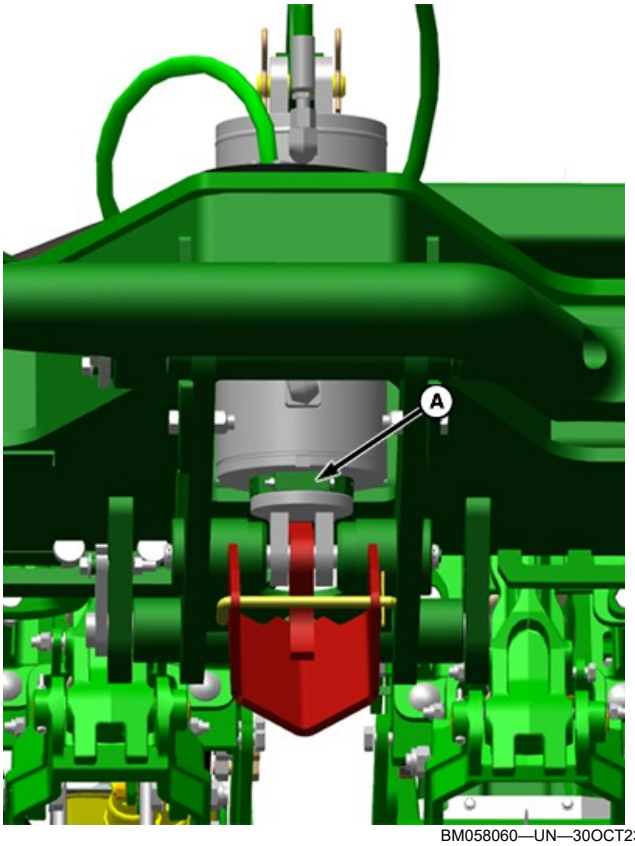
A83900—UN—13OCT14

Wheel Support DB40, DB74, and DB74

If more adjustment is required, install the wheel support (B).

NOTE: The pin location (C) is not centered in the support, which allows the adjustment by reversing the mounting orientation.

DB90



BM058060—UN—30OCT23

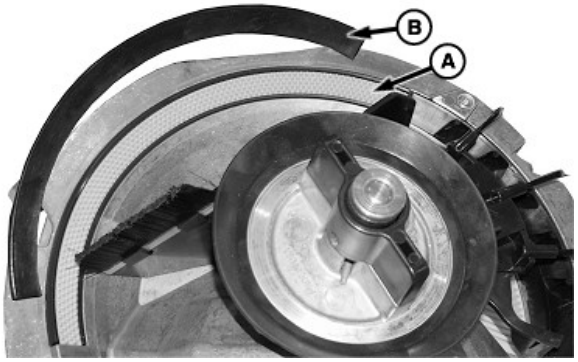
Wing Cylinder DB90

To adjust wing frame height use spacers (A) on wing cylinders supplied with planter in attachment box.

NN32476,0000371-19-30OCT23

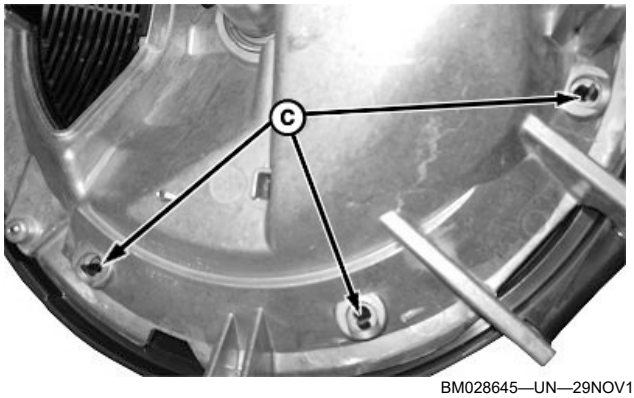
Change the Meter Strip—Only for ExactEmerge™

1. Determine which agitator strip is needed for the crop being planted.



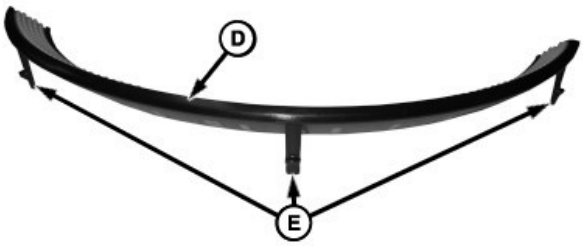
A83322—UN—19AUG14

2. The agitator strip (A) has a rough surface and the smooth strip (B) has a smooth surface. (See Seed Meter Settings in Operating the ExactEmerge™ Seed Meter section for the recommended agitator strip by crop.)
3. Remove the meter from the row unit. (See Remove and Install the ExactEmerge™ Seed Meter in Operating the ExactEmerge™ Seed Meter section.)
4. Open the seed meter dome. (See Clean Out Seed Hoppers and Vacuum Metering Units in Operating the ExactEmerge™ Seed Meter section.)
5. Remove the seed disk. (See Clean Out Seed Hoppers and Vacuum Metering Units in Operating the ExactEmerge™ Seed Meter section.)

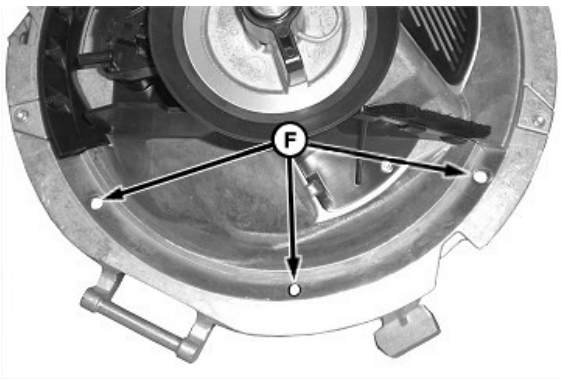


BM028645—UN—29NOV17

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

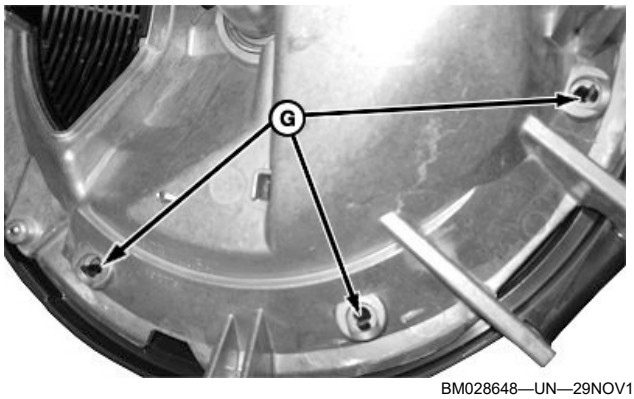


BM028646—UN—29NOV17



BM028647—UN—29NOV17

7. To install the correct agitator strip (D) in the meter, align the tabs (E) with the holes (F).



BM028648—UN—29NOV17

8. Push the strip into position until the tabs (G) latch into the holes.
9. Install the correct seed disk. (See Install the Seed Disk in Operating the ExactEmerge™ Seed Meter section.)

NOTE: The meter hub height must be checked when the seed disk is changed.

10. Adjust the meter hub height. (See Adjust the Seed Meter Hub Height in Operating the ExactEmerge™ Seed Meter section.)
11. Close the seed meter dome.
12. Install the meter on the row unit. (See Remove and

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Install the ExactEmerge™ Seed Meter in Operating the ExactEmerge™ Seed Meter section.)

NN32476,0000372-19-26APR21

Preparing Mini-Hopper When Planting Standard Seed Sizes



A50710—UN—17OCT02

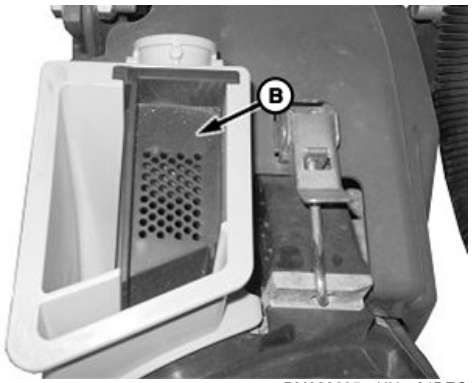
Covers

1. Remove the covers (A). Larger seeds will not come out of the tanks with the covers installed.



A79241—UN—21NOV13

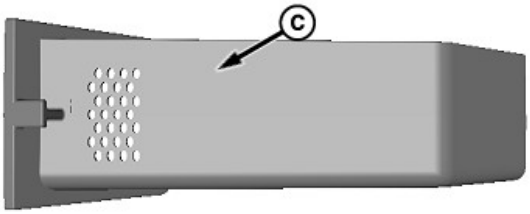
Black Discharge Elbow—MaxEmerge™ 5 and MaxEmerge™ 5e



BM028695—UN—21DEC17

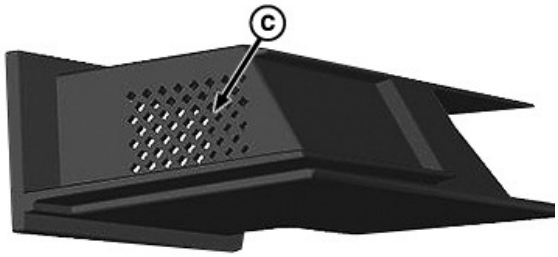
Black Discharge Elbow—ExactEmerge™

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



A79084—UN—21NOV13

Gray Discharge Elbow—MaxEmerge™ 5 and MaxEmerge™ 5e



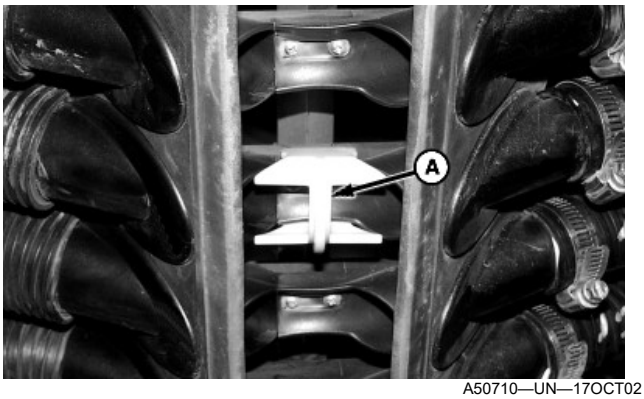
BM028696—UN—15OCT18

Gray Discharge Elbow—ExactEmerge™

3. **DB74 assembled with 45 or 48 row units:** Install the drain elbow (with small holes) (C) in the hoppers that have the elbow. These rows are responsible for making the derivation of seed for the subsequent row.

NN32476,0000373-19-26APR21

Preparing Mini-Hopper When Planting Sorghum and Small Popcorn



A50710—UN—17OCT02

Nozzle Inserts

ExactEmerge is a trademark of Deere & Company

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.

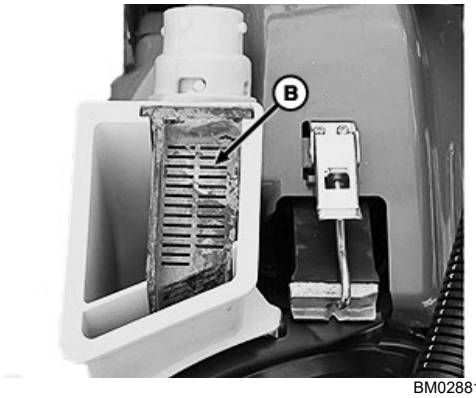
NOTE: Cotton seeds that are especially small can require nozzle inserts (A) and discharge elbows.

1. Install the nozzle inserts (A) over all nozzles before filling the tank.



A79241—UN—21NOV13

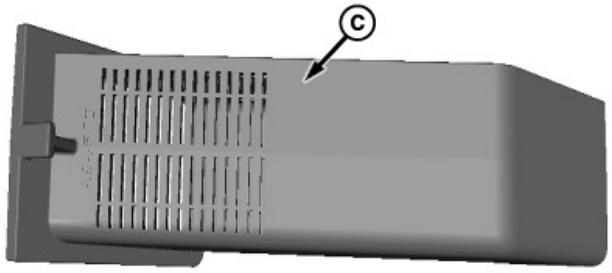
Elbow—Sorghum MaxEmerge™ 5 and MaxEmerge™ 5e



BM028817—UN—23FEB18

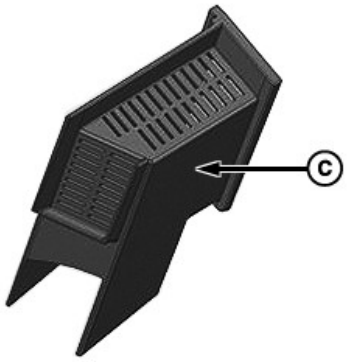
Elbow—Sorghum ExactEmerge™

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



A79121—UN—21NOV13

Elbow—Sorghum MaxEmerge™ 5 and MaxEmerge™ 5e



BM028818—UN—05NOV18

Elbow—Sorghum ExactEmerge™

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

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

NN32476,0000374-19-26APR21

Tire Inflation Pressure

Tire Pressure			
Tire Size	**kPa**	**bar**	**psi**
Center Frame Tires DB40 and DB50 400/55 R22.5	621	6.2	90
Center Frame Tires DB90 600/40 R22.5 (Standard)	552	5.5	80
Center Frame Tires DB74 600/40 R22.5	552	5.5	80
Wing Frame Tires All Machines 330/55 R16.5	413	4.1	60

NN32476,0000408-19-06MAY21

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 1100 rpm for proper operation and response of the seed meters.

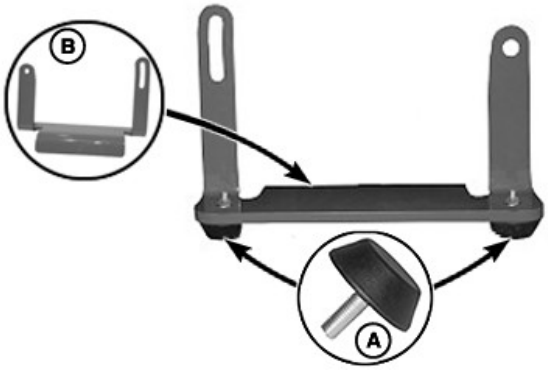
Verify that all the wiring harnesses are connected to the alternator and tractor. The harness on the alternator provides the primary power. The other harnesses connect the tractor monitoring and other functions. (See the SeedStar™ manual for system operation.)

ER40675,000036A-19-06MAR20

(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

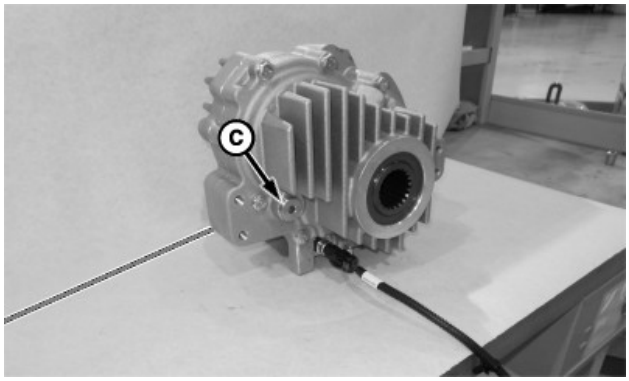
2. Within the kit, identify the support (B) that matches the tractor frame.

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.



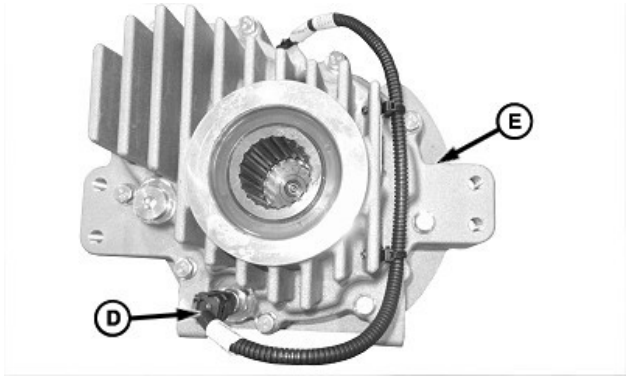
BM028612—UN—28NOV17

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 Hy-Gard™ oil until it is leveled with the bottom of the fill hole.

Specification

Tractor Power Generation Gear Case—Capacity. . . . . 0.5 L (0.11 gal)

7. Install the plug (C).

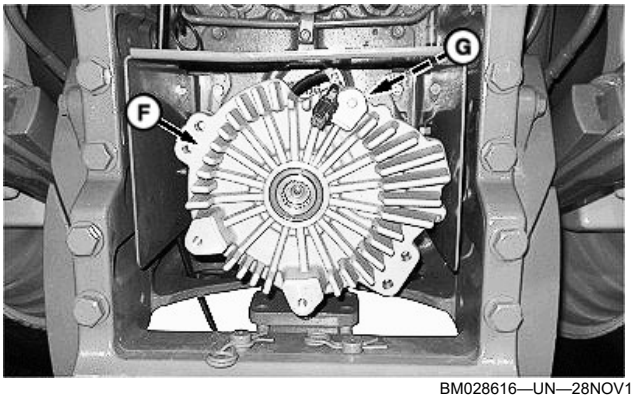


BM028615—UN—28NOV17

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

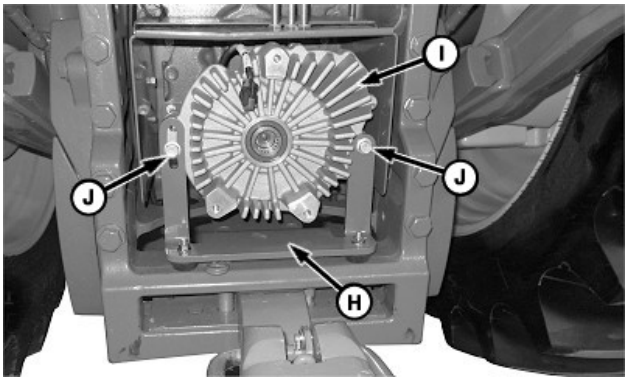
SeedStar is a trademark of Deere & Company

Hy-Gard is a trademark of Deere & Company



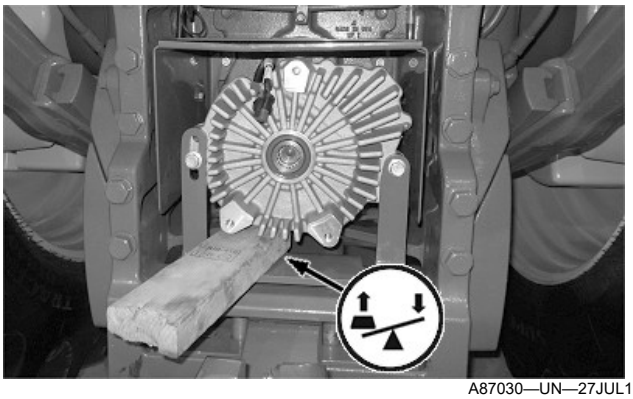
BM028616—UN—28NOV17

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

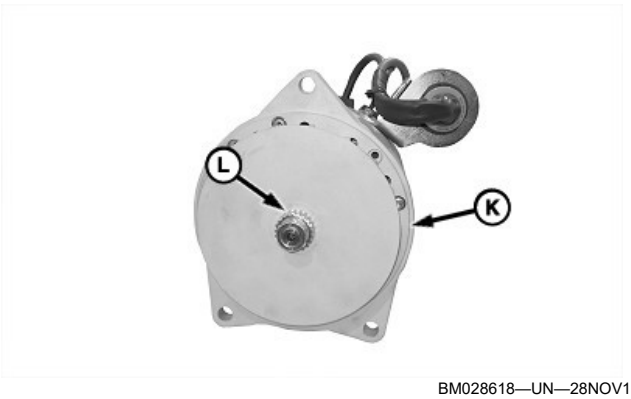
10. Align the support (H) with the gear case (I).
11. Install and slightly tighten screws (J). Let them loose enough for gear case adjustment.
12. Slightly pry up on the gear case, push down on the footing bracket, and then tighten the screws (J).



A87030—UN—27JUL16

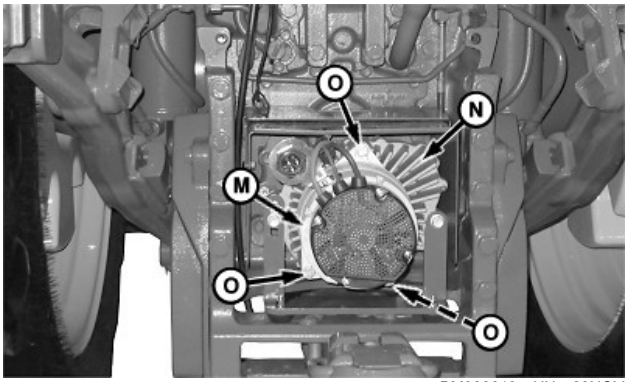
13. Remove the prying device.

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



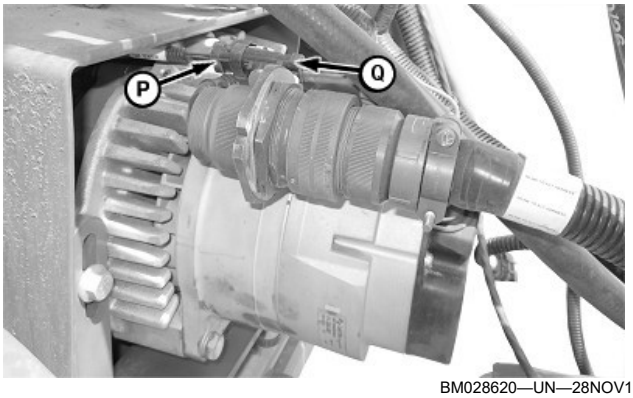
BM028618—UN—28NOV17

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.)



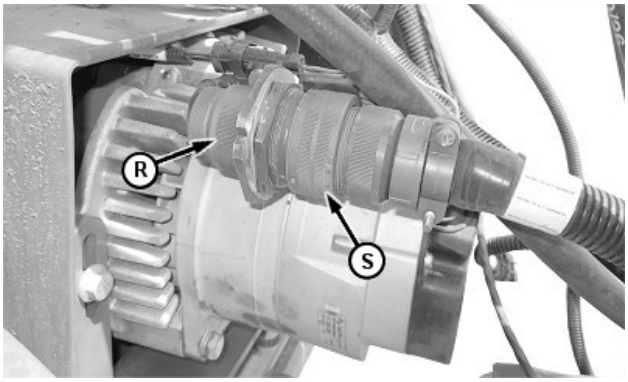
BM028619—UN—28NOV17

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



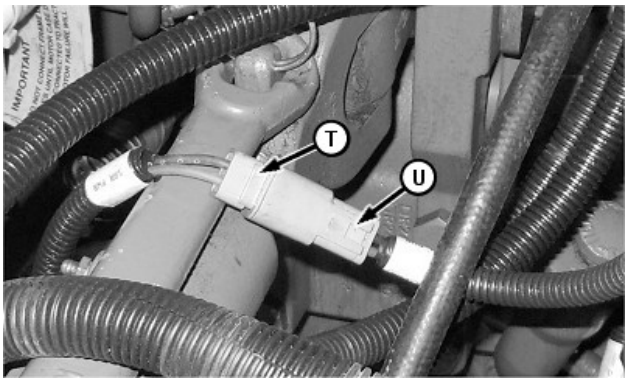
BM028620—UN—28NOV17

16. Connect the temperature wiring harness (Q) to the alternator connector (P). (DB40 and DB50)



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.

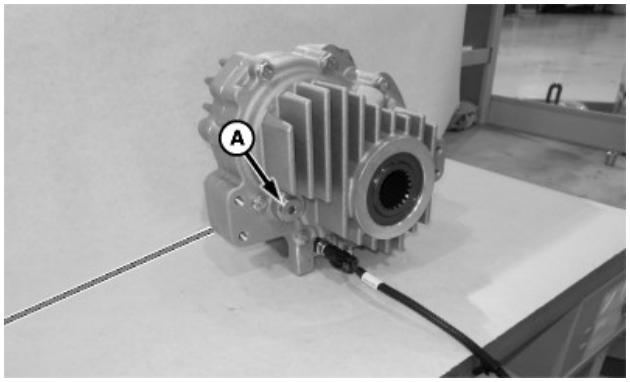
NN32476,000026D-19-08AUG22

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.

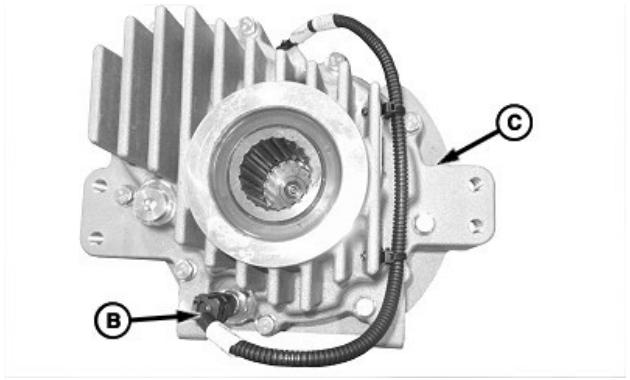
IMPORTANT: Avoid damage to the sensor. Do not rest the weight of the gear case on the sensor.

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 approximately 0.5 L (17 fl oz) of oil or until the oil is leveled with the bottom of the hole. (See Lubrication section.)
5. Install the plug (A).

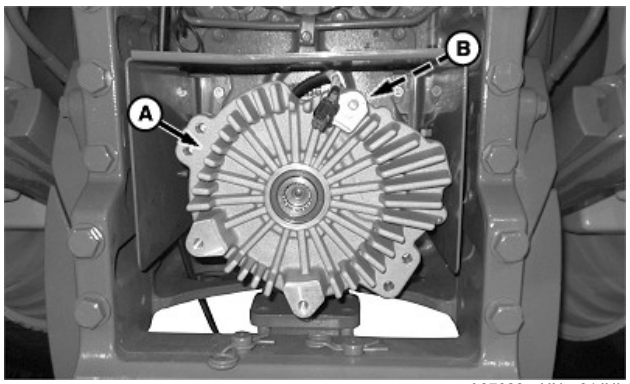


BM044776—UN—10SEP19

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

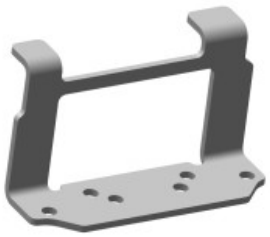
Installation on Tractors with Fixed Drawbar

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



A87028—UN—31JUL15

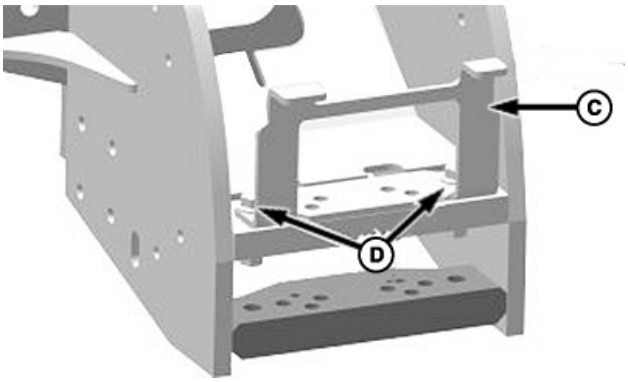
1. With the harness positioned behind the gear case, attach the gear case (A) to the power take-off (PTO) shaft (B).



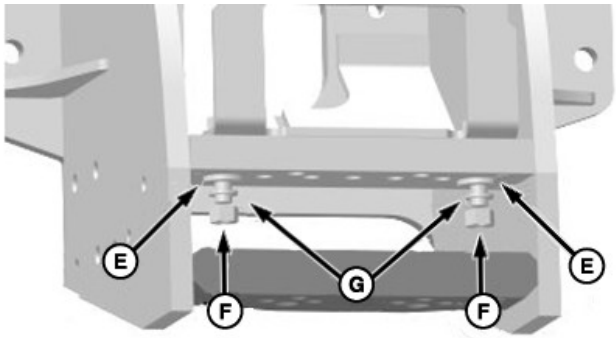
A99938—UN—15MAR18

Fixed Drawbar Support

2. Locate the supplied support.

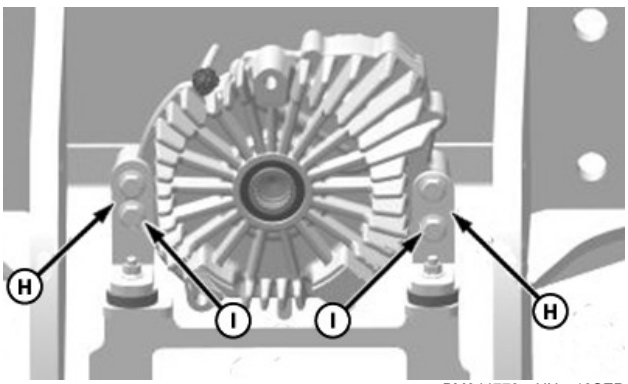


BM044773—UN—10SEP19



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).

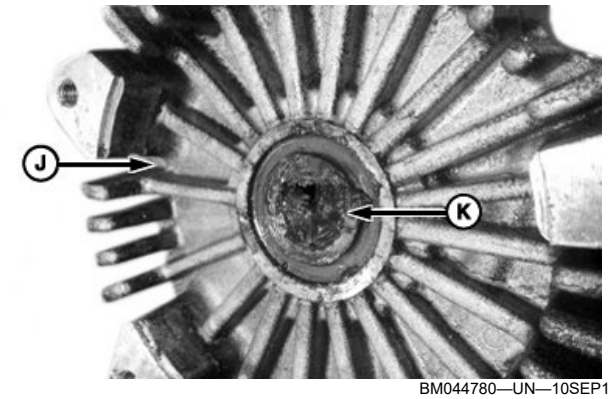
NOTE: Leave the support bracket screws (I) loose enough for gear case adjustment.

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

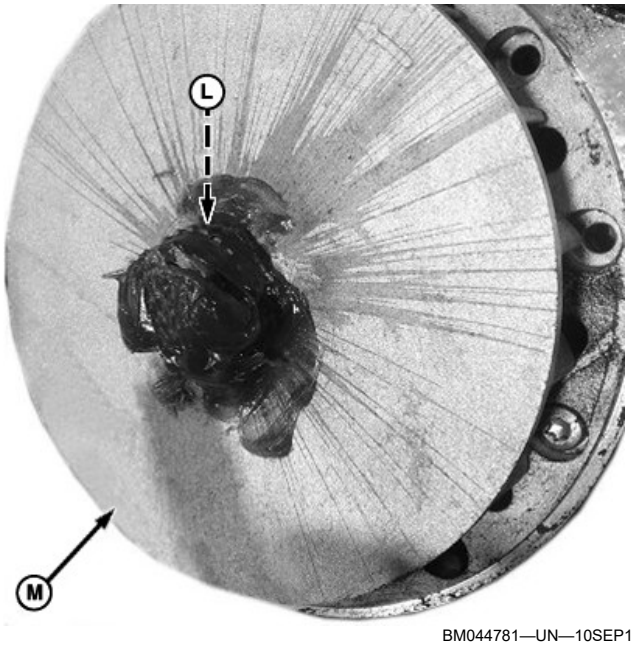
Specification

Support Bracket Screws—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.

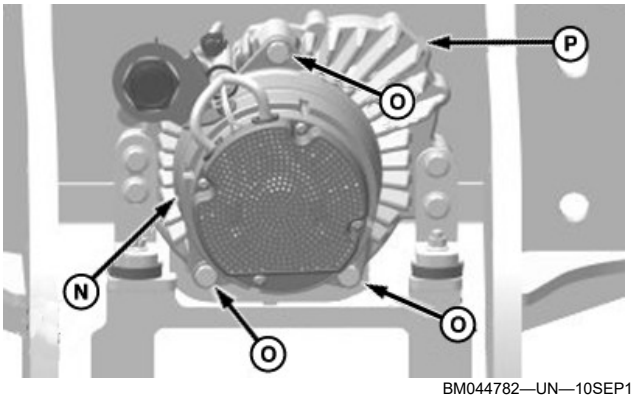


BM044780—UN—10SEP19



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.)

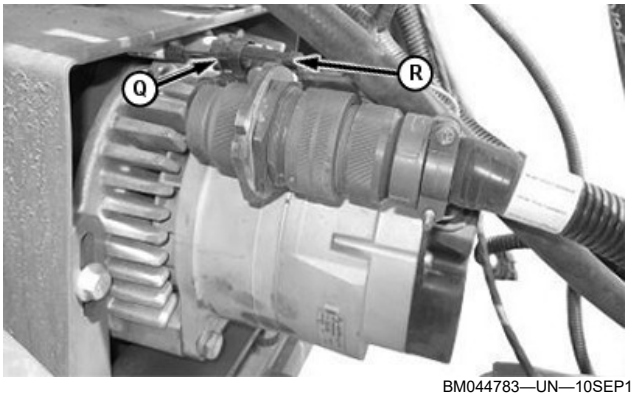


BM044782—UN—10SEP19

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

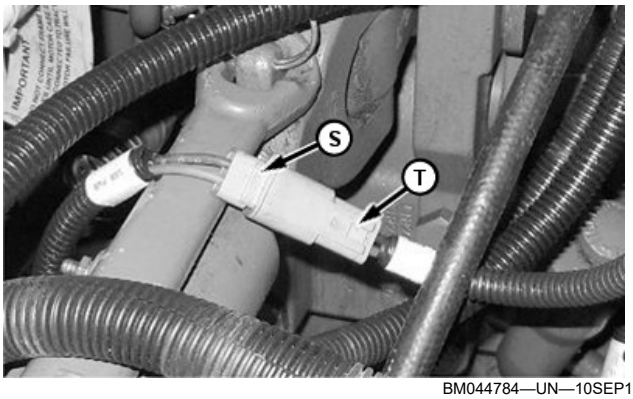
Specification

Alternator Screws—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.

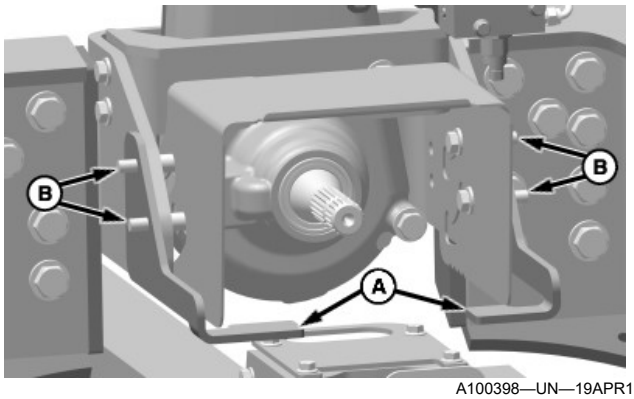
Installation on Tractors with Wide-Swing Drawbar



A99940—UN—15MAR18

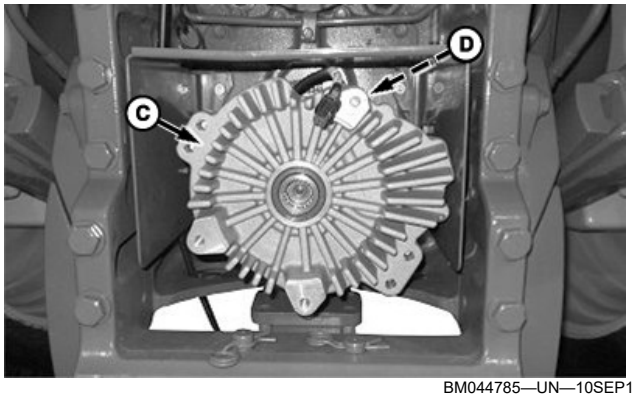
Wide-Swing Drawbar Brackets

1. Locate the supplied brackets.



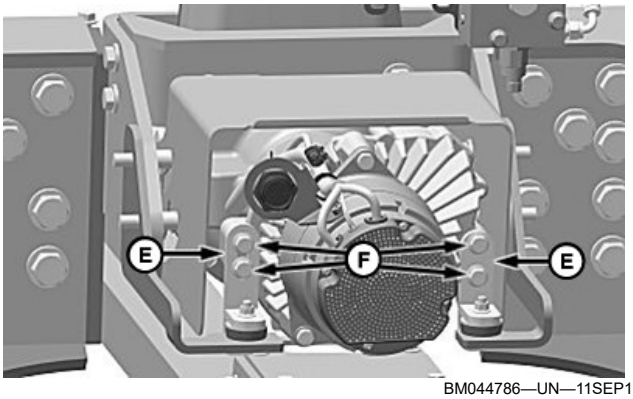
A100398—UN—19APR18

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

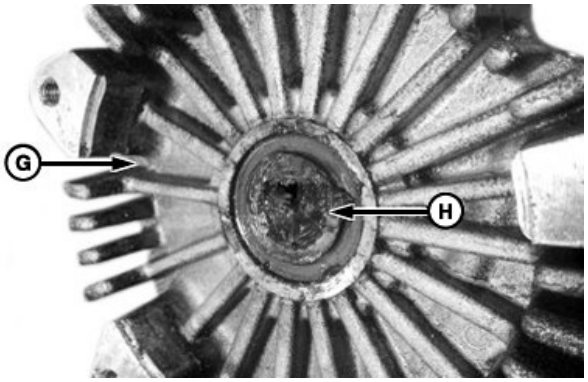
NOTE: Leave the screws (F) loose enough for gear case adjustment.

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

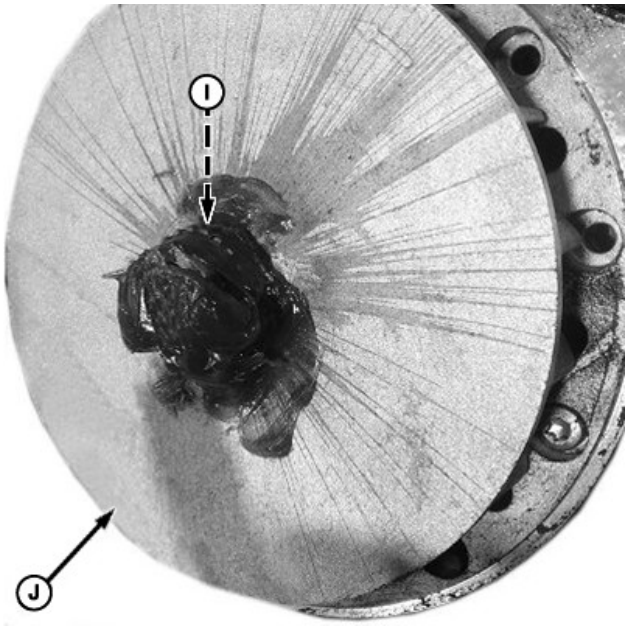
Specification

Support Bracket
Screws—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.

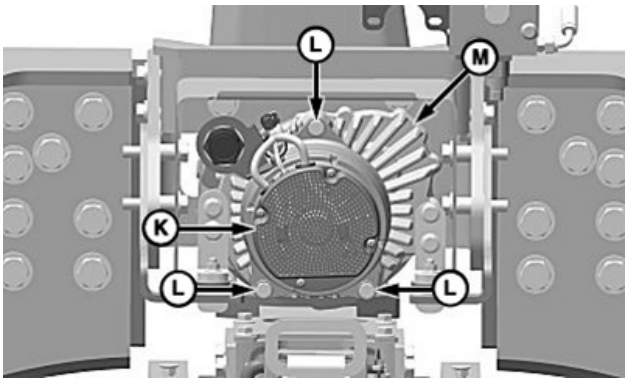


BM044787—UN—10SEP19



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.)

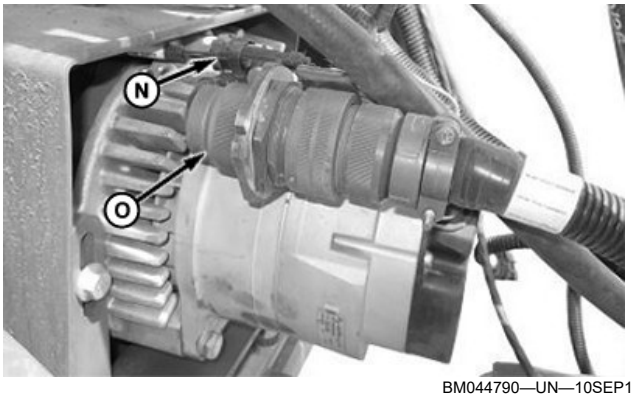


BM044789—UN—10SEP19

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

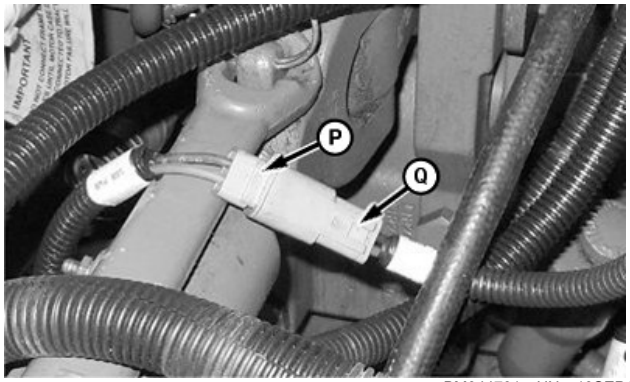
Specification

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



BM044790—UN—10SEP19

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

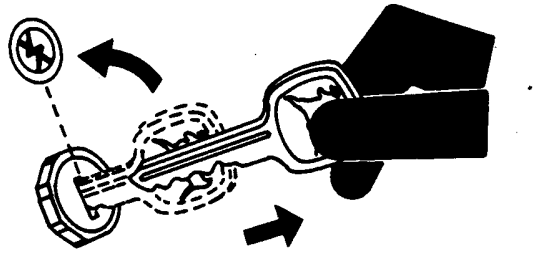


BM044791—UN—10SEP19

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

TS95756,0000C2A-19-06MAR20

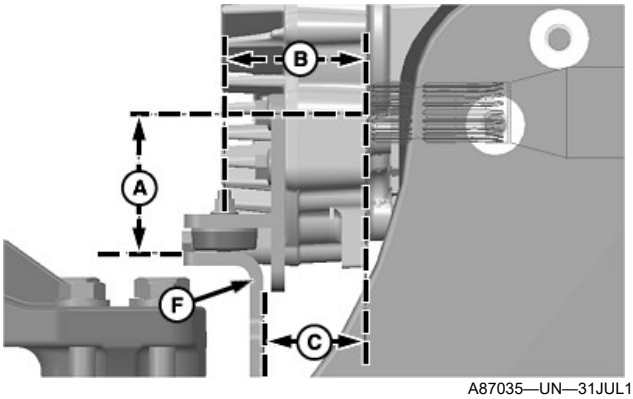
Install the Tractor Power Generation System on Other Tractors



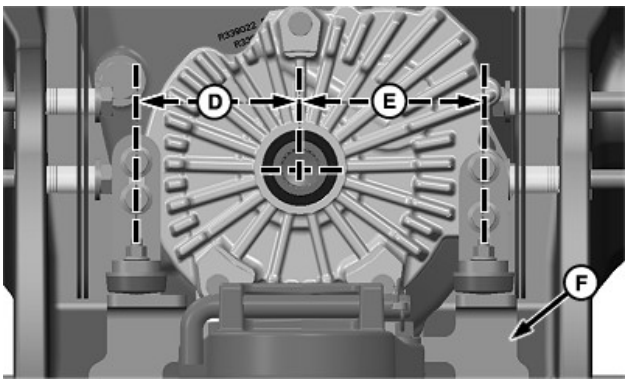
TS230—UN—24MAY89

1. Place the tractor in park, turn off the engine, and remove the key.

NOTE: Auto Vacuum and Easy Fold systems do not work, use Frame Control Console to Fold and Unfold planter, 4640 display does not operate tractor SCVs.



A87035—UN—31JUL15



A87036—UN—31JUL15

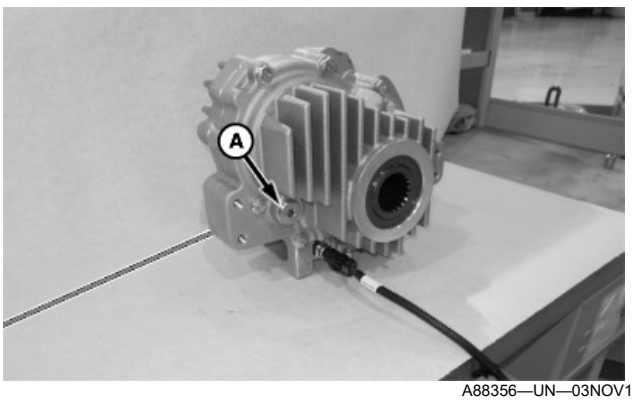
A—103 mm (4 in)
B—107 mm (4-1/4 in)
C—76 mm (3 in)
D—134 mm (5-1/4 in)
E—150 mm (5-7/8 in)
F—Lower Support

2. To fabricate a lower support (F), use dimensions (A—E).

IMPORTANT: Avoid damage to the power generation system. Verify that the lower support is tightly fastened to the tractor frame.

3. Install the fabricated support on tractor.

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



A88356—UN—03NOV15

Avoid damage to the gear case. Verify the oil level.

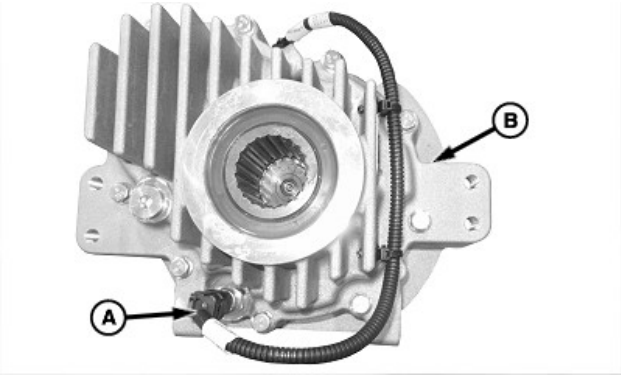
4. Place the gear case on a level surface with the vanes vertical. Remove plug (A). Check the oil level in the gear case. Fill the gear case to the specified volume or until the oil is level with the bottom of the hole.

Specification

John Deere Hy-Gard™
Oil—Volume. . . . . 0.5 L (17 fl oz)

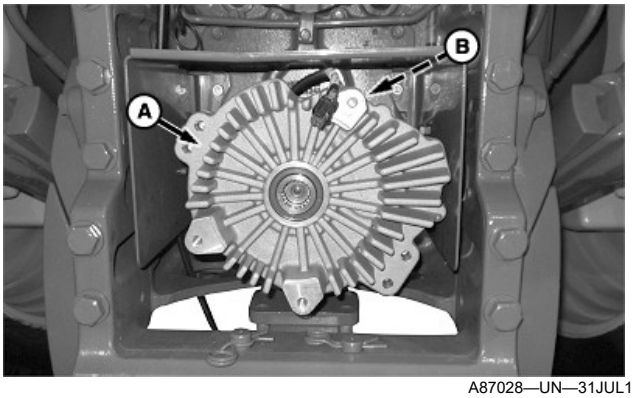


A87025—UN—31JUL15



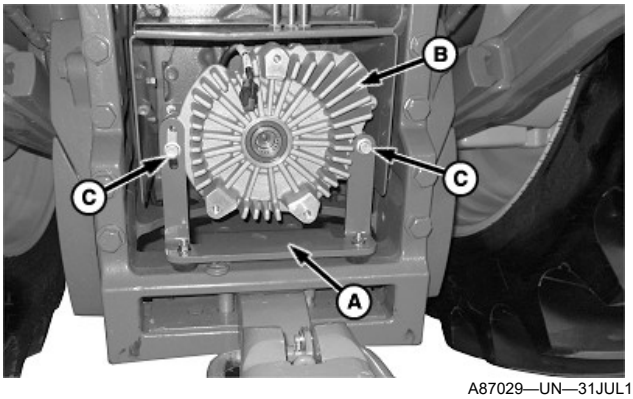
A87027—UN—31JUL15

5. Install the temperature harness (A) on the gear case (B).

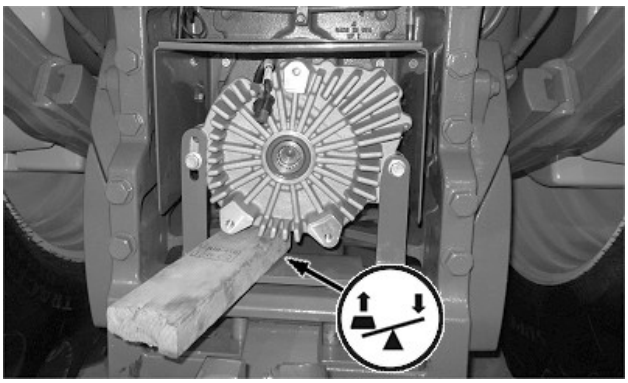


A87028—UN—31JUL15

6. Place the harness behind the gear case (A) and attach the gear case to the PTO shaft (B).



A87029—UN—31JUL15



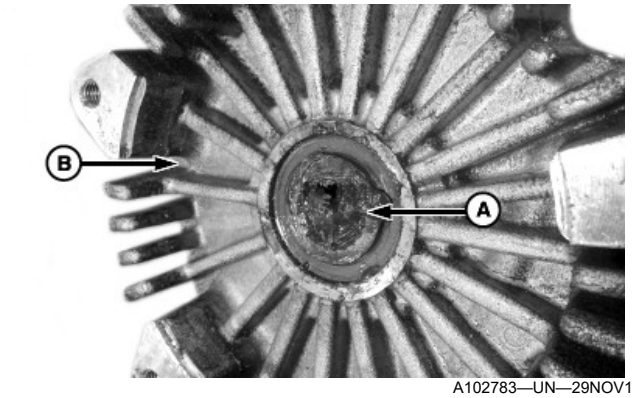
A87030—UN—27JUL16

7. Align the support (A) for the attachment to the gear case (B).
8. Install the screws (C). Tighten the cap screws slightly, leaving them loose enough for the gear case adjustment.
9. Pry up on the gear case slightly, while pushing down on the footing bracket, and then tighten the screws (C).

Specification

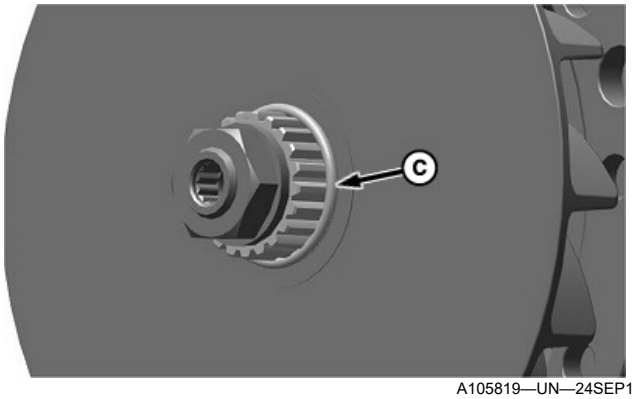
Screw (C)—Torque (dry). . . . . 70 N·m (52 lb·ft)

10. Remove the prying device.

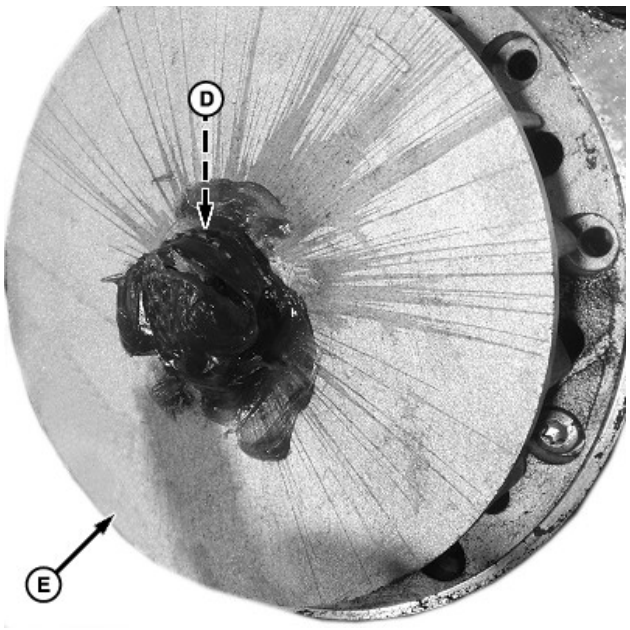


A102783—UN—29NOV18

Hy-Gard is a trademark of Deere & Company



A105819—UN—24SEP19



A105820—UN—24SEP19

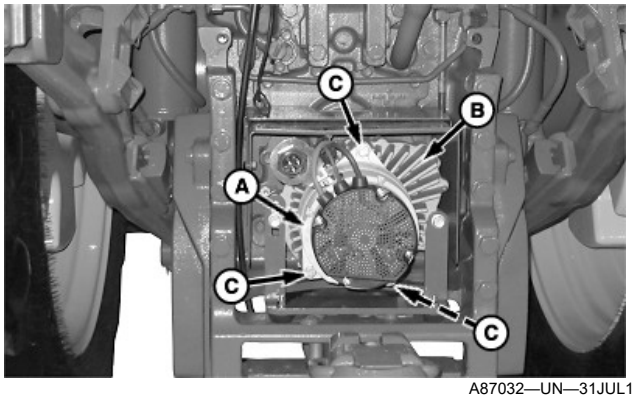
IMPORTANT: Avoid damage to the gear and shaft. Lubricate the gear every time the alternator is installed and annually.

NOTE: The O-ring helps retain the grease on the gear after grease has been applied.

11. Using the specified lubricant, fill the cavity (A) on the gear case (B). Verify that the O-ring (C) is installed on the gear (D) of the alternator (E). Apply the same amount of lubricant to the gear (D) on the alternator (E).

Gear Lubrication — Specification

Gear Grease—Type	Class GC-LB with 3—5% Molybdenum Disulfide
Interval—Time	Each Installation and Annually

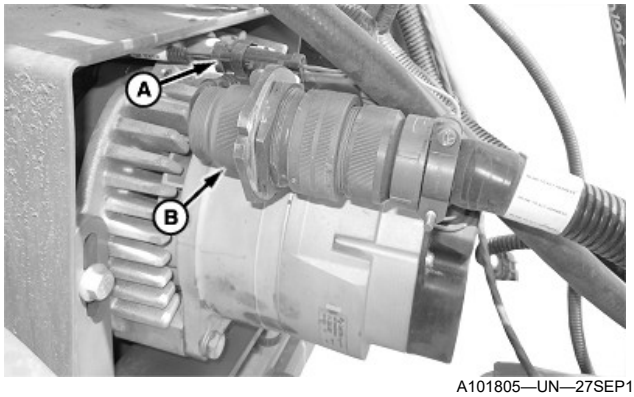


A87032—UN—31JUL15

12. Attach the alternator (A) to the gear case (B) using screws (C). Tighten the cap screws to specification.

Specification

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



A101805—UN—27SEP18

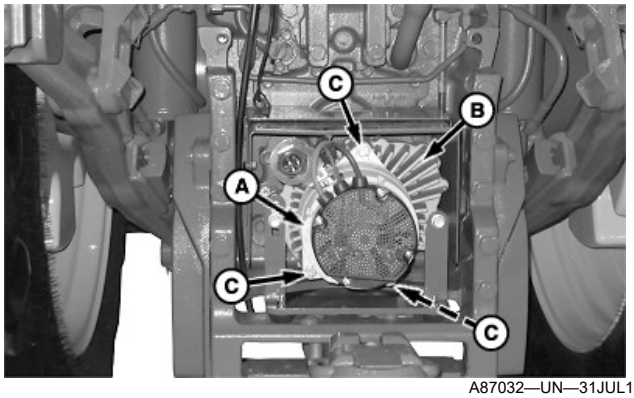
13. Connect the temperature harness (A).

14. Connect the power generation harness (B).

N8XR12J,00006BA-19-07APR22

Remove the Tractor Power Generation System

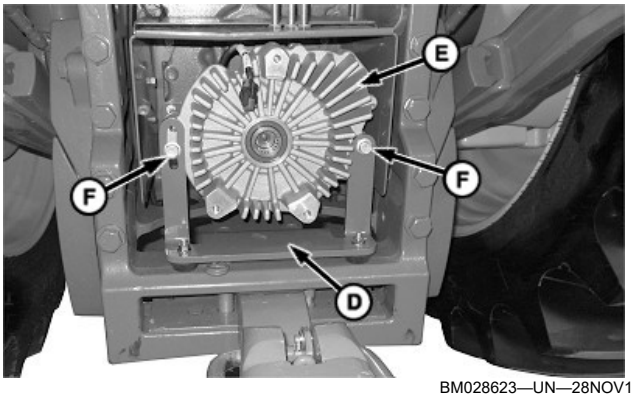
⚠ CAUTION: Avoid serious injury or death. Keep the tractor's Power Take Off shields in place.



A87032—UN—31JUL15

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

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

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 lowered into planting position. Achieving this position can be difficult with some attachment combinations, especially when planting in soils that are hard to penetrate.

In this case, reduce implement downforce. Avoid using more downforce than required.

IMPORTANT: Raising and lowering implement in folded position is not recommended. Openers can be damaged.

- 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 rates carefully.
- Check the tire pressure before starting to seed.
- 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 damp, rainy days, or after sitting overnight, run CCS™ fan at recommended rotation, with machine stationary for 10 minutes.
- Use clean seed for best results.

IMPORTANT: Precipitation or debris may enter outer wing 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.

ER40675,0001017-19-06MAR20

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.

ER40675,0000AFA-19-26MAR19

Frame Controls

If equipped with the frame control functions on the display or the Easy Fold system:

- See your SeedStar™ Application Help or the SeedStar™ operator's manual for additional information.
- Leave the frame control 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.

WP29706,0000B7E-19-03JUL18

Recommended Operating Speed

With MaxEmerge™ 5	
Configuration	**Ground Speed km/h (mph)**
Any	3.2—9.0 (2.0—5.6)

MaxEmerge is a trademark of Deere & Company

CCS is a trademark of Deere & Company

SeedStar is a trademark of Deere & Company

With MaxEmerge™ 5e and ExactEmerge™	
Configuration	Ground Speed km/h (mph)
Any	2.4—16.0 (1.5—10.0)

MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company

IMPORTANT: Avoid damage to the pressure system. Do not travel at speeds that cause the system pressure to exceed the maximum of 620 kPa (6.2 bar) (90 psi). To avoid exceeding the maximum pressure, adjust the orifice sizes or the ground speed.

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

NN32476,000037A-19-18MAY21

Check Frame Height

IMPORTANT: Only perform this procedure in the field.

1. Set adjustable downforce system to zero pressure.
2. Unfold and lower machine on level ground.
3. Level hitch on the planter front to rear. (See Level Hitch Tube in Attaching and Detaching section.)
4. Measure from the ground to the bottom of (7 x 7 in) frame. Measurement is approximately 533—560 mm (21—22 in) at the following locations:
   - Center of planter
   - End of left-hand side wing
   - End of right-hand side wing
   - Middle of left-hand side and right-hand side wings if machine has five section (DB90)
5. If frame height is not 533—560 mm (21—22 in), see Adjust Main Frame Height and Adjust Wing Frame Height in this section.

NOTE: After adjust planter height is necessary to procedure the height sensor calibration.

ER40675,000100C-19-01FEB23

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

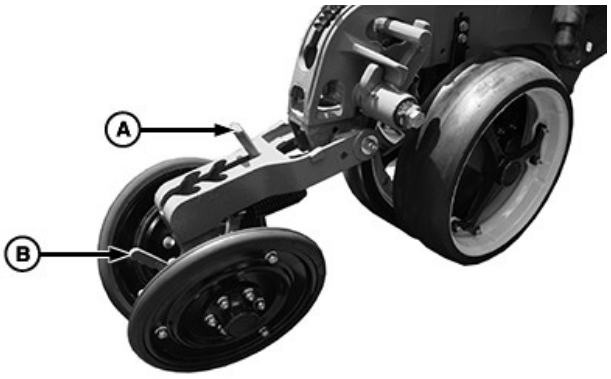
Lift System Leveling

To level the machine lift system, fully raise machine and hold remote cylinder operating lever activated for approximately 10 seconds.

ER40675,0001046-19-06MAR20

Adjust Closing Wheel Downforce

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



BM028624—UN—31OCT18

1. Move pressure lever (A) to the desired position in accordance with the ground conditions.
2. Move adjustment lever (B) to desired position to adjust the attack angle of wheels.
3. Keep pressure lever (A) in neutral position using the weight of the assembly itself.

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

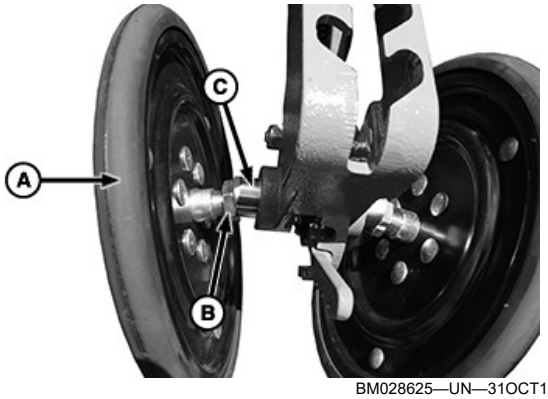
Select the optimum pressure lever position for the current soil conditions. The middle position only applies the weight of the closing wheels as they float on the soil surface.

Verify that the closing wheels are centered over the seed furrow.

NN32476,000037B-19-18MAY21

Adjust the Distance Between Closing Wheels

CAUTION: Avoid serious injury or death. Raise the planter completely and install the cylinder stops.



BM028625—UN—31OCT18

1. Park machine on level ground.
2. Loosen the nut (B).
3. Unscrew the wheel (A) from the axle (C) just enough to reach the nut (B).
4. Tighten the nut (B).

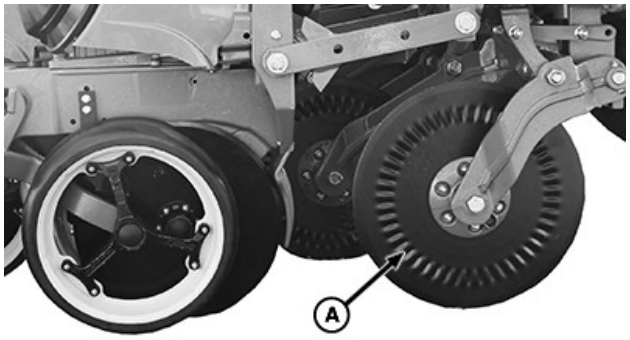
NOTE: This adjustment permits a better flow of straw between wheels. Use in conditions of high straw content.

ER40675,000033F-19-06MAR20

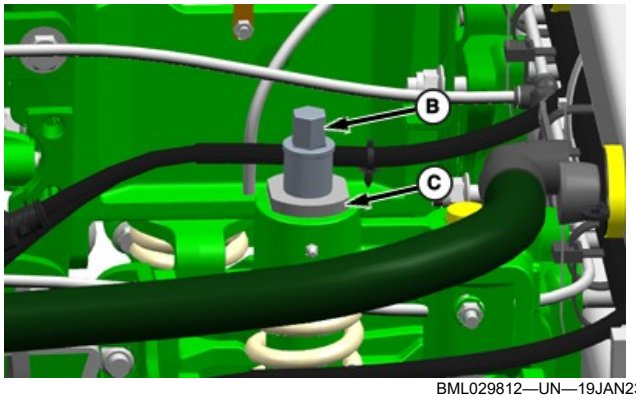
Adjust Coulter with Mechanical Downforce

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.

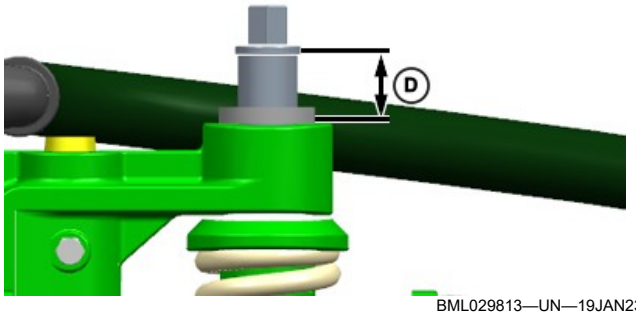


BM028831—UN—14NOV18



BML029812—UN—19JAN23

1. To increase coulter pressure (A) on the ground, turn nut (B) clockwise and if equipped, lock the position with counternut (C).
2. To decrease the pressure, if equipped, unlock the counternut (C) and turn nut (B) counterclockwise. The pressure should be the same for all planting units.

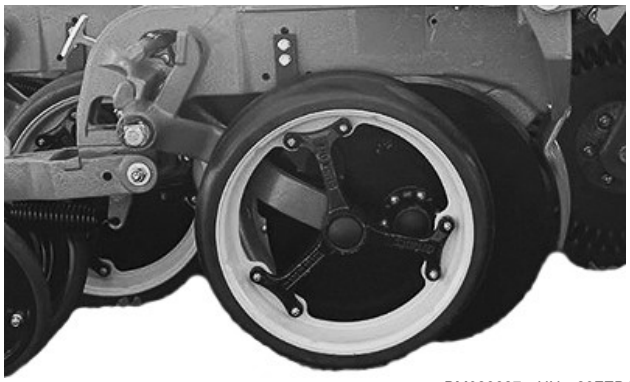


BML029813—UN—19JAN23

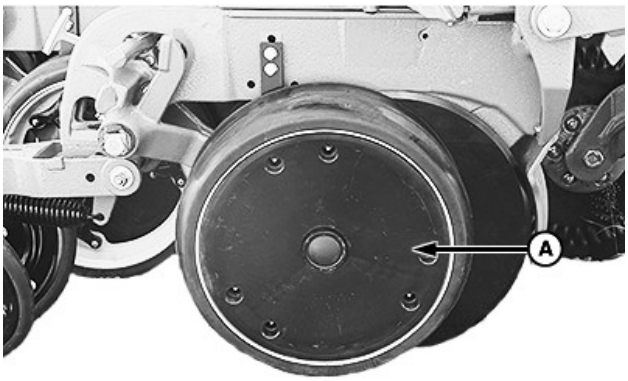
NOTE: When removing the pressure, the distance (D) must be at least 55 mm (2.1 in).

h3ymaet,1674131099921-19-19JAN23

Use Depth Gauge Wheels Caps



BM028827—UN—23FEB18



BM028826—UN—23FEB18

It is recommended to use the cap (A) on the depth gauge wheel, in soils where corn was planted in the previous harvest. This procedure prevents interference of the depth gauge wheels.

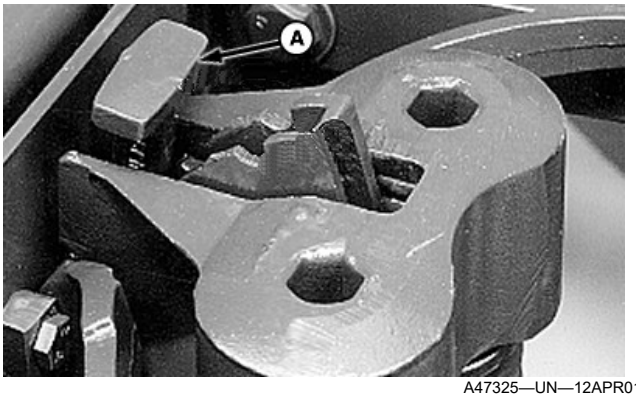
ER40675,00004AD-19-06MAR20

Heavy-Duty Downforce Springs—Only for MaxEmerge™ 5

The adjustable heavy-duty downforce spring system is recommended when planting in rough field conditions and when soil residue is difficult to penetrate. Spring system transfers main frame weight to planting unit, to minimize bounce and to assist opening in soils with hard penetrating conditions. The amount of force transferred is adjustable from 0—181 kg (0—400 lb). Never use more downforce than necessary to prevent excessive drive wheel slip. In tough conditions, ballast weight may be required.

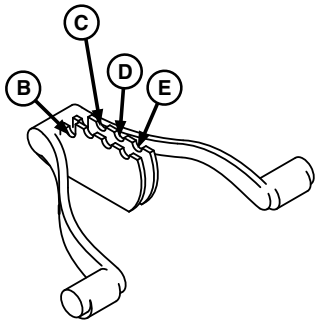
To adjust downforce springs, proceed as follows:

1. Raise the machine.



A47325—UN—12APR01

Handle in Minimum Position

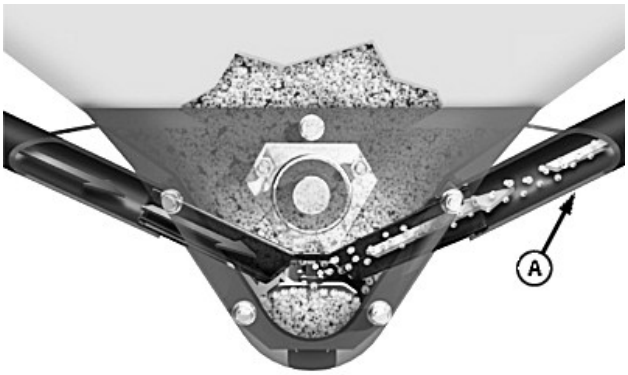


A47306—UN—11APR01

2. Lift the spring adjustment handle (A) and place into notch (B, C, D, or E) for the desired amount of downforce.
   - Use notch (B) for 0 kg (0 lb) of downforce.
   - Use notch (C) for 57 kg (125 lb) of downforce.
   - Use notch (D) for 113 kg (250 lb) of downforce.
   - Use notch (E) for 181 kg (400 lb) of downforce.

NN32476,000037D-19-16APR21

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. Chemically treated seed requires 2—3 times the rate of lubrication to avoid plugging. 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.

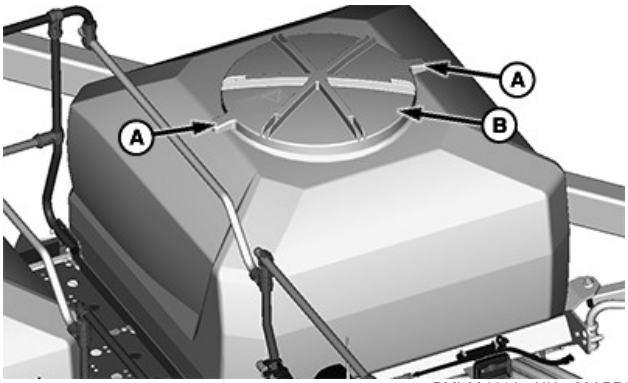
IMPORTANT: Avoid hydraulic motor and tank lid damage. Do not exceed 24 inch of water in tank pressure at the pressure gauge.

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.)

ER40675,0000ADB-19-06MAR20

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.

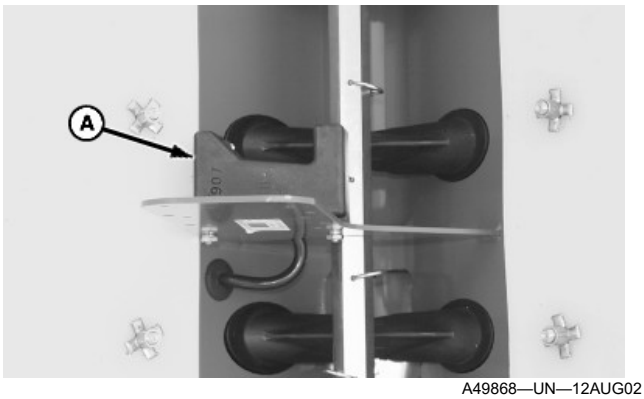
NOTE: There is and arrow at each handle (A) that indicates the rotation direction to open the lid (B).

N8XR12J,00006BC-19-19JAN23

Tank Level Sensors

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

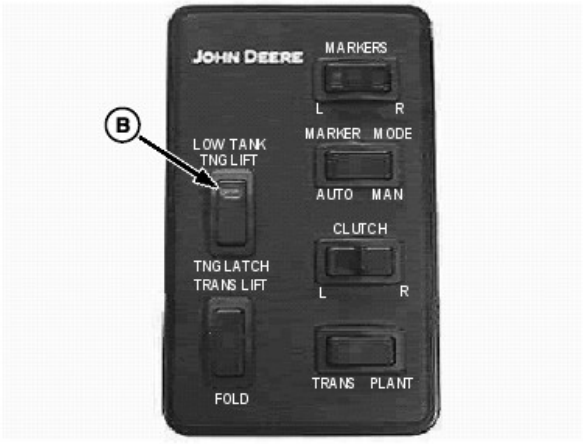
NOTE: The tank level sensor is factory installed at the lowest setting. The sensor can be moved higher on the bracket to receive an earlier warning.



A49868—UN—12AUG02

The tank level sensors (A) are optical sensors.

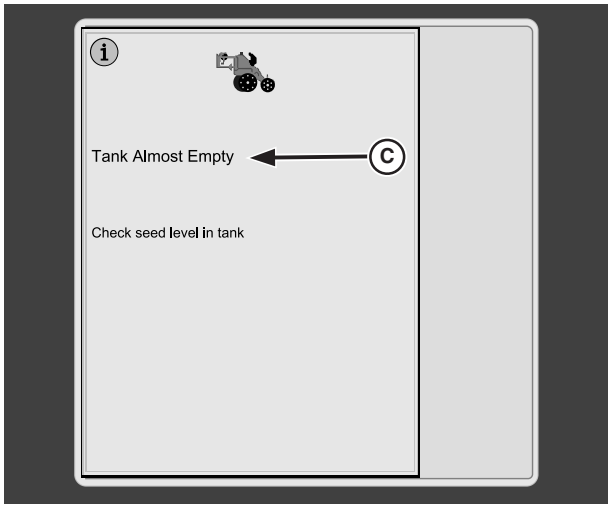
CCS is a trademark of Deere & Company



A53315—UN—12NOV03

Tank Low Warning Light—MaxEmerge

For planters equipped with MaxEmerge™ 5 seed meter, when a sensor is exposed in one of the tanks, the low tank warning light (B) on the frame control console turns on.



BML004415—UN—30APR21

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 (C) appears on the display.

NN32476,0000376-19-26MAY21

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 or a low tank level sensor light comes on, 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.

ER40675,0000AF8-19-06MAR20

Fill the Central Commodity System (CCS™) Tank

CAUTION: When transporting machine on roadways, tanks must be empty.

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. See your John Deere dealer.

Clean seed level sensor before filling seed tanks.

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ExactEmerge is a trademark of Deere & Company

CCS is a trademark of Deere & Company



CQ298113—UN—22MAY14

The first time a new tank is used, coat the inside bottom of bulk tanks with a thin layer of graphite powder. Mix triple the amount of graphite powder into the first two or three refills of seed placed in the bulk tank (See in Meter Lubricant section). This will coat the inside of the CCS™ system and hoses with a protective layer of graphite powder, to resist buildup of seed coatings.

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.

Close lids tightly, after filling to avoid plugging of delivery lines when system is activated.

ER40675,0000F91-19-06MAR20

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.

ER40675,00003E3-19-06MAR20

Set Central Commodity System (CCS™) Tank Pressure

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

NOTE: Vacuum and CCS for DB40, DB50, DB 74 type B, and DB90 can be adjusted only on tractor SCVs. For DB40, DB50, and DB74 Type A it can also be adjusted on flow control valve.

To set the tank pressure, proceed as follows:

1. Make sure that tank lids are closed.

IMPORTANT: Avoid machine damage. Warm oil by running vacuum blowers (if equipped) or installing a hose loop in the selective control valve SCV per tractor Operator's Manual. Do not use the central commodity system (CCS) fan to warm oil or seed delivery hoses can plug.

2. Warm up tractor oil for 15 minutes.
3. Lower the machine, leave SCV in constant retract detent position.



CQ298115—UN—22MAY14

4. For Type A planters, open the flow control valve (A) counterclockwise until seed starts flowing to hoppers.
5. For Type B planters and DB90, 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 lower 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.

6. When row hoppers are full and machine is not

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moving, adjust pressure according to the below tables.

DB40, DB50, and DB74			
Product	**Pressure in Inches of Water**	**Nozzle Insert Required**	**Small Seed Discharge Elbow (Vacuum Only)**
Soybeans	13	No	No
Small Corn (over 2000 seeds/lb)	11	No	No
Medium Corn (from 2000 through 1200 seeds/lb)	13	No	No
Large Corn (less than 1200 seeds/lb acre)	15	No	No
Cotton	11	No	Optional
Sorghum	9	Yes	Yes
Sunflowers	6	No	No

DB90			
Product	**Pressure in Inches of Water**	**Nozzle Insert Required**	**Small Seed Discharge Elbow (Vacuum Only)**
Soybeans	16	No	No
Small Corn (over 2000 seeds/lb)	14	No	No
Medium Corn (from 2000 through 1200 seeds/lb)	16	No	No
Large Corn (less than 1200 seeds/lb)	18	No	No
Cotton	12	No	Optional
Sorghum	10	Yes	Yes
Sunflowers	6	No	No

h3ymaet,1655903133547-19-15DEC22

Operate Central Commodity System (CCS™)—Heavily Treated Seed or Large Seed Corn

IMPORTANT: Graphite must be mixed thoroughly during filling of tanks.

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

Vacuum Meters: When operating the central commodity system (CCS™) with heavily treated seed or large seed corn, DOUBLE the rate of talc. (See Meter Lubricant section.)

ER40675,00003E4-19-06MAR20

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



A50710—UN—17OCT02

Nozzle Inserts

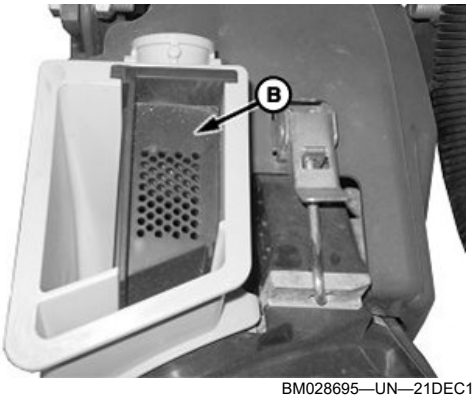
1. Remove the nozzle inserts (A). Larger seeds do not come out of the tanks with the nozzle inserts (A) installed.



A79241—UN—21NOV13

Black Discharge Elbow—MaxEmerge™ 5 and MaxEmerge™ 5e

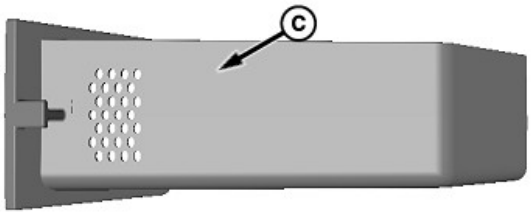
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BM028695—UN—21DEC17

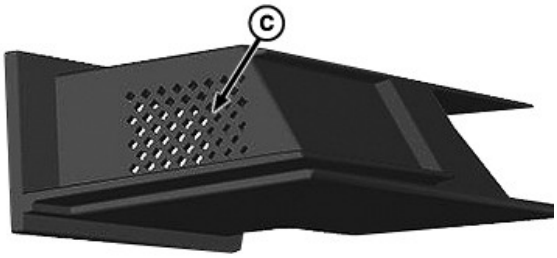
Black Discharge Elbow—ExactEmerge™

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



A79084—UN—21NOV13

Gray Discharge Elbow—MaxEmerge™ 5 and MaxEmerge™ 5e



BM028696—UN—15OCT18

Gray Discharge Elbow—ExactEmerge™

3. **DB74 assembled with 45 or 48 row units:** Install the drain elbow (with small holes) (C) in the hoppers that have the double elbow. These rows are responsible for the derivation of seed for the subsequent row.

NN32476,0000378-19-26MAY21

Operate Central Commodity System (CCS™) When Planting Sorghum and Small Popcorn—ExactEmerge™ Only

1. Prepare the mini-hopper. (See Preparing Mini-Hopper When Planting Sorghum and Small Popcorn in Preparing the Planter section.)



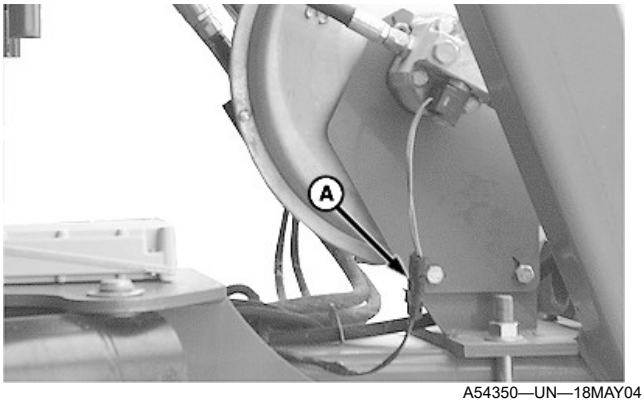
BM030115—UN—22FEB19

2. To prevent small seeds from falling, it is recommended to assembly the seal (D) as shown. The seal it is part of the bundle for growing sorghum. Consult your John Deere dealer.

NN32476,0000377-19-06MAY21

Plant Seed Plots with the Central Commodity System (CCS™)

NOTE: Due to the small quantity of seed being planted, removing the central commodity system (CCS™) from operation and filling the row units individually is recommended.



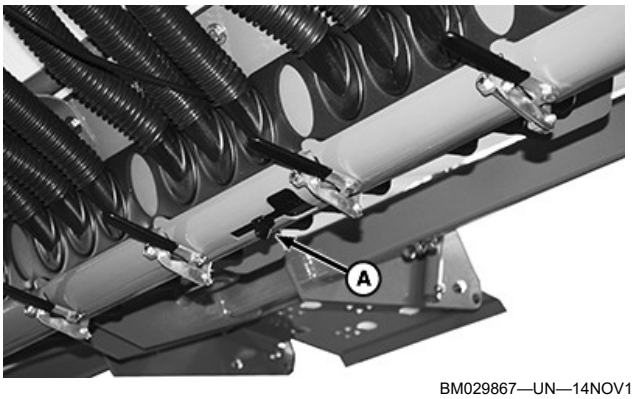
A54350—UN—18MAY04

1. Disconnect the harness connector (A) from the CCS™ blower.
2. Fill the row units individually instead of using the CCS™ tanks.

ER40675,0000316-19-06MAR20

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Partially Clean Out the Central Commodity System (CCS™) Tanks



BM029867—UN—14NOV18

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.

ER40675,0000317-19-07FEB20

Clean Out Central Commodity System (CCS™) Tanks

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

IMPORTANT: When cleaning tank for certified 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.

NOTE: Purge/Plant switch must be in PLANT/TANK CLEANOUT position or CCS™ fan will forcefully expel seed from cleanout doors.



CQ298116—UN—22MAY14

1. Open the cleanout door (A) on the bottom of the CCS™ tank.



BM030015—UN—08FEB19

2. Place a bucket (B) or container under cleanout door to catch remaining seed from the tank.
3. Close cleanout door.
4. Repeat for all other cleanout doors.

ER40675,0000318-19-06MAR20

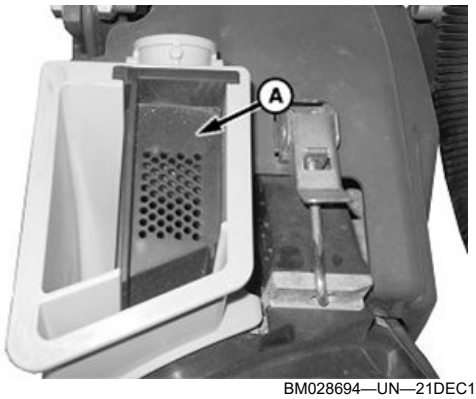
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Bridged and Blocked Central Commodity System (CCS™)



A78939—UN—21OCT13

MaxEmerge™ 5 and MaxEmerge™ 5e



BM028694—UN—21DEC17

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:

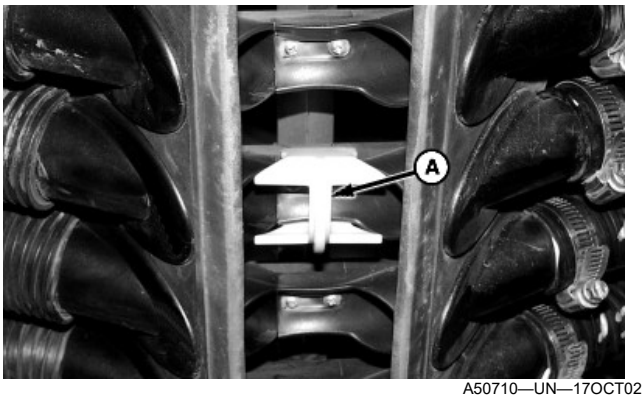
1. Start the CCS™ fan.
2. Remove the lid from the affected row unit hopper.
3. Observe the amount of air flowing through the hopper inlet (A).
   - If low air flow is noted, the CCS™ delivery hose is plugged. (See Remove CCS™ Hose Blockage in this procedure.)
   - If high air flow is noted, product has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

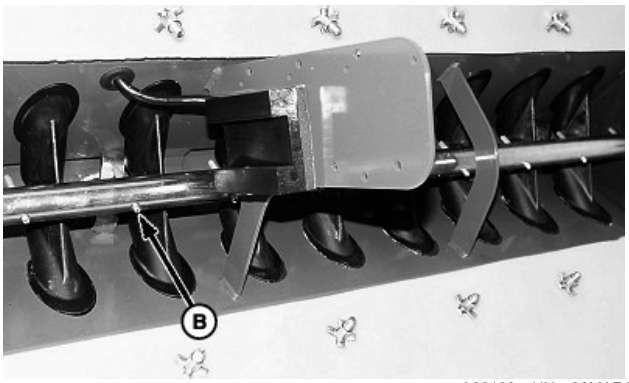
Product has Bridged in CCS™ Tank Manifold

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.



A62189—UN—06MAR08

   - 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.

NN32476,0000414-19-12MAY21

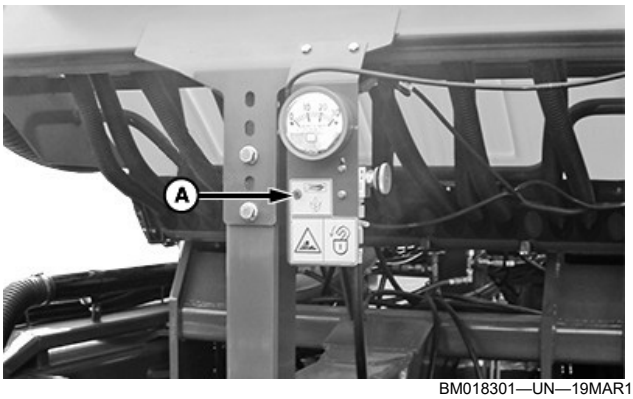
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Clean Out Seed Hoppers and Vacuum Metering Units

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.

NOTE: Type A planters use multiple SCVs for the vacuum function, while Type B planters use only one SCV for the vacuum function.

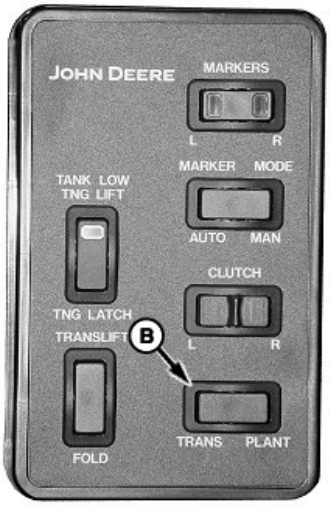
NOTE: Vacuum and CCS for DB40, DB50, DB74 type B, and DB90 can be adjusted only on tractor SCVs. For DB40, DB50, and DB74 type A, it can also be adjusted on flow control valve.



BM018301—UN—19MAR19

The purge/plant switch (A) allows the fan to operate while the machine is in raised position. Placing the switch in the purge position enables the operator to clean out the central commodity system (CCS) tanks and purge the hoses without climbing in and out of the tractor cab. The following procedure must be completed in the order given 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.)



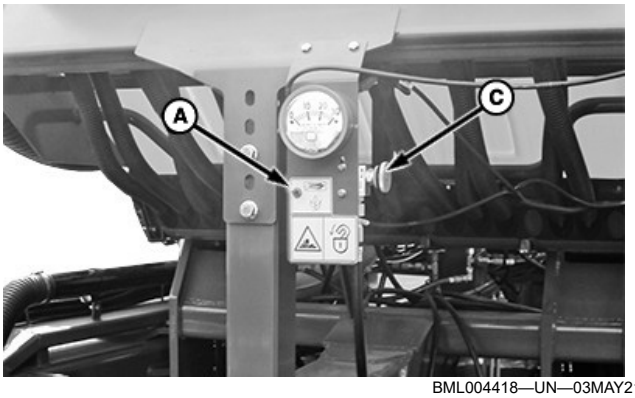
BML004426—UN—03MAY21

Frame Control Box—MaxEmerge 5

5. If the machine is equipped with MaxEmerge 5, place the TRANS/PLANT switch (B) in TRANS position.

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

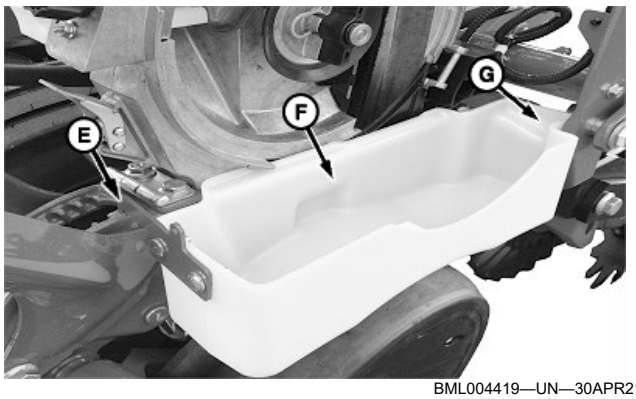
6. If the machine is equipped with MaxEmerge 5e, check on the tractor monitor if the frame control function is in plant mode.
7. Lower the planter onto the service locks and place the SCV lever into the detent position.
8. Remove the residual seed from the CCS tank. (See Clean Out Central Commodity System (CCS™) Tanks in Operating the Central Commodity System (CCS™) section.)
9. Check if all the tank lids and cleanout doors are closed.
10. If the machine is equipped with MaxEmerge 5, place the purge/plant switch (A) in the plant/tank cleanout position for the tank cleanout.



BML004418—UN—03MAY21

11. Place the purge/plant switch (A) in the purge hoses position.

12. For Type A planters, adjust the CCS fan control knob (C) until pressure gauge reads 50.8 cm (20 in) of water.
13. For Type B planters and DB90, activate the SCV to adjust the CCS fan until pressure gauge reads 50.8 cm (20 in) of water.



BML004419—UN—30APR21

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

CAUTION: Avoid injury from the sudden start of the fan. Do not leave the purge/plant switch (A) in the purge hoses position. 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 the purge/plant switch (A) is moved to plant position.

20. Place the tractor SCV in neutral position.
21. Place purge/plant switch (A) in the plant/tank cleanout position.

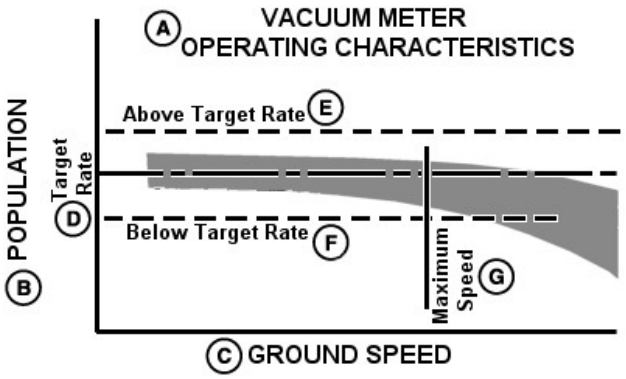
NOTE: The purge/plant switch (A) must be returned to the plant/tank cleanout position for best performance of the planter.

22. Remove the service locks.
23. If the machine is equipped with MaxEmerge 5, place the TRANS/PLANT switch (B) in the desired position and resume the operation.

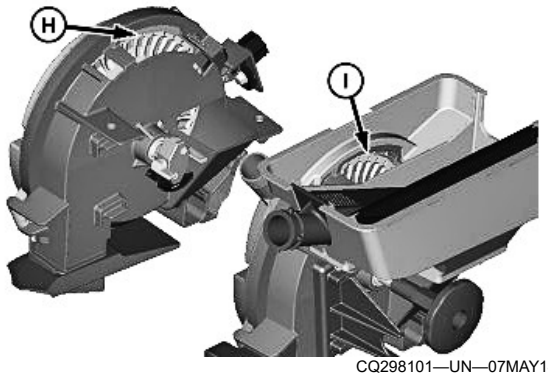
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Operating the Seed Meter—MaxEmerge™ 5 and MaxEmerge™ 5e

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 and shapes of seeds
- Planting rate variations
- Field conditions

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. See Seed Disk Recommendations in this section or your John Deere dealer.

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 to recommended level for crop.
- Turn meter by hand to verify that only one seed fits into each cell (H and I).

CROP STAND = SEED SINGULATION + SEED PLACEMENT + AGRONOMIC FACTORS

Seed Singulation = Seed Selection + Seed Disk Selection + Vacuum Level + Field Conditions + Maintenance

Seed Placement = Row Unit Maintenance + Speed + Field Conditions + Planter Attachments + Observation and Adjustment

Agronomic Factors = Seed Germination + Soil Temperature + Moisture + Nutrients + Pest Control + Weather

ER40675,0000BBA-19-06MAR20

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.

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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
Corn	Corn	Upper	No	No
Corn	ProMax 40	Upper	Yes	Yes
Sweet Corn	ProMax 40 or Small Sweet Corn	Upper	Yes	Yes
Popcorn	Sunflower, Popcorn, or Sorghum	Lower	No	No
Oil Sunflower	Sunflower or Popcorn	Lower	No	No
Confection Sunflower	ProMax 40 or Small Sweet Corn	Upper	Yes	Yes
Cotton	Delinted or Hilldrop Cotton	Upper	No	No
Cotton	Flat-Type Edible Bean	Upper	Yes	Yes
Soybean	Soybean, Cotton, or ProMax 64	Upper	No	Yes
Sorghum or Sugar Beet	Sorghum or Sugar Beet	Lower	Yes	Yes

Seed Knockout Wheel Kit

Seed Knockout Wheel Kit			
Kit Code	**Knockout Wheel Code**	**Seed Meter Type**	**Observations**
AA79986	H136448	MaxEmerge™ 5 e MaxEmerge™ 5e	Mandatory for sorghum seeds or small seeds (45-hole plain disks).
AA81736	A52389	MaxEmerge™ 5 e MaxEmerge™ 5e	Recommended for corn and soybeans seeds or large seeds (40-hole plain disks).
AA85089	A53272	MaxEmerge™ 5 e MaxEmerge™ 5e	Recommended for bean and soybean seeds (50-hole plain disks).
AA89145	A106147	MaxEmerge™ 5	Recommended for high population soybean seeds (64-hole plain disks).
-	A102718	MaxEmerge™ 5e	Recommended for oil sunflower with ProMax 40 x 2.5 disk.
-	A123990	MaxEmerge™ 5e	Recommended for cotton seeds with ProMax 64 x 2.8 disk.

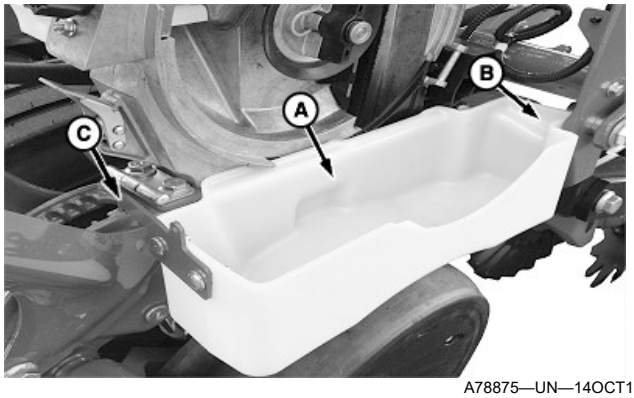
MaxEmerge is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company

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Access the Vacuum Meter

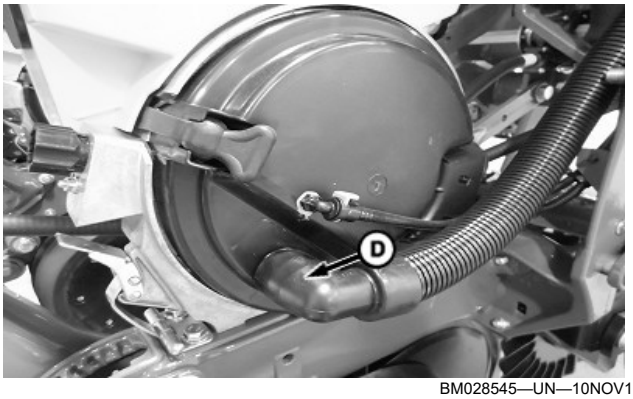
1. Locate the catch pan, attached on stair railing.

⚠ 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

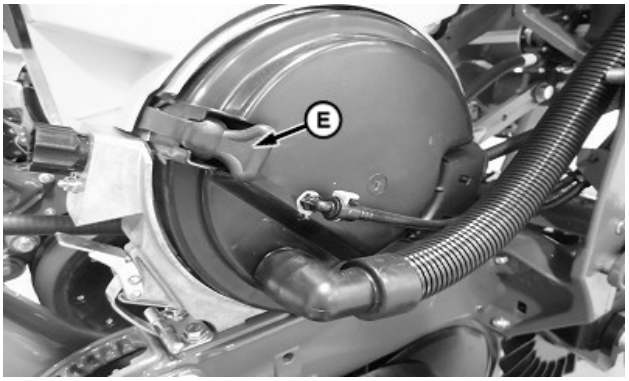
2. Install the seed meter catch pan (A) on the row unit by placing the plastic edge (B) near the parallel arms.
3. Install the hooked plate (C) into the indented edge as shown.



BM028545—UN—10NOV17

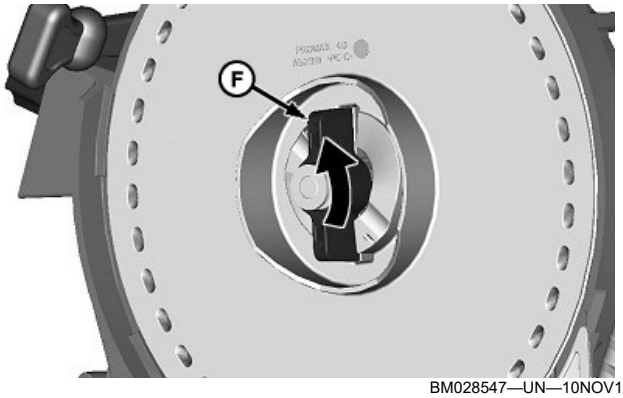
4. Remove the vacuum hose (D) from the metering unit.

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.

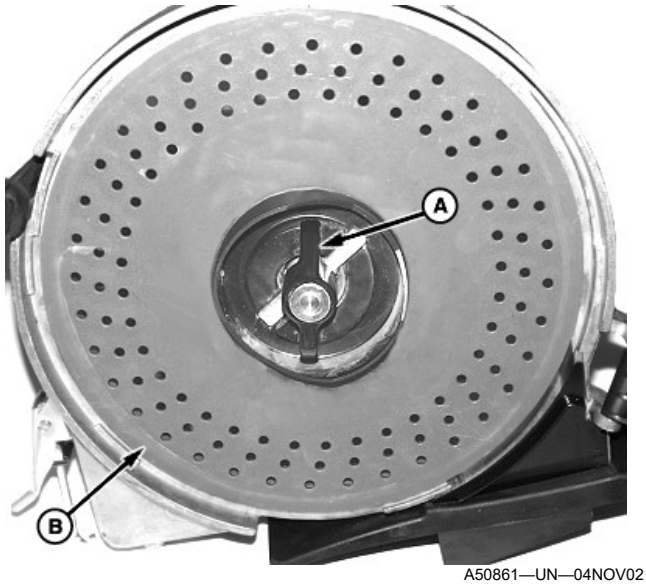
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Adjust MaxEmerge™ 5 and MaxEmerge™ 5e Meter Hub

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

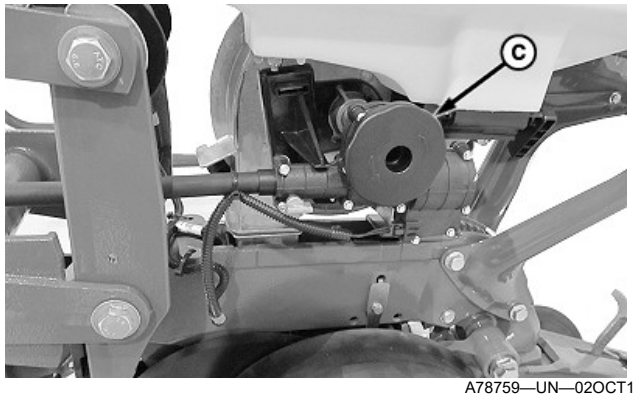
Improve the seed meter accuracy and minimize the seed damage with a properly adjusted meter hub. Check this adjustment whenever the seed disks are changed. If a gap between the seed disk and the double eliminator exists, or if the seed disk is difficult to turn, adjust the meter hub.

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.



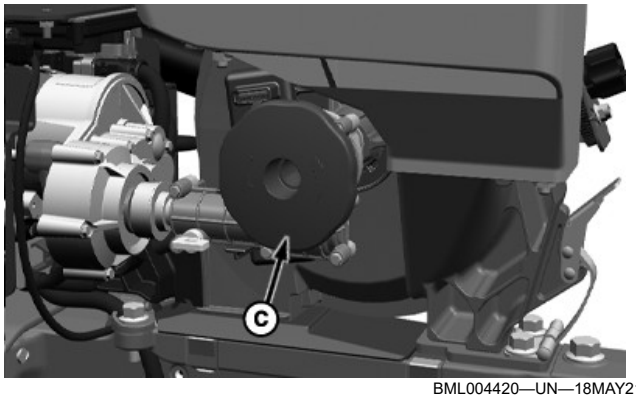
A50861—UN—04NOV02

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



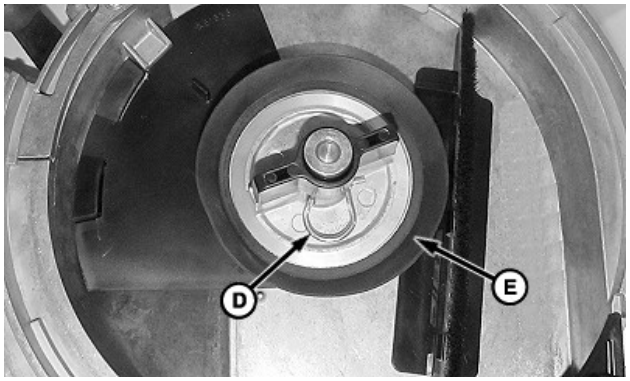
A78759—UN—02OCT13

MaxEmerge



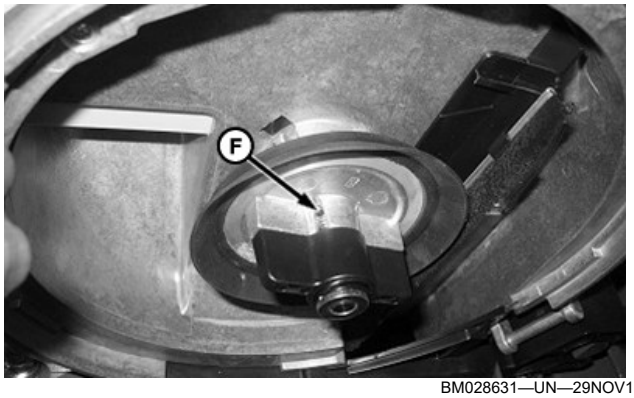
BML004420—UN—18MAY21

MaxEmerge



BM028630—UN—29NOV17

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



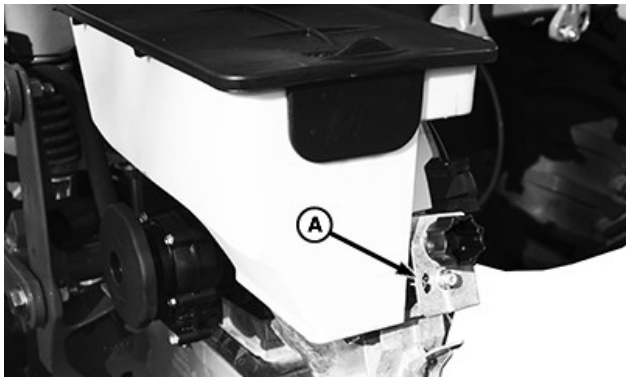
BM028631—UN—29NOV17

7. Turn the hub until the slot aligns with the hole (F) in the shaft and install the 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. If the seed disk rotates 1/4 to 1/2 revolution before stopping, the meter hub is properly adjusted.

TS95756,0000177-19-18MAY21

Double Eliminator Operation

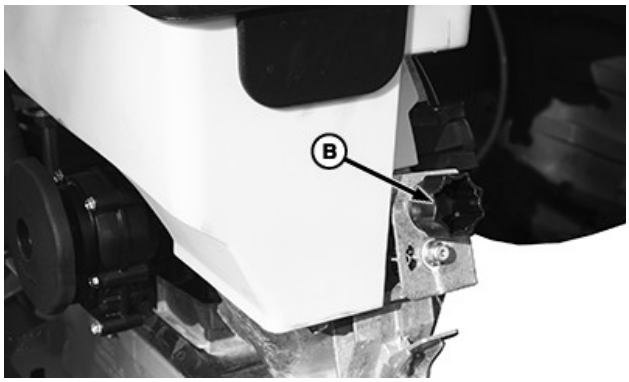
NOTE: Use a vacuum chart for the seed disk in order to set the vacuum level.



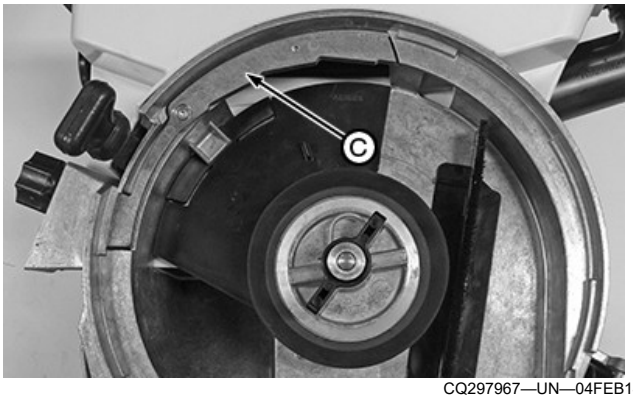
BM028640—UN—13NOV18

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

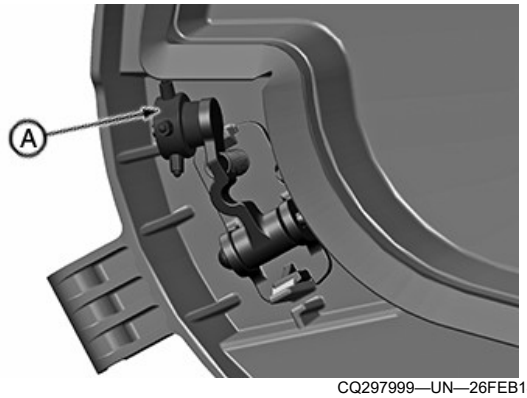
When in position number 5, the double eliminator plate covers 1/2 of the seed disk holes and provides good seed singulation for a wide variety of seed sizes and shapes.

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 hight 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 turns approximately one turn when the hub is spun rapidly by hand. (See Adjust MaxEmerge™ 5 and MaxEmerge™ 5e Meter Hub in this section.)

TS95756,0000179-19-22APR21

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.

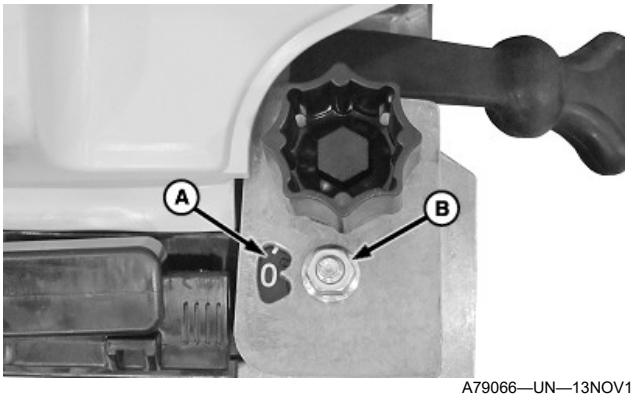
The seed knockout wheel is required when planting sorghum, monogerm sugar beet, and seed planted with flat-type seed disks. Sugar beet and sweet corn seeds can have sharp edges and are typically irregular in shape, creating a potential for seeds to become lodged in the seed cell. Some sorghum seeds contain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

ER40675,0000375-19-06MAR20

Establish the Zero Position on Double Eliminator

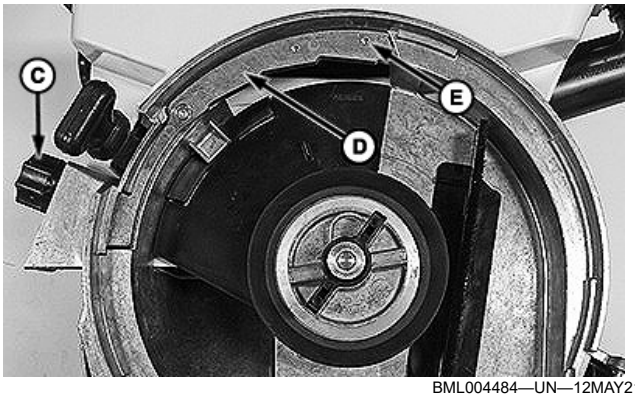
NOTE: Perform this procedure only if the adjustment of the double eliminator is no longer possible.

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



A79066—UN—13NOV13

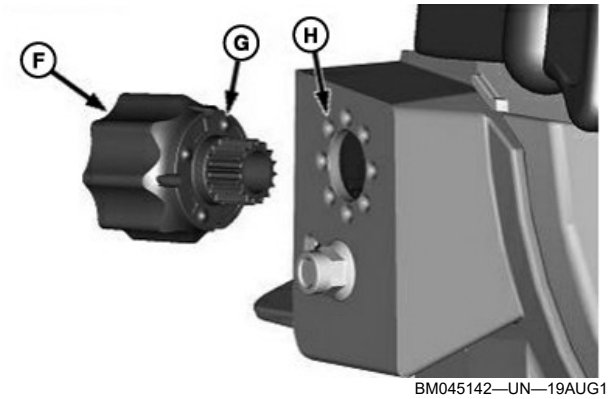
1. Remove nut (B), the screw, and dial (A).



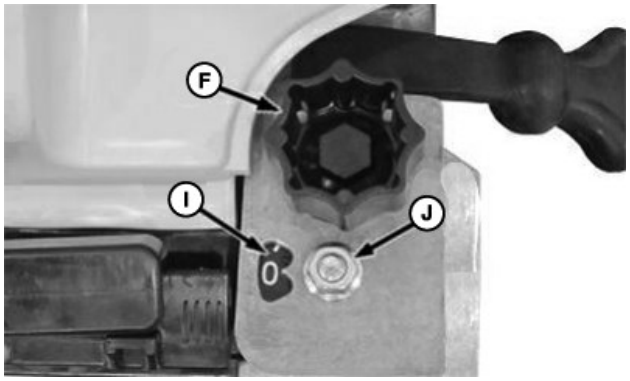
BML004484—UN—12MAY21

2. Turn the adjustment knob (C) until the alignment hole (E) in the double eliminator plate (D) is aligned with the hole in the meter housing.
3. To maintain the position of the plate, insert a number 26 (3 mm) (5/32 in) drill bit, 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 the dial (I) so that the zero is centered with the indicator.
5. Install the screw and nut (J).
6. Remove the drill bit.

TS95756,000019F-19-26MAY21

Install Knockout Wheel Assembly

NOTE: The knockout wheel is used to ensure that irregular shaped seeds are fully released from the vacuum hole. Wheel projections engage the vacuum holes to eject all seeds and foreign material from the seed cell.

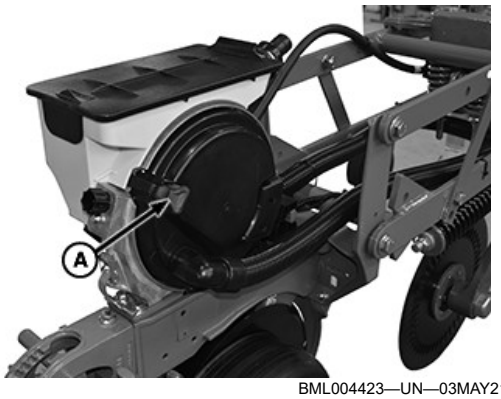


BML004421—UN—03MAY21

Knockout Wheel Types

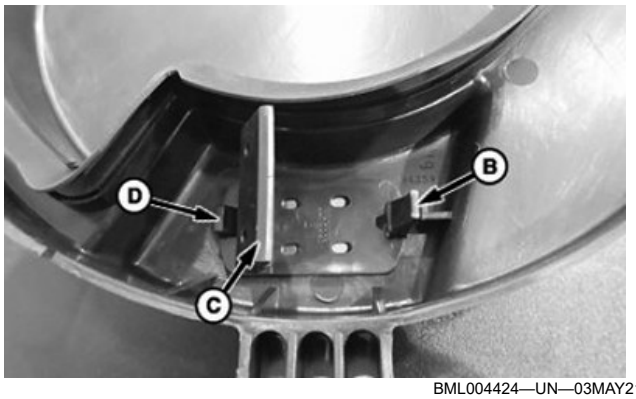
There are four different knockout wheels available for use with different seed disks and seed types, but only the first three types are shown in the image. (Refer to Seed Meter Settings in Operating the Seed Meter-MaxEmerge™ 5 and MaxEmerge™ 5e section.)

NOTE: If necessary to remove the wheel, squeeze the wheel hub. Press the alternate wheel onto the hub.



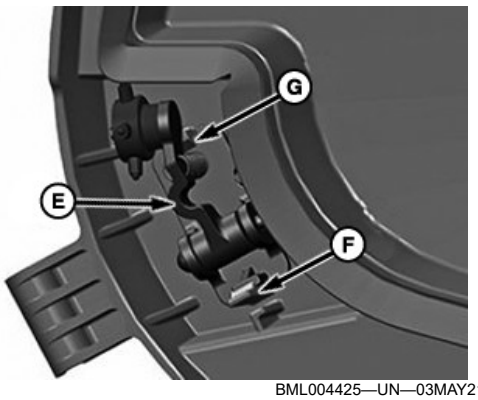
BML004423—UN—03MAY21

1. Disengage the handle (A) and open the vacuum seed meter.



BML004424—UN—03MAY21

2. To remove the wiper assembly (C), push the retaining clip (B) and pull the wiper assembly away from the fastener clip (D).



BML004425—UN—03MAY21

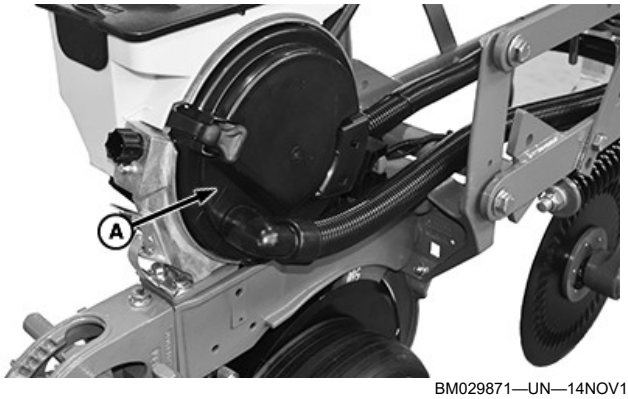
3. Install the knockout assembly (E) between the retaining clip (F) and the fastener clip (G).

NOTE: When closing the cover, check if the wheel is aligned with the row of the seed cells on the seed disk.

4. Close and lock the meter cover.

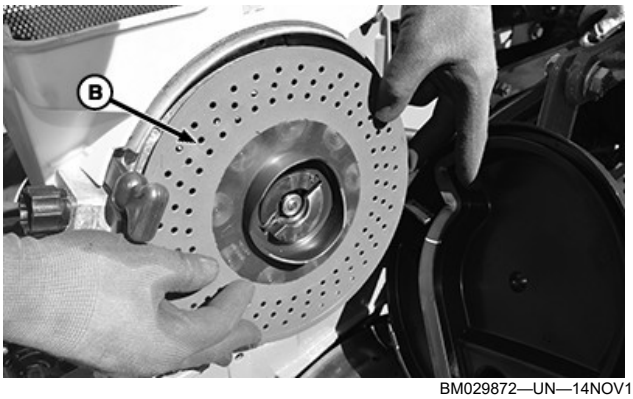
TS95756,000017C-19-31MAY21

Check Seed Disks



BM029871—UN—14NOV18

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



BM029872—UN—14NOV18

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

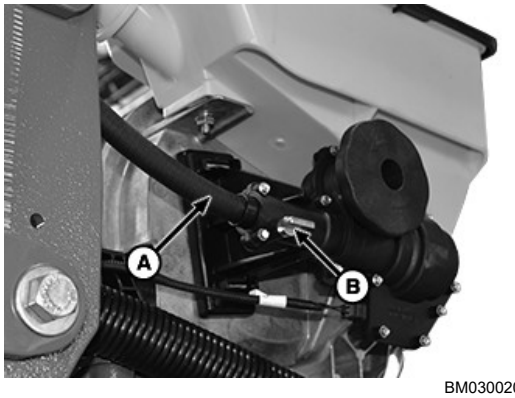
NOTE: The dosing unit must always be in perfect condition. It prevents loss of grain and system malfunction.

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 generate overload in the drive system.

TS95756,000017D-19-26MAY21

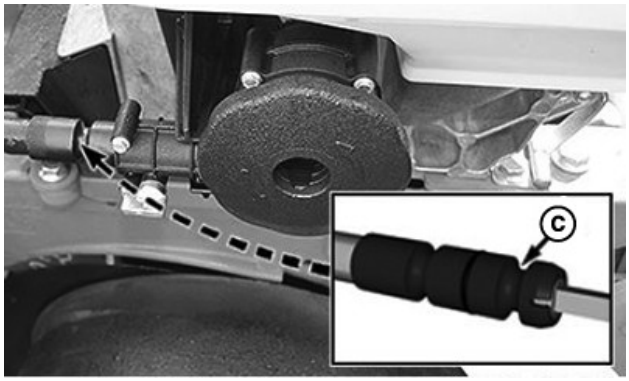
Disable Planting Lines for MaxEmerge™ 5

If necessary, it is possible disable to one or more planting lines individually.



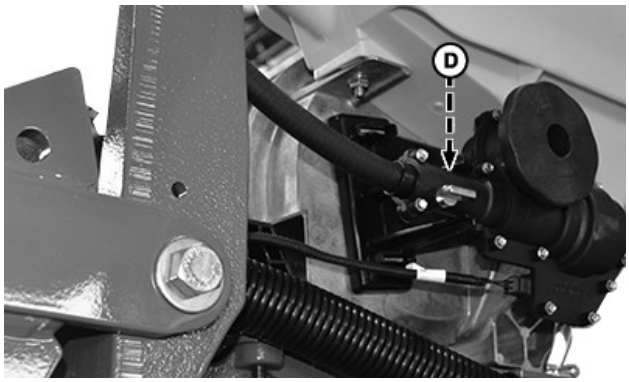
BM030020—UN—08FEB19

1. Turn the lock (B) counterclockwise to unlock the cable (A).



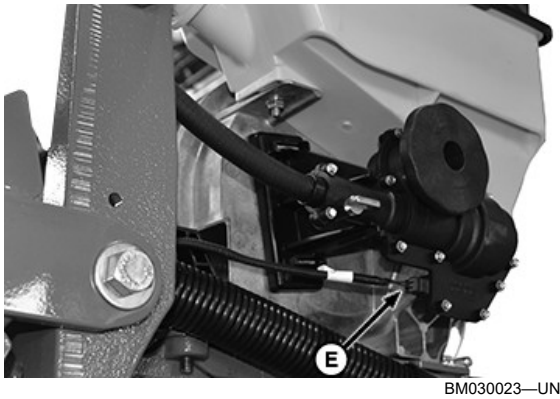
BM030021—UN—08FEB19

2. Pull the cable (A) to align the groove (C) with the lock (B).
3. Turn the lock (B) clockwise to lock the cable (A).



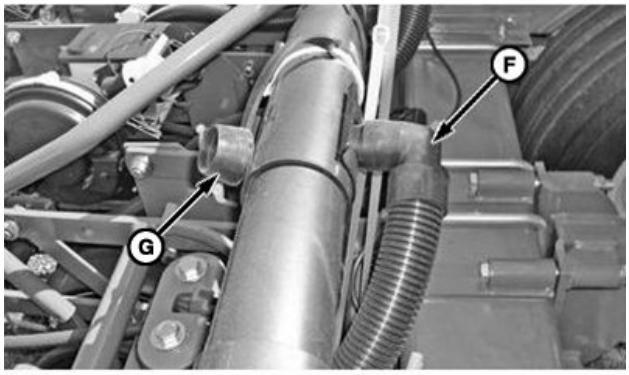
BM030022—UN—08FEB19

NOTE: This lock prevents the cable to escape from the housing (D).



BM030023—UN—08FEB19

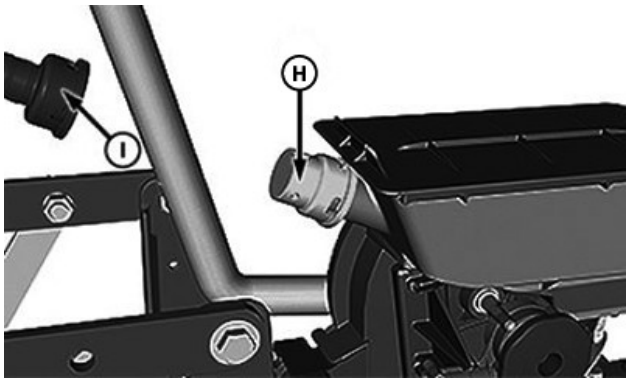
4. If equipped, disconnect the electrical harness (E) from the RowCommand™ clutch.



BM028553—UN—10NOV17

5. Remove the vacuum hoses (F) and close the vacuum output with the cap (G).

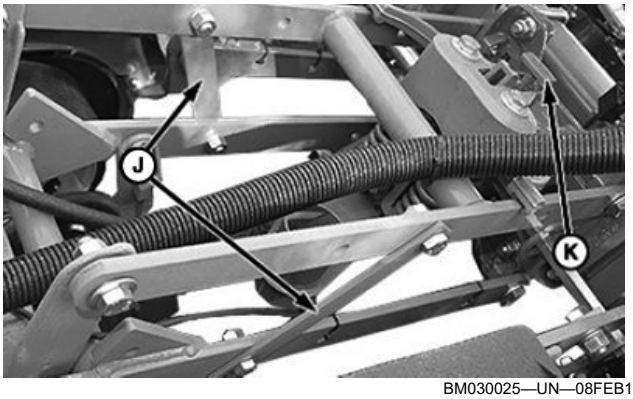
NOTE: Remove the vacuum hoses (F) from the machine or attach properly to the frame.



BM030024—UN—08FEB19

6. Disconnect the central commodity system (CCS™) hoses (I) and install the cap (H).
7. Reconnect the CCS™ hoses (I) on the cap (H).

RowCommand is a trademark of Deere & Company
CCS is a trademark of Deere & Company



BM030025—UN—08FEB19

8. Move the lever (K) for minimum pressure position.
9. Lift the line and install the locking bars (J) in the illustrated position.

NOTE: When a line is disable it must be disconnect through SeedStar™.

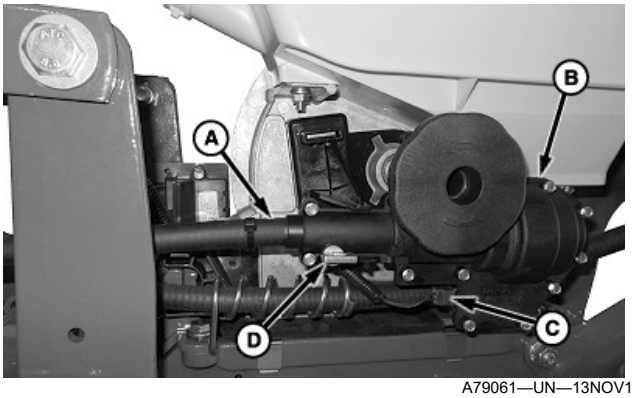
NOTE: To reactivate a planting line, make the reverse procedure.

ER40675,0001015-19-06MAR20

Check Row Vacuum

IMPORTANT: Avoid damage to the machine. Before replacing the meter cover on suspect meters, be certain that vacuum levelers are in place.

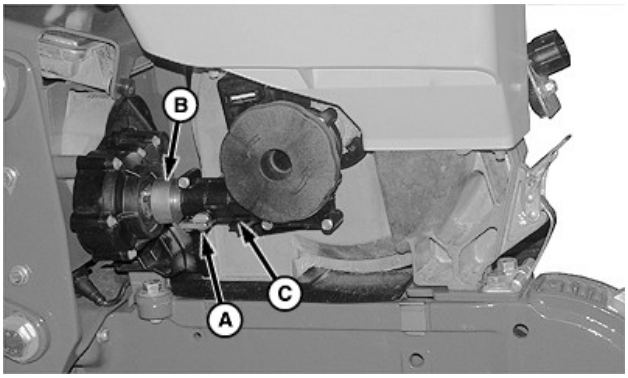
1. Identify the meters equipped with vacuum gauge hoses.
2. Remove the hopper from the meters on rows with vacuum gauge and with a meter that is suspected of being with problem.



A79061—UN—13NOV13

MaxEmerge™ 5

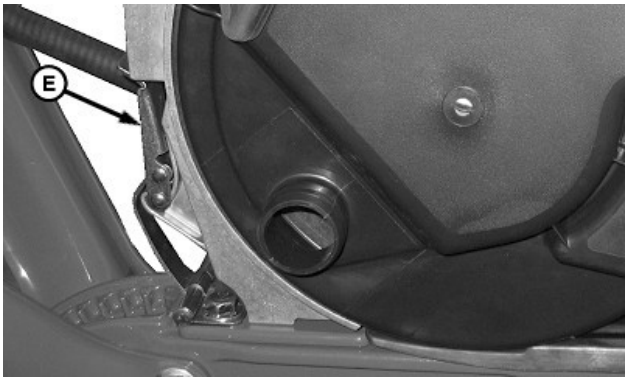
3. For machines equipped with MaxEmerge™ 5:
   a. Disconnect the connector (C) (if equipped).
   b. Rotate the lever (D) through 180°.
   c. Pull the cable (A) from the gear case (B) of the meter drive.



A90664—UN—24MAY16

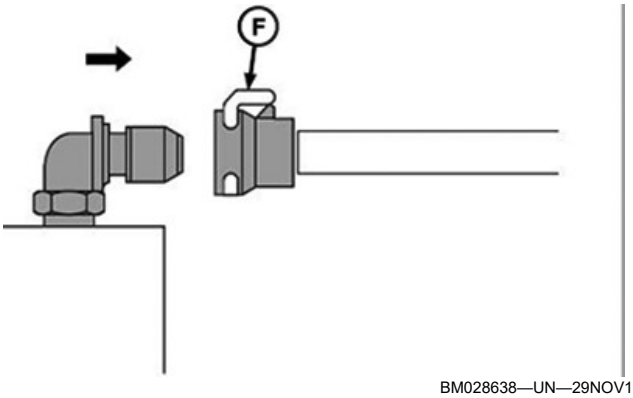
MaxEmerge™ 5e

4. For machines equipped with MaxEmerge™ 5e:
   a. Rotate the locking pin (A) 180° until the unlocked symbol is at the top.
   b. Pull the drive coupler (B) from the gearbox housing (C).



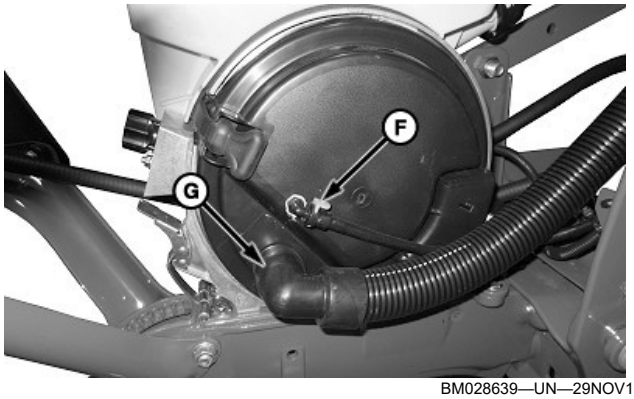
BM028637—UN—29NOV17

5. Pull down on the squeeze latch (E) to release the meter. Lift the rear of the meter and remove.



BM028638—UN—29NOV17

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MaxEmerge is a trademark of Deere & Company



BM028639—UN—29NOV17

6. Squeeze the retainer (F) and pull the vacuum gauge hose out of the connector.
7. Disconnect the vacuum hose (G).
8. Remove the cover from the meter housing.
9. Replace the cover of the meter that is suspected of having a problem and that is equipped with a vacuum gauge.
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.

TS95756,000017E-19-26MAY21

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. Consult your John Deere dealer for the most complete and up-to-date listing of available seed disks and recommendations.

The following seed disk recommendations show a seed size range where optimum performance can be expected with each seed disk. Select the disk which best handles the seed to be planted or best represents the majority of seed sizes to be planted.

If several seed sizes are planted and their seed size falls within overlapping areas of two seed disks, it is recommended that both seed disks must be changed to individual seed shape in order to optimize the performance.

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 in the field.

ER40675,0001007-19-06MAR20

Select the Correct Field Corn Seed Disk for Optimum Performance

Corn Seed Disk Selection Guide					
Seed Shape	**Seed/kg (Seed/lb)**	**Disk Name**	**Part Number**	**Number of Cells/ Diameter mm (in)**	**If the population is difficult to control:**
Non-Uniform (mixed shapes)	Mixed Sizes	ProMax 40 with Double Eliminator	A52391	40 4.50 (0.17)	If overpopulated, or with less population than needed at the starting disk, adjust the double eliminator.
Uniform Flat	Less than 3308 (1500)	ProMax 40 with Double Eliminator	A52391	40 4.50 (0.17)	If overpopulated, or with less population than needed at the starting disk, adjust the double eliminator.
Uniform Flat	3308-6175 (1500-2800)	Small Corn Disk	A43215	30 3.60 (0.14)	Adjust the vacuum first. If problems persist, switch to the overlapping disk shown in the vacuum level chart.[a]
Uniform Flat	Greater than 6175 (2800)	Sunflower and Popcorn	H136478	30 2.60 (0.10)	Adjust the vacuum first. If problems persist, switch to the small corn disk (A43215).
Uniform Round	Less than 3308 (1500)	Standard Corn Disk	A50617	30 3.60 (0.14)	Adjust the vacuum.
Uniform Round	3308-6175 (1500-2800)	Small Corn Disk	A43215	30 3.60 (0.14)	Adjust the vacuum first. If problems persist, switch to the standard corn disk (A50617).

Corn Seed Disk Selection Guide					
Seed Shape	**Seed/kg (Seed/lb)**	**Disk Name**	**Part Number**	**Number of Cells/ Diameter mm (in)**	**If the population is difficult to control:**
Uniform Round	Greater than 6175 (2800)	Sunflower and Popcorn	H136478	30 2.60 (0.10)	Adjust the vacuum first. If problems persist, switch to the small corn disk (A43215).

[a]For larger seed sizes less than 3970 seeds/kg (1800 seeds/lb), switch to Standard Corn Disk (A50617). If population control problems persist, switch to ProMax 40 Disk (A52391) with the double eliminator. For smaller seed sizes greater than 5072 seeds/kg (2300 seeds/lb), switch to sunflower and popcorn disk (H136478). If population control problems persist, switch to ProMax 40 Disk (A52391) with the double eliminator.

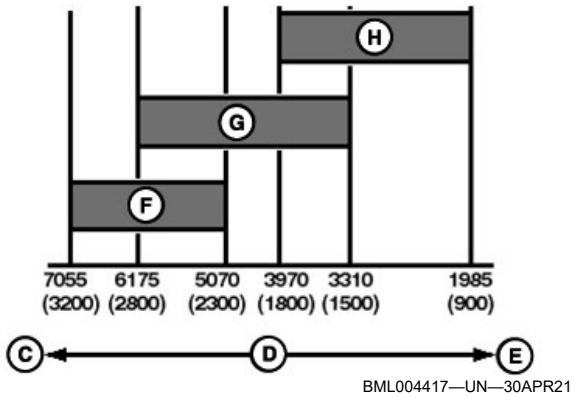
Use the **Corn Seed Disk Selection Guide** chart first to determine the recommended seed disk and then refer to the vacuum level chart for the initial vacuum setting.

Most of the corn seed can be planted near 100% of the desired population when using proper vacuum levels and the small corn or standard corn seed disks (which have seed cells).

Using cell-type disks (small and standard corn seed disks) requires careful seed selection for a proper performance.

The metering performance is directly dependent on the consistency of the seed size. Seeds that are mixed in shape and size do not perform optimally with cell-type disks. The ProMax 40 disk (A52391) with the double eliminator is required for an optimum seed singulation and for the seed release when the seeds vary in size.

NOTE: A knockout wheel is required when using John Deere flat disks.



BML004417—UN—30APR21

C—Small Seeds
D—Seed Size, Seeds/kg (seeds/lb)
E—Large Seeds
F—Sunflower and Popcorn Disk
G—Small Corn Disk
H—Standard Corn Disk

For seed sizes that overlap the small corn disk (A43215) and the standard corn disk (A50617), choose the small corn disk for initial setting. If the population is difficult to control, switch to the standard corn disk.

Difficult-to-Plant Seeds

- Difficult-to-plant seeds include varieties with mixed sizes, mixed shapes, combinations of sizes and shapes, long and slender seeds, seeds with a sharp point (germ), and others.
- A ProMax 40 disk is a flat disk used to improve seed singulation with difficult-to-plant seeds. The ProMax 40 requires higher vacuum levels than the cell-type disks, requires the installation of a double eliminator and of a knockout wheel in each meter assembly.
- ProMax 40 disks have 40 holes per revolution.

  Machines with mechanical meters: Set the seed transmission according to the rate chart Corn Using ProMax 40 Disk when ProMax 40 disk is used to plant field corn.

  Machines with a variable rate drive (VRD): Select ProMax 40 seed disk on the SeedStar™ monitor. (See Setup Seed Rates section in SeedStar™ Operator's Manual).

IMPORTANT: Avoid damage to the machine. When using ProMax 40 disks, if the cell type rate charts are used to set the transmission or the incorrect seed disk is programmed for VRD in the monitor, overpopulation occurs. The cell-type disks have 30 cells.

- Quality graded seed also requires a proper seed disk selection for an optimal performance.

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.

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IMPORTANT: Avoid damage to the machine. Properly set the mechanical transmission or program the VRD monitor when the ProMax 40 disks are used to plant field corn. When using ProMax 40 disks, if the cell-type rate charts are used to set the transmission or the incorrect seed disk is programmed for VRD in the monitor, overpopulation occurs. Cell-type disks have 30 cells.

- 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.

TS95756,000017F-19-26MAY21

Seed Disk Recommendations for Crops Other Than Field Corn

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

NOTE: On planters equipped with CCS™, see the CCS™ section for nozzle and elbow recommendations.

Sweet Corn

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
ProMax 40	A52391	3900—8600	40	4.50 (0.17)
Small Sweet Corn	A52390	3500—7700	40	3.75 (0.14)

Confection Sunflower

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
ProMax 40 Flat Type with Double Elimina-tor	A52391	5000—7200 (2250—3250)	40	4.50 (0.17)
Small Sweet Corn Flat Type with Double Elimina-tor	A52390	7200—11 600 (3250—5250)	40	3.75 (0.14)

Oil Sunflower

Disk Name	Part Number	Seed Sizes	Number of Cells	Hole Diameter mm (in)
Sunflower/ Popcorn	H136478	4 (Small) 3 (Medium) 2 (Large)	30	2.60 (0.10)
Oil Sunflower	A102717	4 (Small) 3 (Medium) 2 (Large)	40	2.50 (0.09)
For seed sizes 1 (extra large) and 5 (extra small) of oil sunflower, see the recommendations for confection sunflowers. The part number H136478 is recommended for seed sizes 4 (small), 3 (medium), and 2 (large) of oil sunflower. This disk is not recommended for seed sizes 1 (extra large) and 5 (extra small) of oil sunflower or of confection sunflower seeds.				

Drilled Cotton

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Acid Delinted Cotton	A56251	8800—13 200 (4000—6000)	64	2.50 (0.09)
Low Rate Acid Delinted Cotton	A70163	8800—13 200 (4000—6000)	32	2.50 (0.09)
For small seeds that result in doubles on the Acid-Delinted Cotton Disk, using a small edible bean disk (part number A52903) with the double eliminator is recommended.				

4-Cell Hill Drop Cotton

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
4-Cell Hill Drop	A65622	8800—13 200 (4000—6000)	48	2.50 (0.09)
For small seeds that result in dropping more than four seeds, use of the 2-cell hill drop cotton disk is recommended.				

2-Cell Hill Drop Cotton

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
2-Cell Hill Drop	A74961	8800—13 200 (4000—6000)	64	2.50 (0.09)

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Elimina-tor				

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Cotton Using Edible Bean Flat Disk—A52903—Small

Cotton Seed	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Small	3520—7260 (1600—3300)	50	3.75 (0.14)
Small cotton seed can also be planted using this disk when the cotton disks result in doubles (double eliminator is recommended).			

Soybeans

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Soybean	A42586	3500—7700	108	4.40 (0.17)
Soybean	A69648	3747—8818 (1700—3900)	36	4.37 (0.17)
High Population Soybean	A105848	3747—8818 (1700—3900)	64	4.50 (0.18)
Cotton	A56251	3500—7700	64	2.50 (0.09)
ProMax 64 x 4.5	A105848 (flat-type)	3500—7700	64	4.50 (0.18)
For smaller seed sizes that result in doubles, a cotton seed disk (part number A56251) can provide an improved performance.				

Low-Rate Sorghum

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Low-Rate Sorghum	A43066	22 000—35 300 (10 000—16 000)	45	1.50 (0.06)
For smaller seed sizes, a medium sugar beet disk (part number H136445) or a small sugar beet disk (part number A51712) can provide an improved performance.				

High-Rate Sorghum

Disk Name	Part Number	Seed/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
High-Rate Sorghum	A52802	22 000—35 300 (10 000—16 000)	90	1.50 (0.06)

Monogerm Sugar Beets

Disk Name	Part Number	Seed Size mm (in)	Number of Cells	Hole Diameter mm (in)
Small Sugar Beet	A51712	2.6—3.2 (0.10—0.13)	45	1.50 (0.06)
Small and Medium Sugar Beet	H136445	3.0—3.6 (0.12—0.14)	45	1.50 (0.06)
Large Sugar Beet	A51713	3.4—4.0 (0.13—0.16)	45	1.60 (0.06)

Pelleted Sugar Beets

Disk Name	Part Number	Seed Size mm (in)	Number of Cells	Hole Diameter mm (in)
Small and Medium Sugar Beet	H136445	3.2—4.0 (0.13—0.16)	45	1.50 (0.06)
Large Sugar Beet	A51713	3.6—4.6 (0.14—0.18)	45	1.50 (0.06)
Sorghum	A43066	3.6—4.6 (0.14—0.18)	45	1.50 (0.06)

Small Edible Bean—Cell Disk H136468

Seed	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Black Turtle	4180—5720 (1900—2600)	108	3.50 (0.13)
Navy	3960—5500 (1800—2500)	108	3.50 (0.13)
Pink	3740—4290 (1700—1950)	108	3.50 (0.13)
Small White	5280—6600 (2400—3000)	108	3.50 (0.13)
Smooth Pea	6160—7040 (2800—3200)	108	3.50 (0.13)

Medium Edible Bean—Cell Disk A51696

Seed	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Black-Eyed Pea	3520—4400 (1600—2000)	56	4.00 (0.15)
Green Beans (Garden)	2200—4840 (1000—2200)	56	4.00 (0.15)
Kidney (Small)	2530—3080 (1150—1400)	56	4.00 (0.15)
Pinto	1760—3080 (800—1400)	56	4.00 (0.15)
Red Mexican (Small)	2640—3300 (1200—1500)	56	4.00 (0.15)
Wrinkle Pea	3960—5060 (1800—2300)	56	4.00 (0.15)

Large Edible Bean—Cell Disk H136092

Seed	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Cranberry Bean	1760—2640 (800—1200)	50	4.80 (0.18)
Kidney (Medium)	2090—2530 (950—1150)	50	4.80 (0.18)
Great Northern	1980—2860 (900—1300)	50	4.80 (0.18)
Garbanzo	1650—1980 (750—900)	50	4.80 (0.18)
Peanuts (Runner)	1430—1760 (650—800)	50	4.80 (0.18)
Peanuts (Spanish)	2200—2750 (1000—1250)	50	4.80 (0.18)

Edible Bean—Flat Disk A52903 Small

Edible Bean (Seed-Small)	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Green Garden, Small	3520—5280 (1600—2400)	50	3.75 (0.14)
Black Turtle	4180—5720 (1900—2600)	50	3.75 (0.14)
Navy	3960—5720 (1800—2600)	50	3.75 (0.14)
Small White	5280—7260 (2400—3300)	50	3.75 (0.14)
Edible Peas	**Seeds/kg (Seeds/lb)**	**Number of Cells**	**Hole Diameter mm (in)**
Wrinkle	3740—5060 (1700—2300)	50	3.75 (0.14)

Edible Bean—Flat Disk A52904 Medium

Edible Bean (Seed-Medium)	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Green Garden, Medium	2640—3520 (1200—1600)	50	4.50 (0.17)
Small Red	2640—3300 (1200—1500)	50	4.50 (0.17)
Pinto	All Sizes	50	4.50 (0.17)
Medium Kidney	2530—3080 (1150—1400)	50	4.50 (0.17)
Lima	2640—3520 (1200—1600)	50	4.50 (0.17)
Corn Seed	3300—7040 (1500—3200)	50	4.50 (0.17)
Pink Vive	3740—4180 (1700—1900)	50	4.50 (0.17)
Edible Peas	**Seeds/kg (Seeds/lb)**	**Number of Cells**	**Hole Diameter mm (in)**
Black-Eyed	3520—4400 (1600—2000)	50	4.50 (0.17)
Smooth	6160—7040 (2800—3200)	50	4.50 (0.17)

Edible Bean—Flat Disk A52878 Large

Edible Bean (Seed-Large)	Seeds/kg (Seed/lb)	Number of Cells	Hole Diameter mm (in)
Green Garden, Large	1540—2640 (700—1200)	50	5.0 (0.19)
Cranberry	1760—2640 (800—1200)	50	5.0 (0.19)
Large Kidney	1870—2530 (850—1150)	50	5.0 (0.19)
Great Northern	1980—2860 (900—1300)	50	5.0 (0.19)
Garbanzo	1650—1980 (750—900)	50	5.0 (0.19)

Virginia Peanut

Disk Name	Part Number (type)	Seeds/kg (seeds/lb)	Number of Holes	Hole Diameter mm (in)
Virginia Peanut	H138722 (cell-type)	1100—1760 (500—800)	46	5.3 (0.21)

Blank Seed Disk

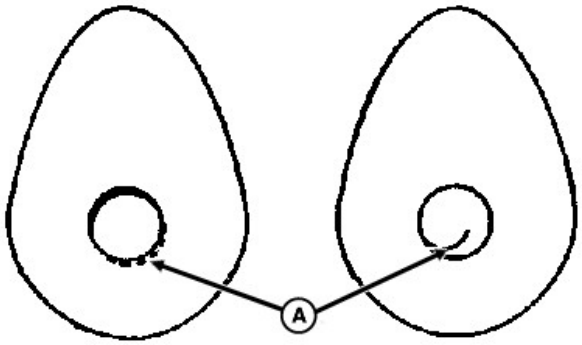
Part No. A52554

The blank seed disk allows a custom drilling of a specific hole size for special crops. See your John Deere dealer for details.

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

ER40675,000100A-19-06MAR20

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™ monitor vacuum sensors, refer to the SeedStar™ monitor Operator's Manual.



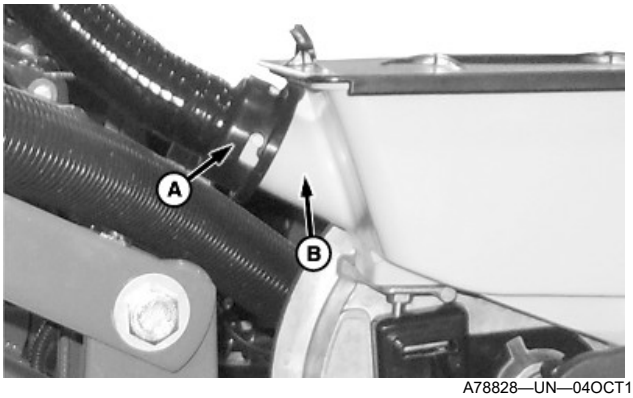
BM029824—UN—31OCT18

1. Shut off the vacuum system.
2. With the vacuum gauge in a vertical position, disconnect the vacuum gauge hose to equalize the gauge with the atmospheric pressure.
3. Use the 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.)

ER40675,000101D-19-09MAR20

Remove and Install the Seed Meter

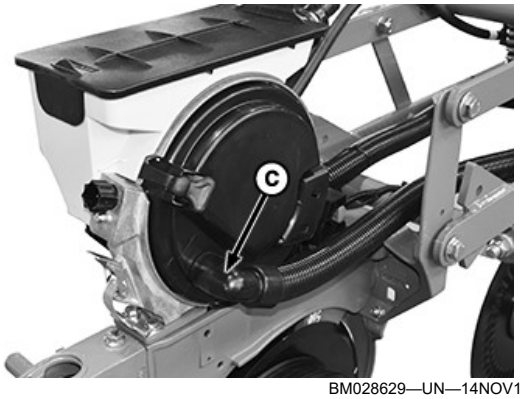
Remove the Seed Meter



A78828—UN—04OCT13

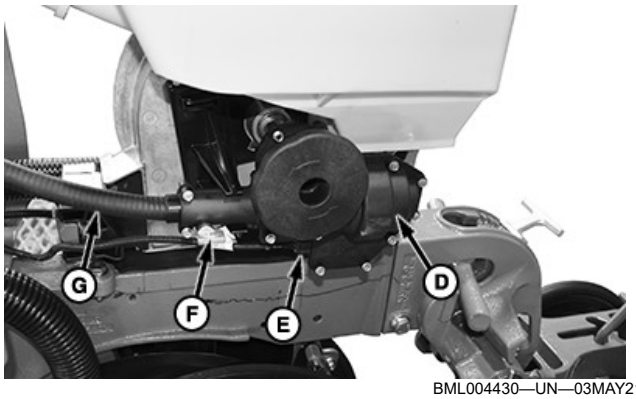
1. Rotate the seed delivery hose (A) counterclockwise until it unsnaps from the hopper filler neck (B). Pull off the hose.

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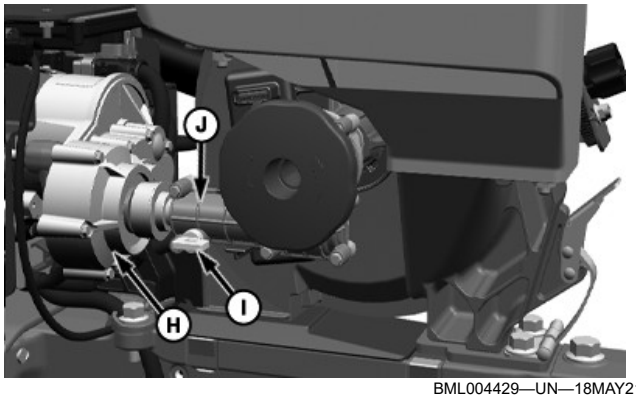
2. Remove the vacuum hose (C).
3. If the row unit is monitored for vacuum pressure, pull the clip sideways to unlock the vacuum sense hose and remove it.



BML004430—UN—03MAY21

MaxEmerge™ 5

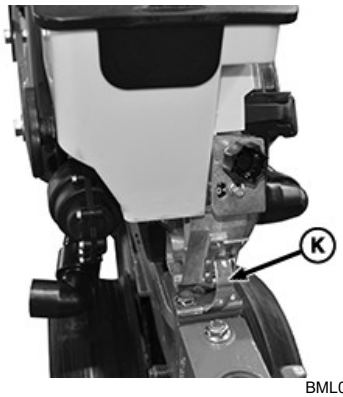
4. If the machine is equipped with MaxEmerge™ 5:
   a. Disconnect the electrical connector (E) from the RowCommand™ clutch (if equipped).
   b. Rotate the locking pin (F) 180° until the unlocked symbol is at the top.
   c. Pull the Pro-Shaft™ drive cable (G) from the RowCommand™ clutch (D) while raising and lowering the rear of the meter.



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MaxEmerge™ 5e

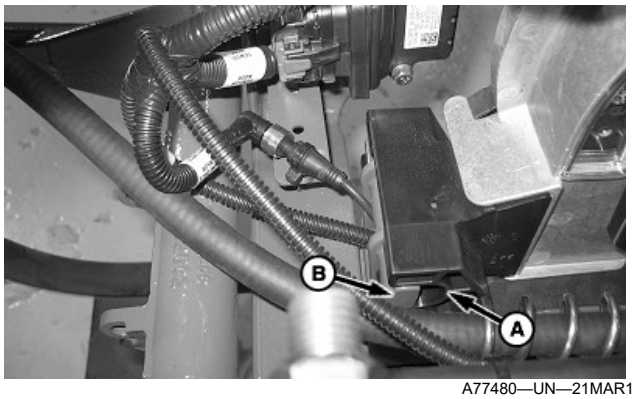
5. For machines equipped with MaxEmerge™ 5e:
   a. Rotate the locking pin (I) 180° until the unlocked symbol is at the top.
   b. Pull the drive coupler (J) from the gearbox housing (H).



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6. Push down on the clip (K) to unlock the meter assembly from the row unit.

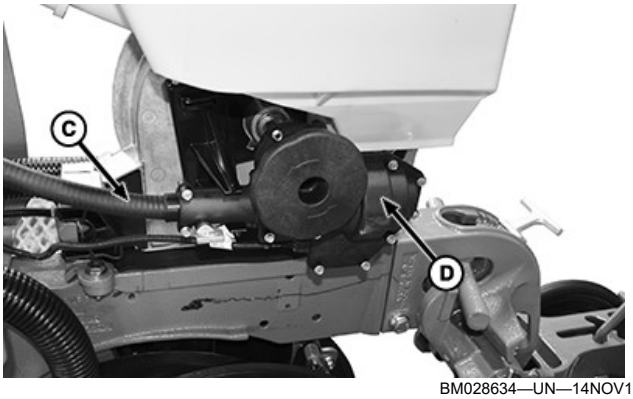
Install the Seed Meter



A77480—UN—21MAR13

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

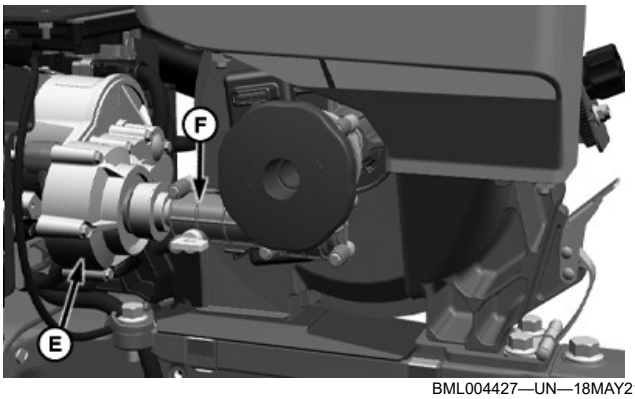
MaxEmerge is a trademark of Deere & Company
RowCommand is a trademark of Deere & Company
Pro-Shaft is a trademark of Deere & Company



BM028634—UN—14NOV18

MaxEmerge™ 5

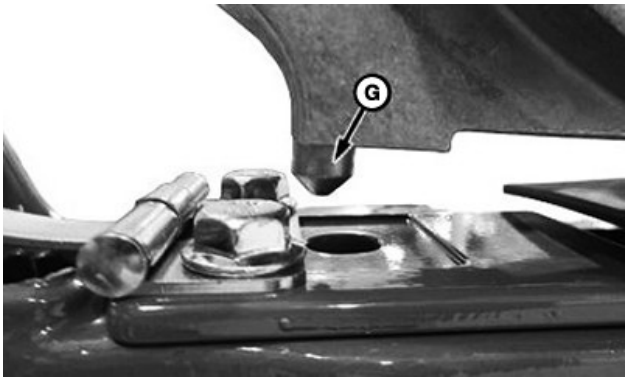
2. If equipped with MaxEmerge™ 5, push the Pro-Shaft™ drive cable (C) into the RowCommand™ clutch (D) while rotating the meter down.



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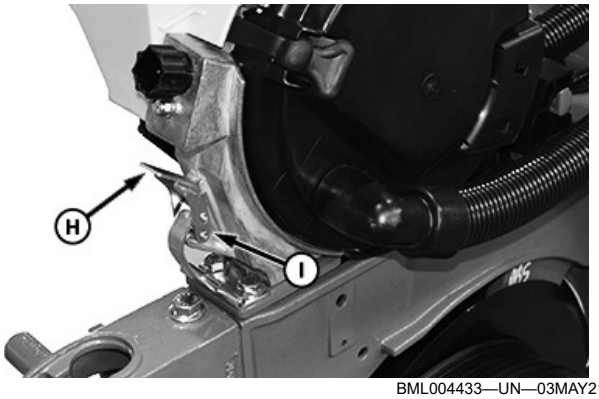
MaxEmerge™ 5e

3. If equipped with MaxEmerge™ 5e, connect the drive coupler (F) to the gearbox housing (E).



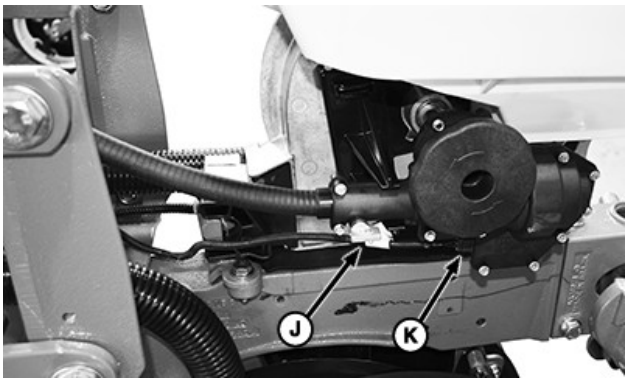
BML004432—UN—03MAY21

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



BML004433—UN—03MAY21

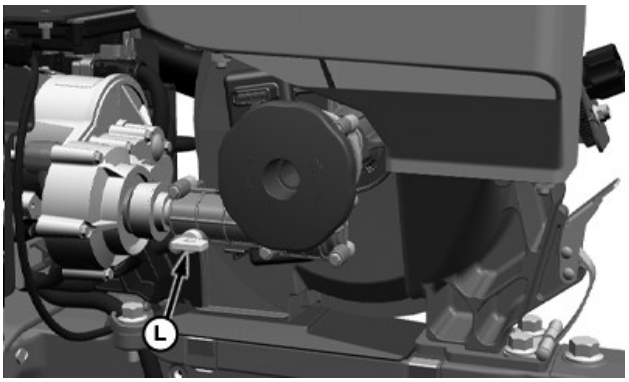
5. Align the latch (H) on the meter hook (I) and push up until the latch snaps into position.



BML004434—UN—03MAY21

MaxEmerge™ 5

6. If equipped with MaxEmerge™ 5:
   a. Rotate the locking pin (J) 180° until the locked symbol is at the top.
   b. Connect the electrical connector (K) to the RowCommand™ clutch (if equipped).



BML004435—UN—18MAY21

MaxEmerge™ 5e

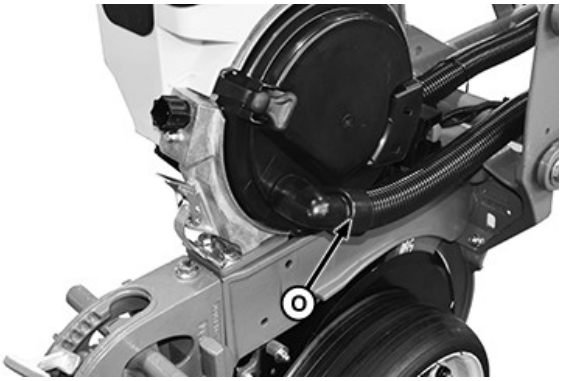
7. For machines equipped with MaxEmerge™ 5e, rotate the locking pin (L) 180° until the locked symbol is at the top.

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Pro-Shaft is a trademark of Deere & Company
RowCommand is a trademark of Deere & Company



BML004428—UN—03MAY21

8. Push the seed delivery hose (M) onto the hopper filler neck (N) and rotate it clockwise until it snaps into place.



BML004436—UN—03MAY21

9. Install the vacuum hose (O).



BML004437—UN—03MAY21

10. If the row unit has a vacuum pressure sensor, install it and attach it to the clip (P).

NOTE: The picture shown is a MaxEmerge™ 5, but the connection for the MaxEmerge™ 5e is at the same position.

TS95756,0000182-19-03MAY21

Inspect the Meter Units

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



A51186—UN—19NOV02

Vacuum Meter

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.

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Set Vacuum Level

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

NOTE: Vacuum and CCS for DB40, DB50, DB74 type B, and DB90 can be adjusted only on tractor SCVs. For DB40, DB50, and DB74 Type A it can also be adjusted on flow control valve.

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

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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 mechanical vacuum gauge mounted on the planter or on a monitor display mounted in the tractor cab. See SeedStar Operator's Manual for vacuum level display on monitor.

Sugar beet disks require low vacuum levels. For more accurate adjustments, order AA37175 zero to 5 inch vacuum gauge from your John Deere dealer.

Flat-type seed disks can require vacuum levels greater than 15 inches of water. For flat seed disks, order AA38407 zero to 30 inch vacuum gauge from your John Deere dealer.

Vacuum Level Chart	
Crop	**Vacuum Level**
Sugar Beets	See Chart
Corn	See Chart
Sweet Corn	See Chart
Popcorn	See Chart
Small, Medium, and Large Edible Beans—Cell-Type Seed Disk	8 in of Water[a]
Small, Medium, and Large Edible Beans—Flat-Type Seed Disk	See Chart
Cotton	8 in of Water
Cotton Hildrop	8 in of Water
Cotton Using Flat Edible Bean Disk	See Chart
Peanuts (Runner, Spanish, and Virginia)	See Chart
Sorghum	8 in of Water
High Rate Sorghum	8 in of Water
Oil Sunflower	See Chart
Confection Sunflower	See Chart
Soybeans	8 in of Water
High Population Soybeans	See Chart
Soybeans Using Cotton Disk	5—7 in of Water
Acid-Delinted Cotton	8 in of Water

[a] *Small edible beans—For seeds that have 6160 seeds/kg (2800 seeds/lb) or more, set vacuum level at 6 in. Medium edible beans—For garden beans that have 3960 seeds/kg (1800 seeds/lb) or more, set vacuum level at 6 in.*

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. Press Rotate Seed Meters button twice on the variable rate drive (VRD) monitor or plant approximately 5 m (15 ft) to cover seed disks with seed. Empty seed disks have less restriction and affect the vacuum reading.

IMPORTANT: The hydraulic connections determine whether the tractor flow control valve or planter flow control valve is used to control vacuum level. (See Attaching and Detaching section.)

4. Adjust the flow control valve on the planter or the tractor SCV flow until the vacuum level is at the initial level recommended in table for the target planting speed.
5. Perform field checks to verify that the population is accurate. Perform meter and vacuum adjustments as needed.

h3ymaet,1655907108990-19-15DEC22

Vacuum Level for Corn Using H136478, A43215, A50617, or A52391 Seed Disks

Use information from the seed supplier to calculate seeds per kilogram.

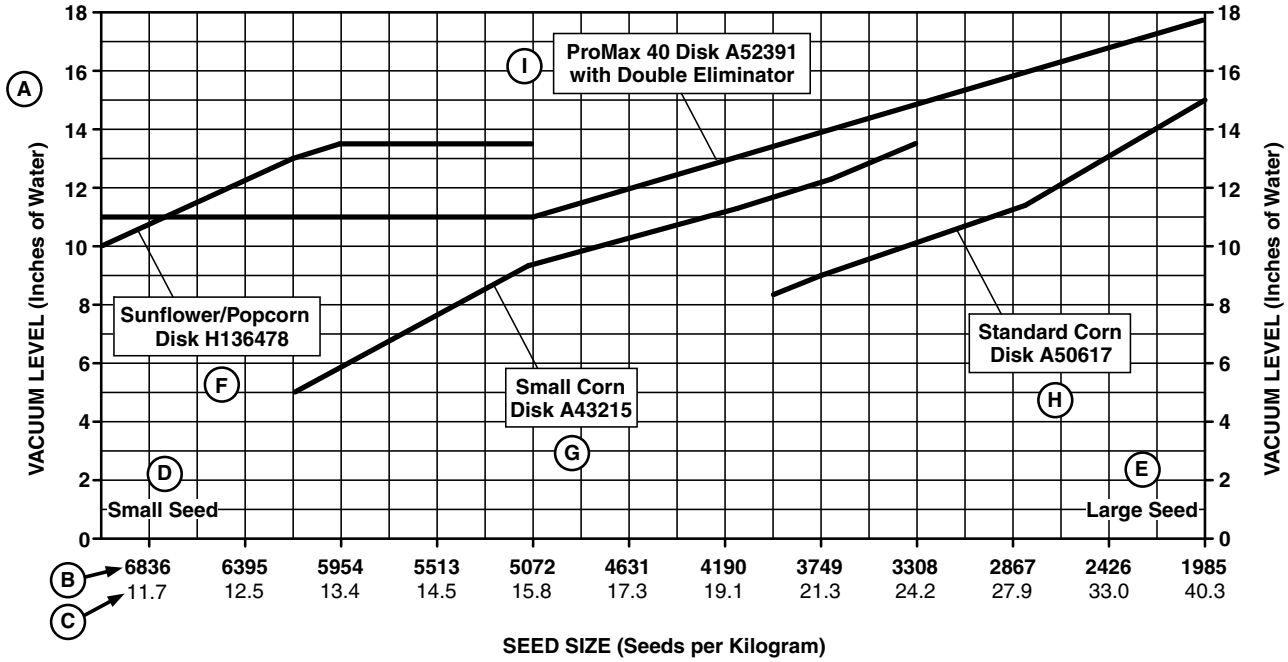
IMPORTANT: The proper vacuum level must be calculated for each seed variety. Calculate seeds per kilogram by dividing the number of seeds in bag by the weight of bag.

Example: If there are 4156 seeds/kg, the chart indicates a vacuum level of 11 inches of water with the small corn disk.

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

Sticky seed treatments, rough ground conditions, and high ground speeds require higher vacuum levels.

Select the small corn disk initially when seed sizes overlap the small corn disk (A43215) and the standard corn disk (A50617) levels in chart. If population is difficult to control, switch to the standard corn disk.



A60562—UN—07AUG07

A—Vacuum Level (inches of water)
B—Seeds Per Kilogram
C—Kilograms in Seed Bag (80 000 seeds)
D—Small Seed
E—Large Seed
F—Sunflower/Popcorn Disk
G—Small Corn Disk
H—Standard Corn Disk
I—ProMax 40 Disk

ER40675,0000347-19-09MAR20

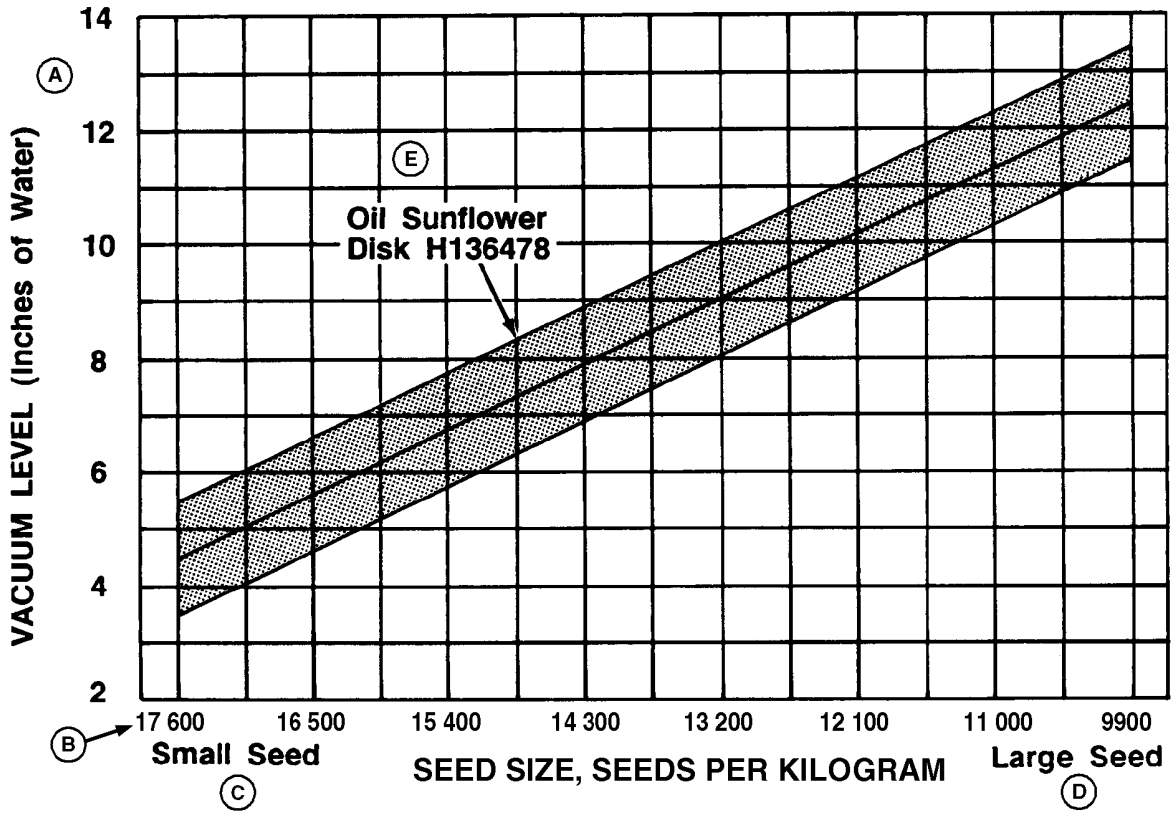
Vacuum Level for Oil Sunflower

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

IMPORTANT: The proper vacuum level must be calculated for each seed variety. Calculate seeds per kilogram by dividing the number of seeds in bag by the weight of bag.

Example: If there are 12 100 seeds/kg, the chart indicates a vacuum level of 10 inches of water at the pressure gauge with the oil sunflower disk.

Use information from the seed supplier to calculate seeds per kilogram.



A60564—UN—07AUG07

A—Vacuum Level (inches of water)
B—Seeds Per Kilogram
C—Small Seed
D—Large Seed
E—Oil Sunflower Disk

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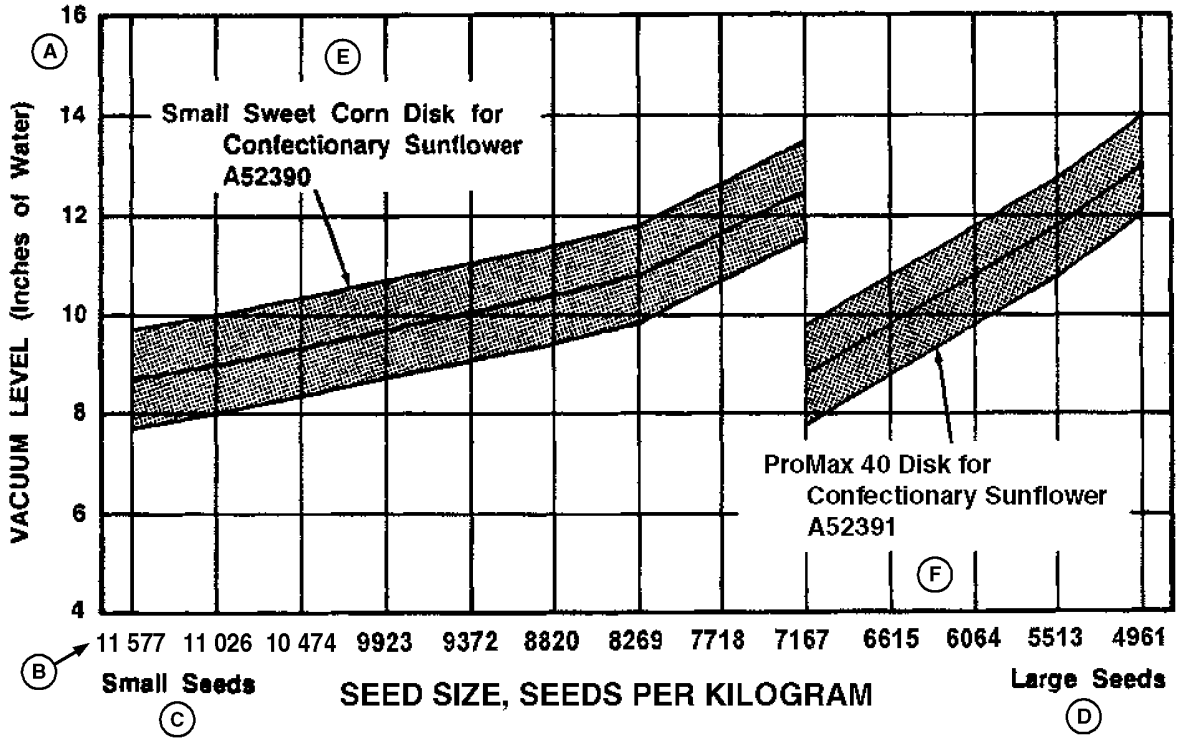
Vacuum Level for Confection Sunflower

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

Use information from the seed supplier to calculate seeds per kilogram.

IMPORTANT: The proper vacuum level must be calculated for each seed variety. Calculate seeds per kilogram by dividing the number of seeds in bag by the weight of bag.

Example: If there are 9350 seeds/kg, the chart indicates a vacuum level of 10 inches of water at the pressure gauge with the small sweet corn disk.



A60566—UN—07AUG07

A—Vacuum Level (inches of water)
B—Seeds Per Kilogram
C—Small Seeds
D—Large Seeds
E—Small Sweet Corn Disk
F—ProMax 40 Disk

ER40675,0000349-19-09MAR20

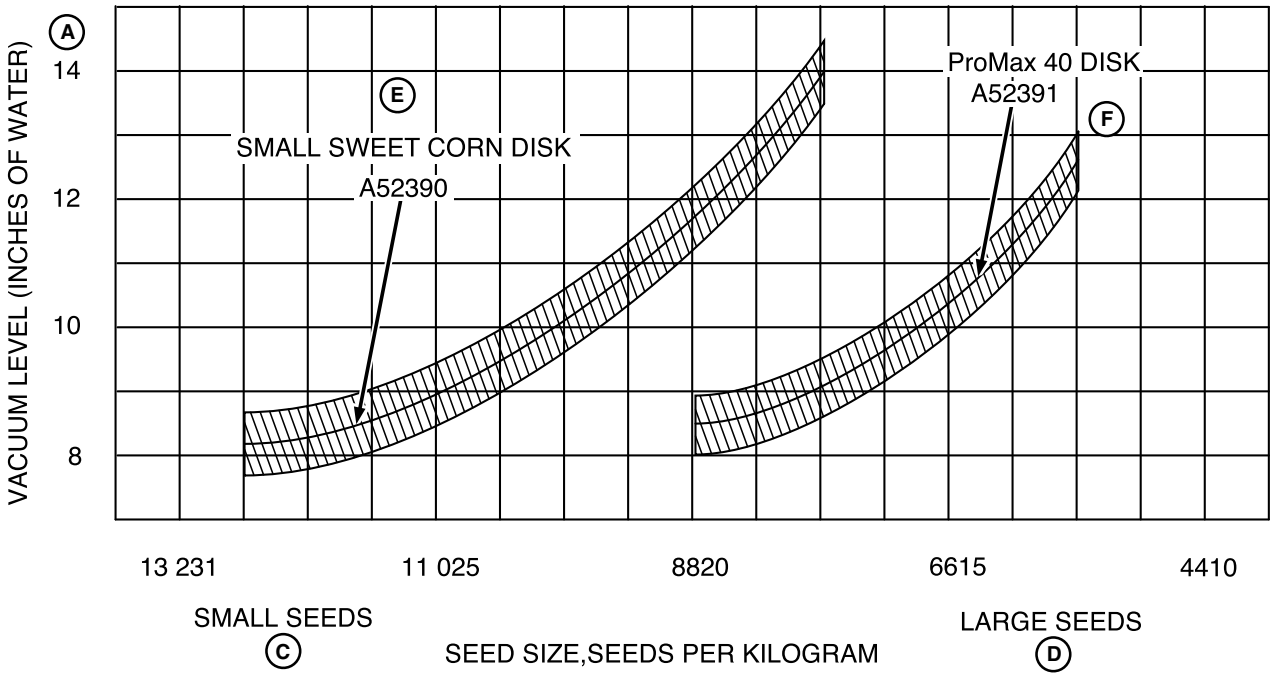
Vacuum Level for Sweet Corn

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

IMPORTANT: The proper vacuum level must be calculated for each seed variety. Calculate seeds per kilogram by dividing the number of seeds in bag by the weight of bag.

Example: If there are 9350 seeds/kg, the chart indicates a vacuum level of 11 inches of water at the pressure gauge with the small sweet corn disk.

Use information from the seed supplier to calculate seeds per kilogram.



A60568—UN—19JUL10

A—Vacuum Level (inches of water)
B—Seeds Per Kilogram
C—Small Seeds
D—Large Seeds
E—Small Sweet Corn Disk
F—ProMax 40 Disk

ER40675,000034A-19-09MAR20

Vacuum Level Seed Chart—Flat Edible Bean Disk

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

NOTE: To maintain vacuum levels when using flat edible-bean disk, do not exceed 12 row units per vacuum fan.

Due to differences in seed sizes and shapes within a seed variety, actual populations vary at the same vacuum level.

Order the flat edible bean vacuum gauge (AA38407) through your John Deere dealer.

Crop Types	Edible Bean Flat-Type Disks			Vacuum	Double Eliminator	Seed Size
	Small A52903	Medium A52904	Large A52878	Inches of Water	Percentage of Hole Covered	Recommenda-tions
Small Edible Beans						
Small Green Garden	X			16—18	0—50	3528—5292 Seeds/kg (1600—2400 Seeds/lb)
Black Turtle	X			16—18	0—50	4190—5733 Seeds/kg (1900—2600 Seeds/lb)
Navy	X			16—18	0—50	3969—5733 Seeds/kg (1800—2600 Seeds/lb)
Small Whites	X			12—14	0—50	5292—7277 Seeds/kg (2400—3300 Seeds/lb)
Pink Vive		X		18—20	0—50	3749—4190

						Seeds/kg (1700—1900 Seeds/lb)
Medium Edible Beans						
Medium Green Garden		X		18—20	0—50	2649—3528 Seeds/kg (1200—1600 Seeds/lb)
Small Red		X		18—20	0—50	2649—3308 Seeds/kg (1200—1500 Seeds/lb)
Pinto		X		20—22	0—50	All Sizes
Medium Kidney		X		14—16	0—50	2536—3087 Seeds/kg (1150—1400 Seeds/lb)
Lima		X		18—20	0—50	2649—3528 Seeds/kg (1200—1600 Seeds/lb)
Large Edible Beans						
Large Green Garden			X	20—22	0—50	1544—2649 Seeds/kg (700—1200 Seeds/lb)
Cranberry			X	20—22	0—50	1764—2649 Seeds/kg (800—1200 Seeds/lb)
Large Kidney			X	18—20	0—50	1874—2536 Seeds/kg (850—1150 Seeds/lb)
Great Northern			X	18—20	0—50	1985—2867 Seeds/kg (900—1300 Seeds/lb)
Garbanzo			X	16—18	0—50	1654—1985 Seeds/kg (750—900 Seeds/lb)
Edible Peas						
Black-Eye Pea		X		16—18	0—50	3528—4410 Seeds/kg (1600—2000 Seeds/lb)
Smooth		X		14—16	0—50	6174—7056 Seeds/kg (2800—3200 Seeds/lb)
Wrinkle	X			12—14	0—50	3749—5072 Seeds/kg (1700—2300 Seeds/lb)
Small Cotton	X			12—18	0—50	3520—7260 Seeds/kg (1600—3300 Seeds/lb)

Vacuum Seed Chart Using Flat Edible Bean Disk

ER40675,000034B-19-09MAR20

Vacuum Level for Cotton—Flat Edible Bean Disk

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

NOTE: To maintain vacuum levels when using flat edible bean disk, do not exceed 12 row units per vacuum fan.

Due to differences in seed sizes and shapes within a seed variety, actual populations vary at the same vacuum level.

Order the flat edible bean vacuum gauge (AA38407) through your John Deere dealer.

Crop Types	Edible Bean Flat-Type Disks			Vacuum	Double Eliminator	Seed Size
	Small A52903	Medium A52904	Large A52878	Inches of Water	Percentage of Hole Covered	Recommendations
Small Cotton	X			12—18	0—50	3520—7260 Seeds/kg (1600—3300 Seeds/lb)

Vacuum Seed Chart Using Flat Edible Bean Disk

ER40675,000034C-19-09MAR20

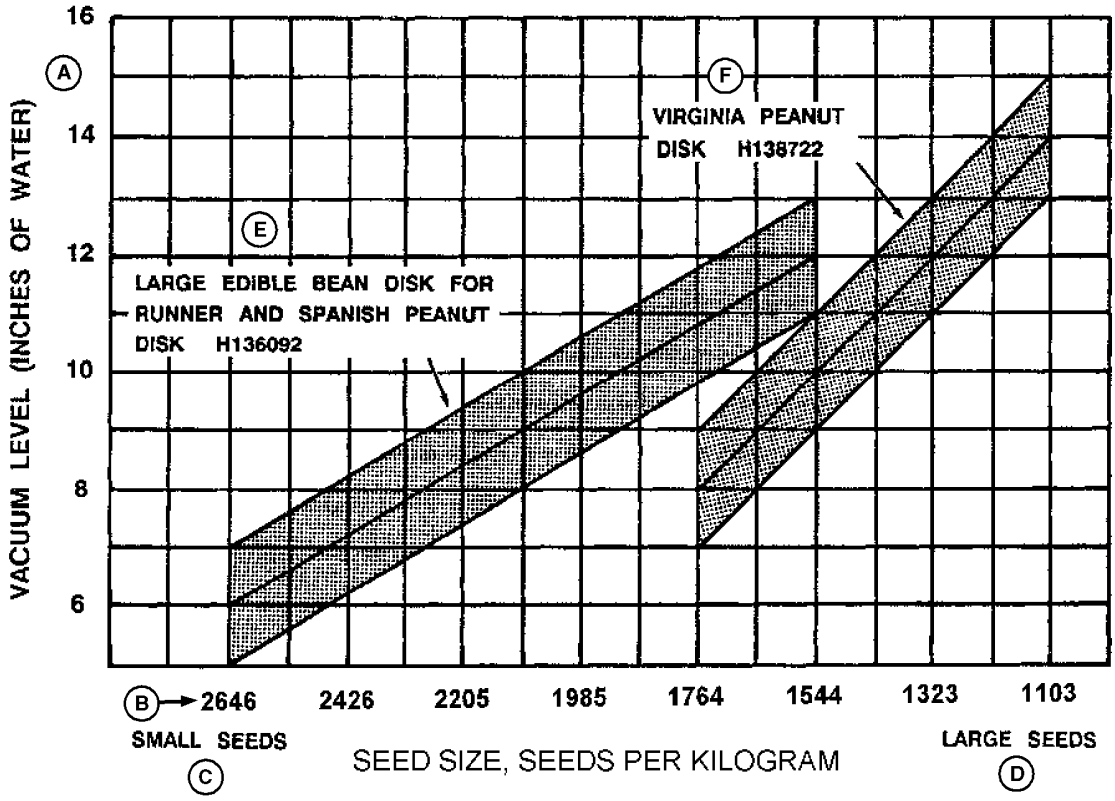
Vacuum Level for Peanuts

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

IMPORTANT: The proper vacuum level must be calculated for each seed variety. Calculate seeds per kilogram by dividing the number of seeds in bag by the weight of bag.

Example: If there are 1760 seeds/kg, the chart indicates a vacuum level of 11 inches of water at the pressure gauge with the large edible bean disk for runner peanuts or a vacuum level of 8 inches of water at the pressure gauge with the Virginia peanut disk.

Use information from the seed supplier to calculate seeds per kilogram.



A60570—UN—07AUG07

A—Vacuum Level (inches of water)
B—Seeds Per Kilogram
C—Small Seeds
D—Large Seeds
E—Large Edible Bean Disk for Runner and Spanish Peanut
F—Virginia Peanut Disk

ER40675,000034D-19-09MAR20

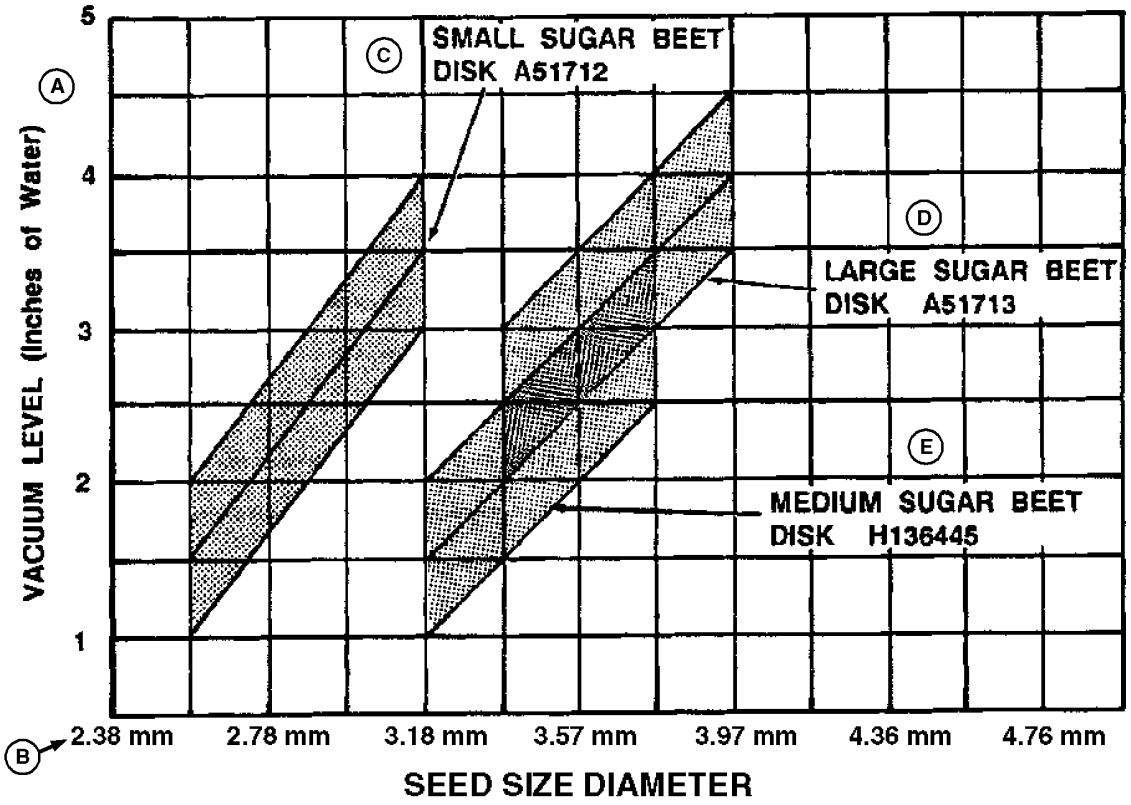
Vacuum Level for Sugar Beet Seed

IMPORTANT: The proper vacuum level must be calculated for each seed size.

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

Example: If the bag label indicates a medium seed diameter of 2.98—3.57 mm (0.11—0.14 in), set the vacuum level between 1.5—2.5 inches of water at the pressure gauge with the medium sugar beet disk.

Use information from the seed supplier to calculate seeds per kilogram.



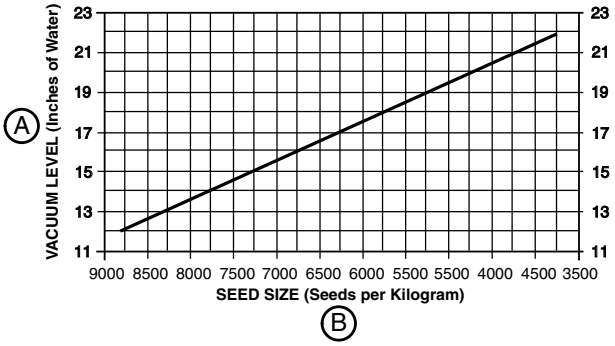
A60560—UN—07AUG07

A—Vacuum Level (inches of water)
B—Seed Diameter
C—Small Sugar Beet Disk
D—Large Sugar Beet Disk
E—Medium Sugar Beet Disk

ER40675,00003B2-19-09MAR20

Vacuum Level for High Population Soybean

IMPORTANT: Calculate the proper vacuum level for each seed size.



BML002101—UN—06MAY20

Recommended Vacuum Level for Soybean Using ProMAX 64 Disk

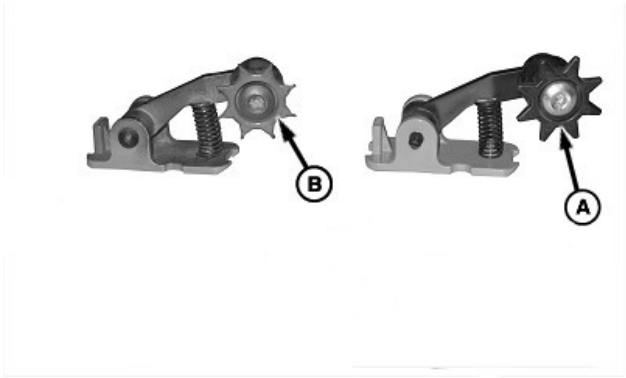
A—Vacuum Level (Inches of Water)
B—Seed Size (Seeds per Kilogram)

Use information from seed supplier to calculate seeds per kilogram.

IMPORTANT: Vacuum levels are a starting point. Perform a field check and adjust level to obtain proper population.

LR35023,000081B-19-14MAY20

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.

Beans Meter Recommendations		
Item	**Description or Setting**	
Seed Disk	A103836	A92778
5-Tine Double Eliminator	Polyline	Polyline
3-Tine Double Eliminator	Polyline	Polyline
3-Tine Double Eliminator Position	Disengaged	Disengaged
Meter Strip	Smooth	Smooth
Knockout Wheel	Wheel (A) AA85925	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765	Black Bristles and Textured Belt A98765
Seeds/kg (Seeds/lb)	Nominal Vacuum	Nominal Vacuum
<2800 (<1300)	26 +/- 4	26 +/- 4
3900 (1800)	18 +/- 8	18 +/- 8
7260 (3300)	12 +/- 6	12 +/- 6
Black or fragile beans	NR[a]	12 +/- 6

[a] *Not Recommended for optimal performance.*

Corn Meter Recommendations	
Item	**Description or Setting**
Seed Disk	A109781
5-Tine Double Eliminator	Polyline
3-Tine Double Eliminator	Polyline
3-Tine Double Eliminator Position	Standard
Meter Strip	Agitation
Knockout Wheel	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765
Seeds/kg (Seeds/lb)	Nominal Vacuum

Corn Meter Recommendations	
Item	**Description or Setting**
<2645 (<1200)	23 +/- 6
3525 (1600)	20 +/- 8
4410 (2000)	18 +/- 6
>5290 (>2400)	16 +/- 4

Small and Medium Flat Corn Meter Recommendations	
Item	**Description or Setting**
Seed Disk	A135462 Standard Rate
5-Tine Double Eliminator	Polyline
3-Tine Double Eliminator	Polyline
3-Tine Double Eliminator Position	Less Aggressive
Meter Strip	Agitation
Knockout Wheel	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765
Seeds/kg (Seeds/lb)	Nominal Vacuum
<2645 (<1200)	25+/- 5
3525 (1600)	20 +/- 8
4410 (2000)	18 +/- 8
>5290 (>2400)	16 +/- 8
NOTE: On planters equipped with CCS, verify that the correct nozzle and elbow are used. (See the Operating the Central Commodity System section for additional information.)	

Soybeans Meter Recommendations	
Item	**Description or Setting**
Seed Disk	A103836
5-Tine Double Eliminator	Polyline
3-Tine Double Eliminator	Polyline
3-Tine Double Eliminator Position	Disengaged
Meter Strip	Smooth
Knockout Wheel	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765
Seeds/kg (Seeds/lb)	Nominal Vacuum
<4410 (<2000)	26 +/- 4
5510 (2500)	18 +/- 8
6615 (3000)	12 +/- 6
>7715 (>3500)[a]	8 +/- 4

[a] *If the soybeans are >3500/lb, use the inner double eliminator at the less aggressive position.*

Sugar Beet Meter Recommendations	
Item	**Description or Setting**
Seed Disk	A104014
5-Tine Double Eliminator	Brush
3-Tine Double Eliminator	Polyline
3-Tine Double Eliminator Position	Standard
Meter Strip	Smooth
Knockout Wheel	Wheel (B) AA89179
BrushBelt	Green Bristles and Smooth Belt A92427
Cartridge Seal	A104012 146 mm (5-3/4 in) length
Seed Size	**Nominal Vacuum**
Mini	9 +/- 5
Regular	NR[a]
Large	NR[a]

[a]*Not recommended for optimal performance.*

Cotton Meter Recommendations			
Item	**Description or Setting**		
Seed Disk	A95892	A95892	A109781
5-Tine Double Eliminator	Polyline	Brush[a]	Polyline
3-Tine Double Eliminator	Polyline	Polyline	Polyline
3-Tine Double Eliminator Position	Standard	Standard	Standard
Meter Strip	Agitation	Agitation	Agitation
Knockout Wheel	Wheel (A) AA85925	Wheel (A) AA85925	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765	Black Bristles and Textured Belt A98765	Black Bristles and Textured Belt A98765
Seeds/kg (Seeds/lb)	Nominal Vacuum	Nominal Vacuum	Nominal Vacuum
<7715 (<3500)	NR[b]	20 +/- 10	15 +/- 6
9480 (4300)	NR[b]	15 +/- 5	NR[c]
11 465 (5200)	23 +/- 7	11 +/- 4	NR[c]
>13 890 (>6300)	14 +/- 2	NR[c]	NR[c]

[a]*Polyline is suggested unless using large seed where Polyline is too aggressive; then use the brush double eliminator.*
[b]*Not Recommended for optimal performance.*
[c]*Not recommended for optimal performance.*

Popcorn Meter Recommendations			
Item	**Description or Setting**		
Seed Disk	A95892	A95892	A109781
5-Tine Double Eliminator	Polyline	Brush[a]	Polyline
3-Tine Double Eliminator	Polyline	Polyline	Polyline
3-Tine Double	Standard	Standard	Standard

Popcorn Meter Recommendations			
Item	**Description or Setting**		
Eliminator Position			
Meter Strip	Agitation	Agitation	Agitation
Knockout Wheel	Wheel (A) AA85925	Wheel (A) AA85925	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765	Black Bristles and Textured Belt A98765	Black Bristles and Textured Belt A98765
Cartridge Seal (small seeds only)	A104012 146 mm (5-3/4 in) length	A104012 146 mm (5-3/4 in) length	A104012 146 mm (5-3/4 in) length
Seeds/kg (Seeds/lb)	Nominal Vacuum	Nominal Vacuum	Nominal Vacuum
<5510 (<2500)	NR[b]	22 +/- 8	20 +/- 10
6615 (3000)	NR[b]	19 +/- 10	NR[b]
8820 (4000)	NR[b]	19 +/- 10	NR[b]
>11 025 (>5000)	23 +/-7	10 +/-2	NR[b]

[a]*Polyline is suggested unless using large seed with large seed; use a brush.*
[b]*Not recommended for optimal performance.*

Milo/Sorghum Meter Recommendations[a]	
Item	**Description or Setting**
Seed Disk	A104014
5-Tine Double Eliminator	Brush
3-Tine Double Eliminator	Polyline
3-Tine Double Eliminator Position	Standard
Meter Strip	Smooth
Knockout Wheel	Wheel (B) AA89179
BrushBelt	Black Bristles and Textured Belt A98765
Cartridge Seal	A104012 146 mm (5-3/4 in) length
Seeds/kg (Seeds/lb)	Nominal Vacuum
<5443 (<12 000)	18 +/- 2
6804 (15 000)	12 +/- 2
>8165 (>18 000)	9 +/- 2

[a]*For more information about sorghum kit, see "Sorghum Kit for ExactEmerge" in Accessories and General Equipment section.*

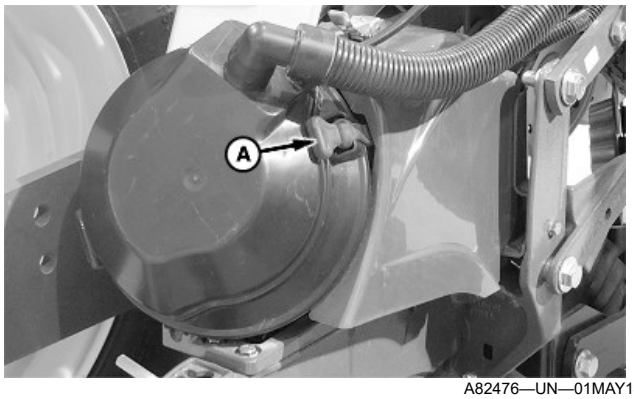
Sunflowers Meter Recommendations	
Item	**Description or Setting**
Seed Disk	A95896
5-Tine Double Eliminator	Polyline
3-Tine Double Eliminator	Polyline
3-Tine Double Eliminator Position	Standard
Meter Strip	Smooth
Knockout Wheel	Wheel (A) AA85925
BrushBelt	Black Bristles and Textured Belt A98765

Sunflowers Meter Recommendations	
Item	Description or Setting
Seeds/kg (Seeds/lb)	Nominal Vacuum
<2268 (<5000)	25 +/- 5
3175 (7000)	15 +/- 2
>4082 (>9000)	10 +/- 1

Sweet Corn Meter Recommendations		
Item	Description or Setting	
Seed Disk	A109781	A95896
5-Tine Double Eliminator	Polyline	Polyline
3-Tine Double Eliminator	Polyline	Polyline
3-Tine Double Eliminator Position	Standard	Standard
Meter Strip	Smooth	Smooth
Knockout Wheel	Wheel (A) AA85925	Wheel (A) AA85925
BrushBelt	Green Bristles and Smooth Belt A92427	Green Bristles and Smooth Belt A92427
Seeds/kg (Seeds/lb)	Nominal Vacuum	Nominal Vacuum
<1497 (<3300)	23 +/- 5	16 +/- 2

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Access the Vacuum Meter

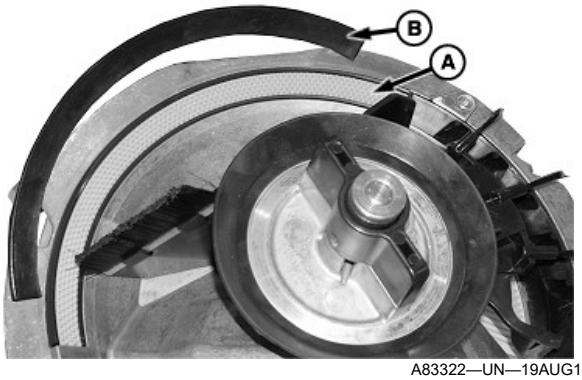


A82476—UN—01MAY14

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

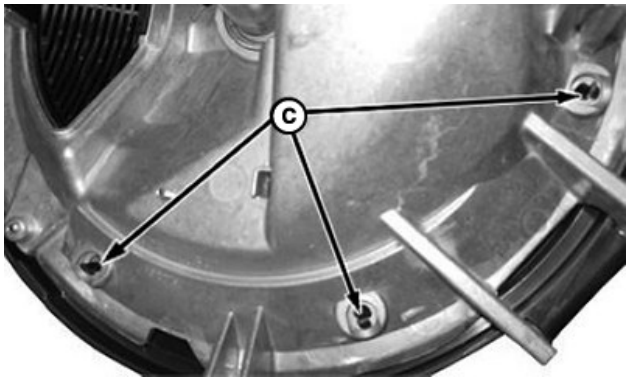
ER40675,00003B7-19-09MAR19

Change the Meter Strip (Agitation or Smooth)



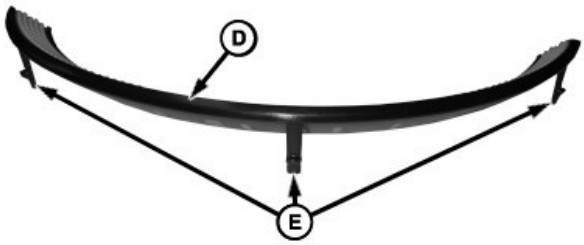
A83322—UN—19AUG14

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.



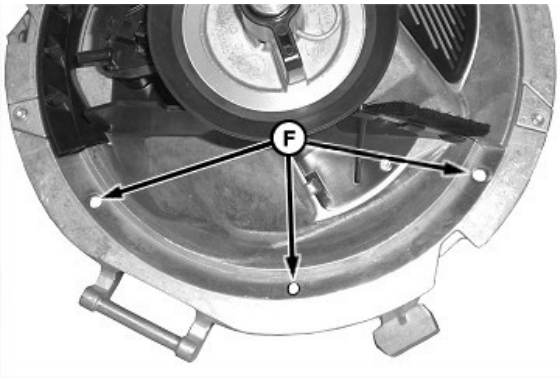
BM030034—UN—11FEB19

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

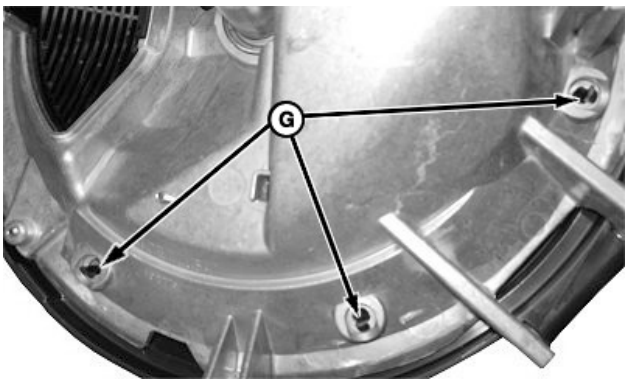


BM028646—UN—29NOV17

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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.)

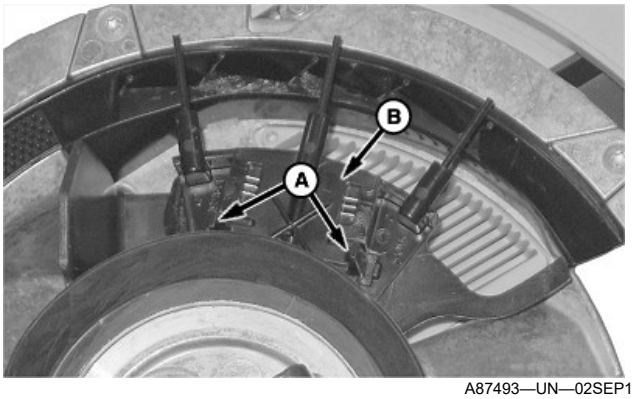
NOTE: The meter hub height must be checked when the seed disk is changed.

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.)

ER40675,00003B9-19-06MAR20

Adjust the Double Eliminator

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

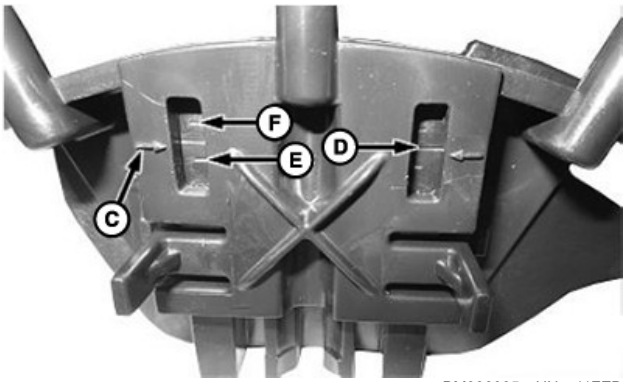


A87493—UN—02SEP15

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.)

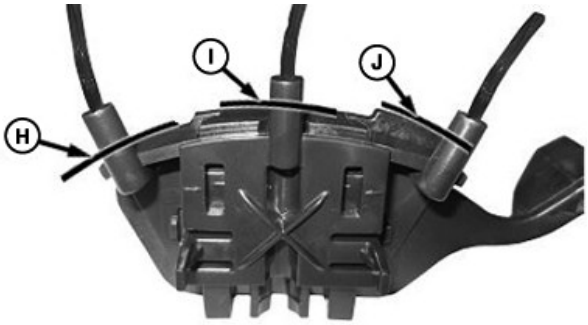
NOTE: If multiples are present, first check if the double eliminator tines or brushes are worn and need replacement.

- 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.



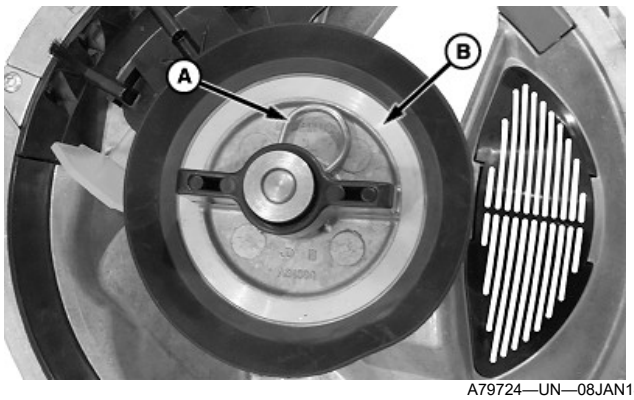
BM030037—UN—11FEB19

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.

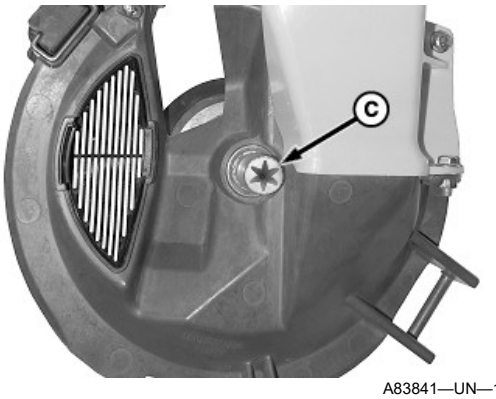
- The left-hand side of the eliminator is leveled with the left-hand side of the support (H) when in a less aggressive position.
- The middle of the eliminator is leveled with the middle of the support (I) when in the standard adjustment position.
- The right-hand side of the eliminator is leveled with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

ER40675,0001019-19-06MAR20

Adjust ExactEmerge™ Meter Hub

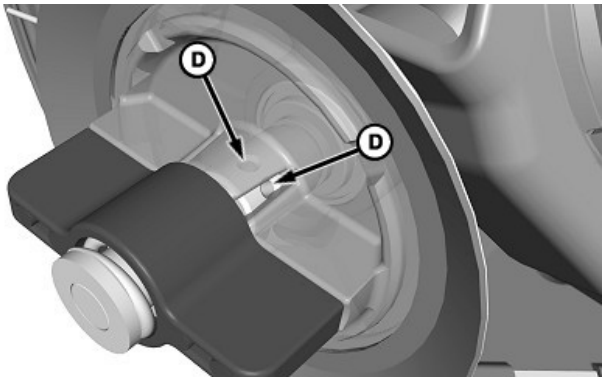


A79724—UN—08JAN14



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.

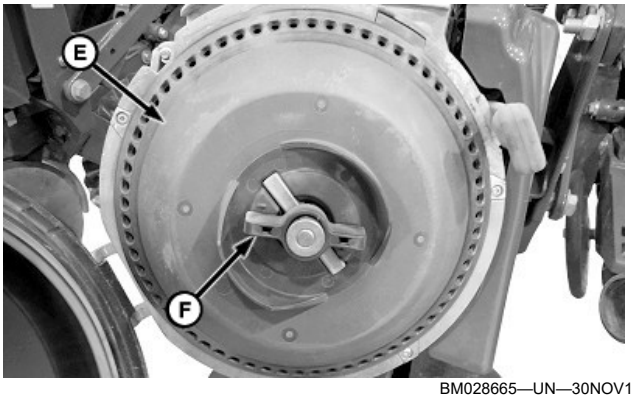


BM028664—UN—30NOV17

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.



BM028665—UN—30NOV17

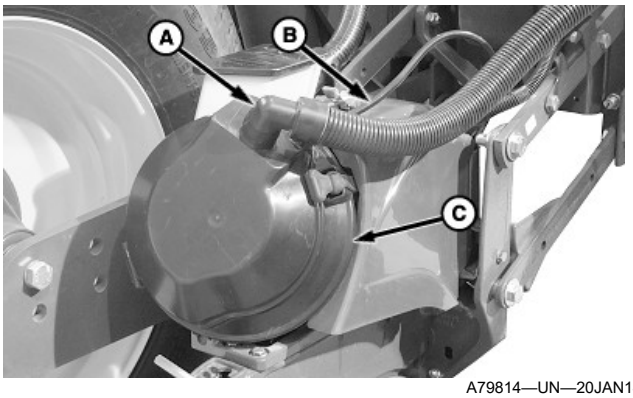
5. Install the seed disk (E) and turn the hub handle (F) to lock in place.
6. Verify that seed disk contacts meter housing.
7. Rotate the hub handle clockwise to check hub height.
   - If hub handle clicks out of detent while attempting to rotate, hub is too tight. Loosen the hub 1—2 holes on spindle.
   - 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.

ER40675,000101C-19-09MAR20

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.



A79814—UN—20JAN14

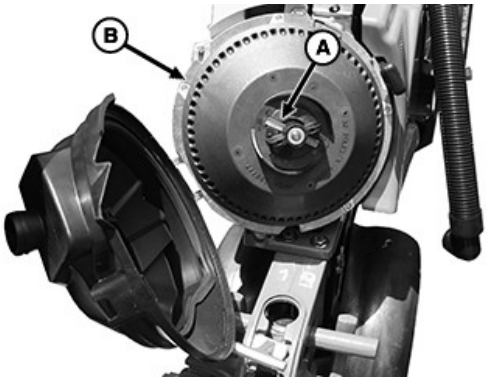
2. Remove the vacuum hose (A) and the vacuum gauge line (B) from the meter dome (C).
3. Remove the dome from the housing.
4. Identify suspected problem meter.
5. Remove the meter.
6. Replace the dome on suspected problem meter with dome removed.
7. Attach a 6 mm (1/4 in) ID hose, long enough to reach 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.

K2F379Y,0000649-19-22MAR22

Adjust the Seed Meter Hub Height



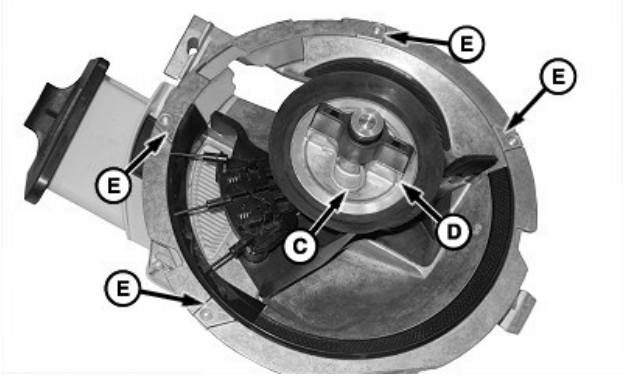
BM029876—UN—30OCT19

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

Check this adjustment whenever a seed disk is changed.

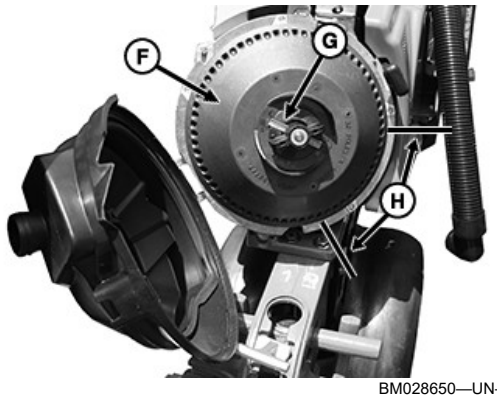
If there is a gap between the seed disk and the wear pads of the meter housing (B) or if the seed disk is difficult to turn, adjust the meter hub as follows:

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.

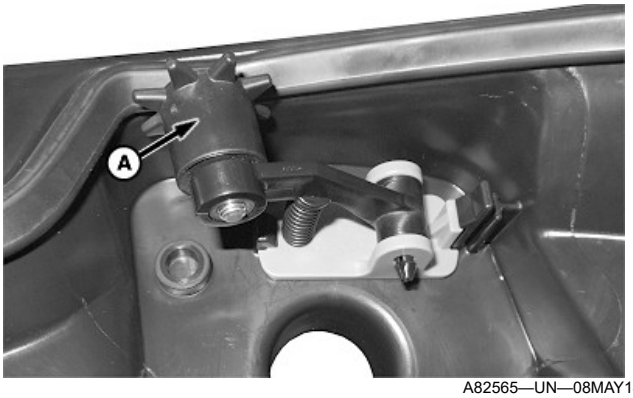
IMPORTANT: Avoid warped seed disks. Do not store the seed disks inside the meters. Do not store the seed disks under heavy items or hang them from the seed cell. Store them away from high heat and sunlight.

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

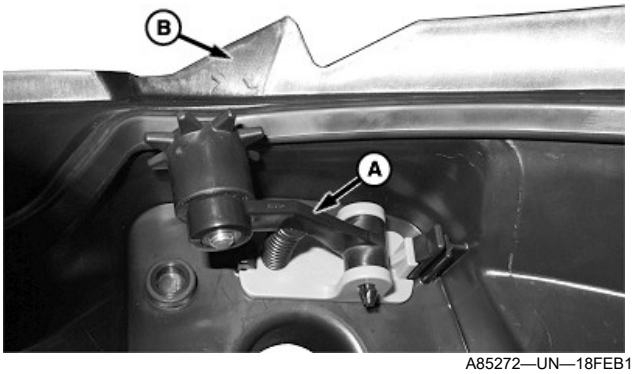
IMPORTANT: To avoid damage to the seed knockout wheel, never operate the meter drives without the seed disks installed. If the meter is operated without a seed disk installed, the rotating BrushBelt™ damages the seed knockout wheel.



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.

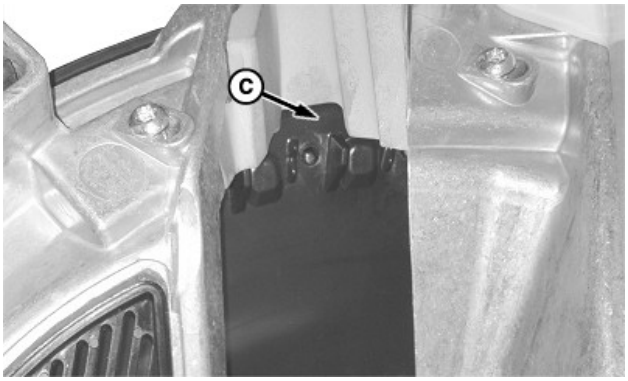
BrushBelt is a trademark of Deere & Company



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.

ER40675,00003BD-19-06MAR20

Install the Knockout Wheel Assembly

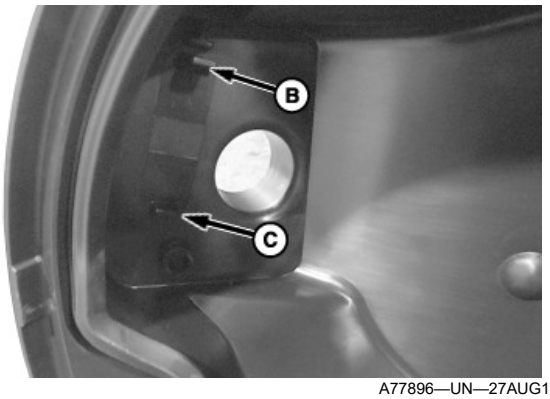
IMPORTANT: Damage to the knockout wheel occurs when the runoff function is performed without the seed disk installed.



A82565—UN—08MAY14

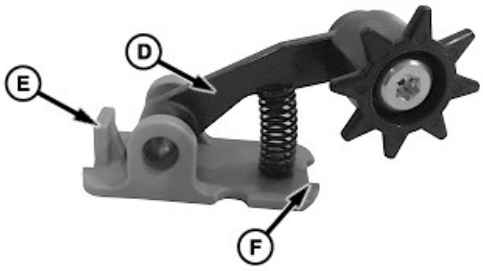
NOTE: The knockout wheel (A) is used to ensure that the seeds are fully released from the seed cell holes. Wheel projections engage the seed cells to eject all of the seeds and foreign material.

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

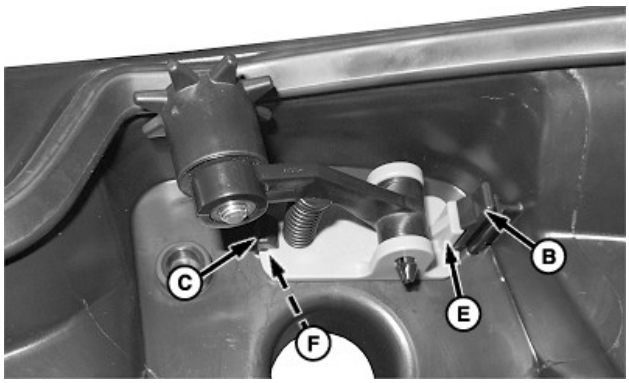


A77896—UN—27AUG13

ExactEmerge is a trademark of Deere & Company



A82575—UN—09MAY14



A82567—UN—08MAY14

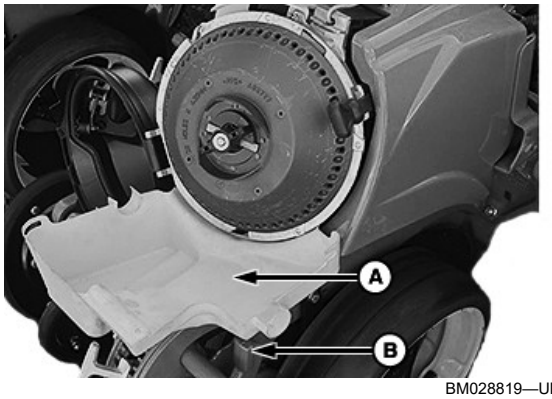
2. Install the knockout assembly (D) inside the seed meter dome by sliding the slot (F) into position under the fastener (C).
3. Slightly pull back on the clip (B). Position the tab (E) and release the clip. Verify that the clip locks over the tab as shown.

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.

ER40675,00003BE-19-06MAR20

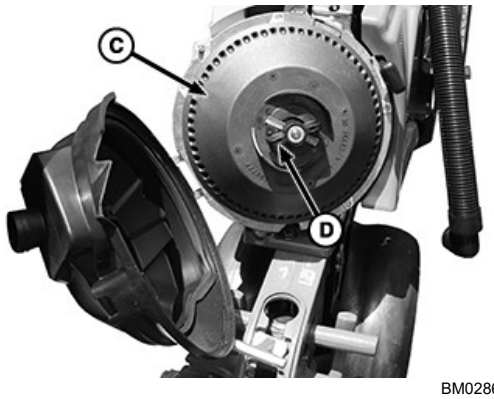
Remove the Seed Disk

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.

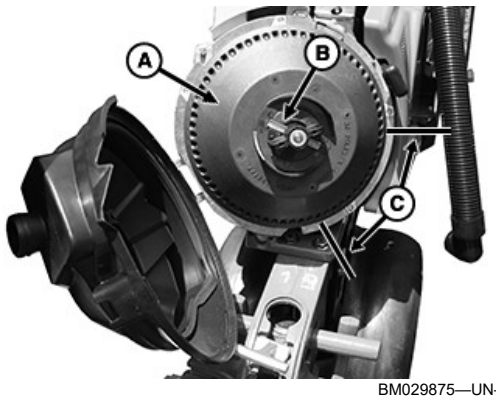


BM028644—UN—14NOV18

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.

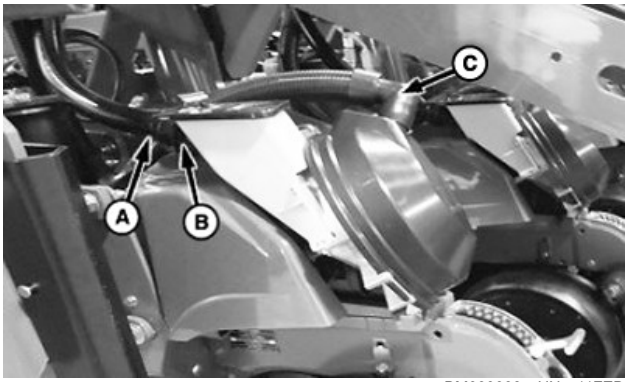
4. Inspect the hub adjustment.
   - Move the seed meter assembly away from the motor drive and verify that there is light contact between the seed disk.
   - Check if the four wear pads in the meter housing are positioned correctly in relation to the seed disk.
   - Check if there is not any gaps in 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

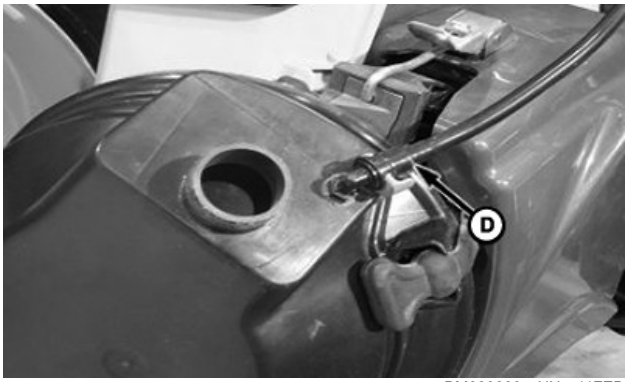
Remove the Seed Meter and Hopper

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



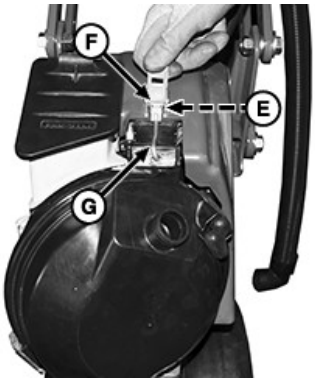
BM030038—UN—11FEB19

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).



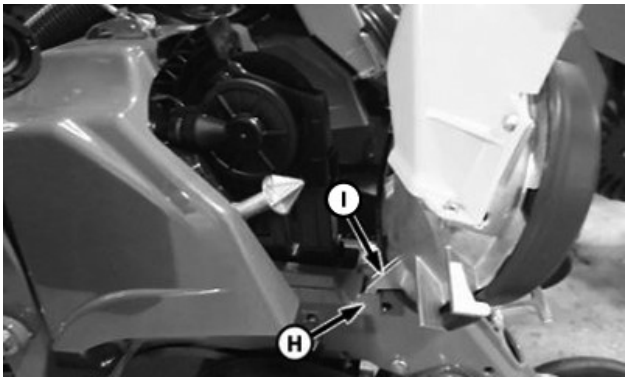
BM030039—UN—11FEB19

3. Remove the vacuum sense hose (D).



BM030040—UN—11FEB19

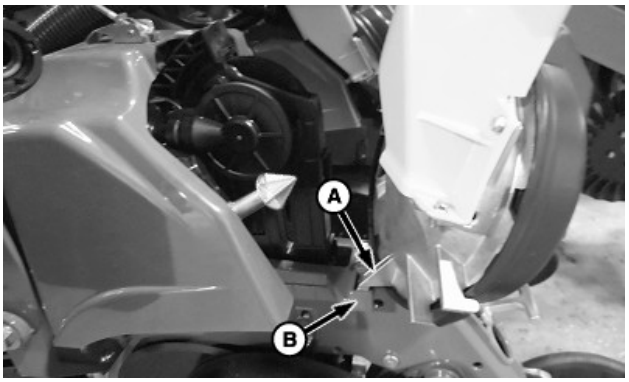
4. Push down the clip (E) while lifting the latch (F) to unlock the seed meter from the top area of the BrushBelt™ cartridge.
5. Remove the hook (G) from the slot in the meter tab.
6. Remove the seed meter coupler from the drive motor shaft.



BM030041—UN—11FEB19

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

Install the Seed Meter and Hopper



A83752—UN—29SEP14

CCS is a trademark of Deere & Company

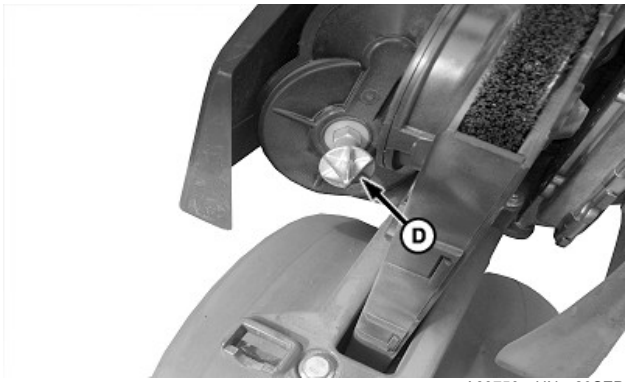
BrushBelt is a trademark of Deere & Company



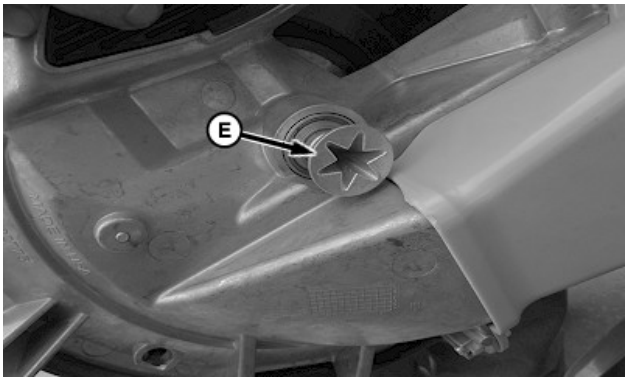
A77995—UN—27AUG13

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.

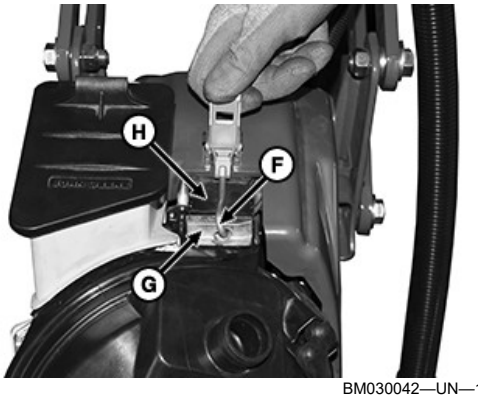


A83750—UN—29SEP14



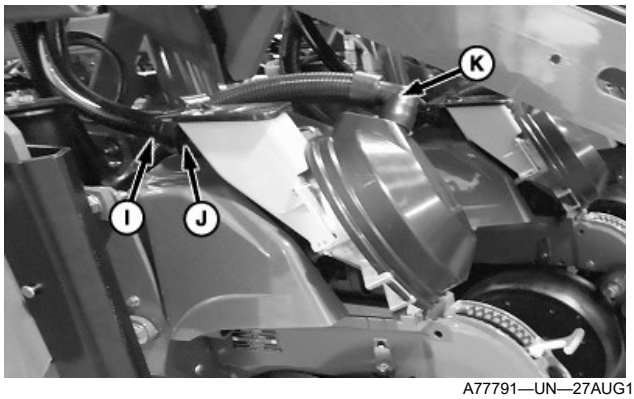
A83751—UN—29SEP14

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).



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.

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CCS is a trademark of Deere & Company



BM030044—UN—11FEB19



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.

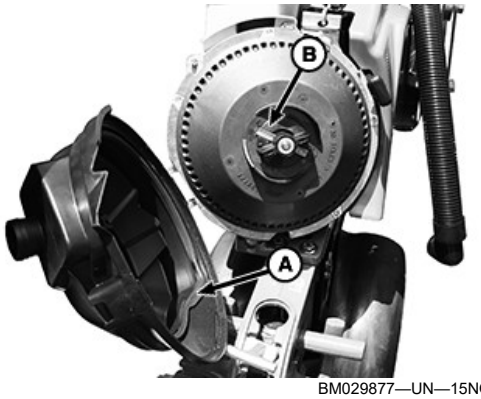
NOTE: Finished attachment of the vacuum sense hose must match graphic shown.

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, see your John Deere dealer for possible replacement of connector.
    - If the hose stays connected to the port, it is seated correctly.

ER40675,000101A-19-06MAR20

Inspect the ExactEmerge™ Meter Unit

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



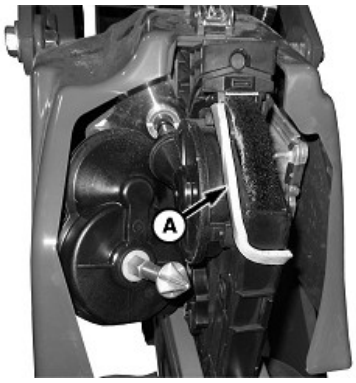
BM029877—UN—15NOV18

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.

ER40675,00003C0-19-06MAR20

Remove and Install the BrushBelt™ Cartridge

Remove the BrushBelt™ Cartridge

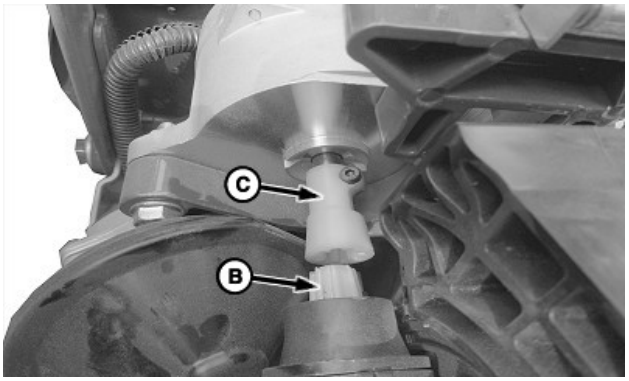


A89526—UN—08FEB16

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.

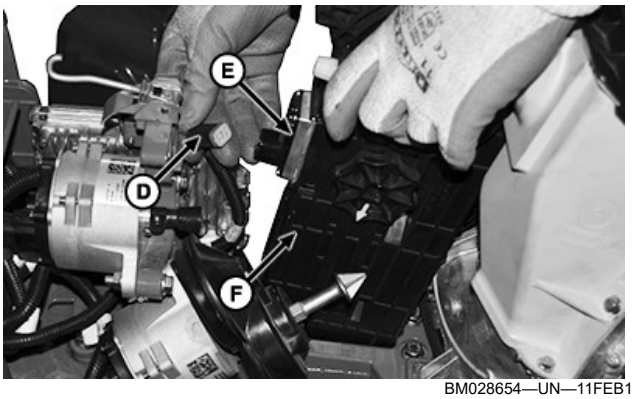
ExactEmerge is a trademark of Deere & Company
BrushBelt is a trademark of Deere & Company

*NOTE: When planting sugar beet, sorghum, small popcorn, 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).



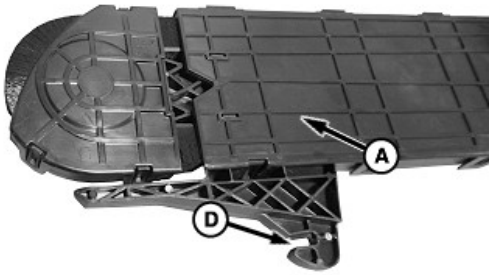
BM028654—UN—11FEB19

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.

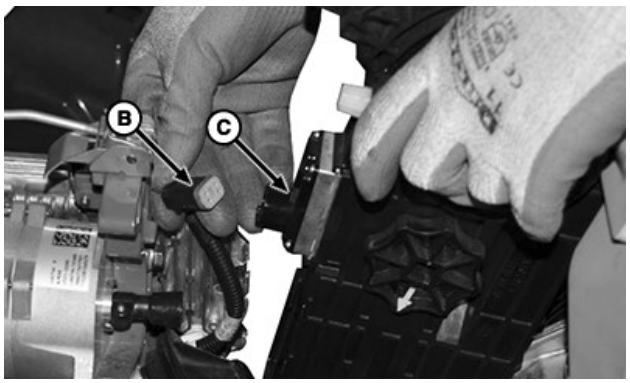
Install the BrushBelt™ Cartridge

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.

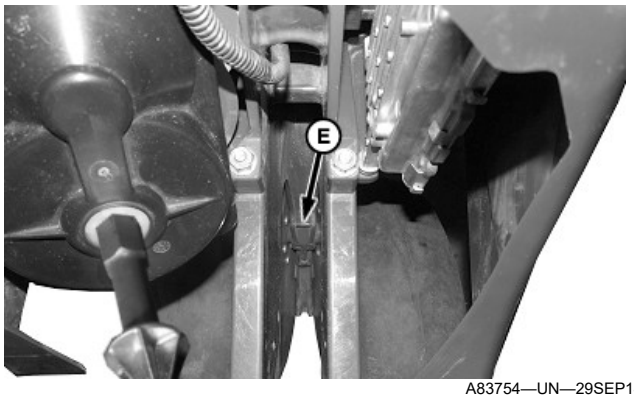


A78705—UN—13DEC13



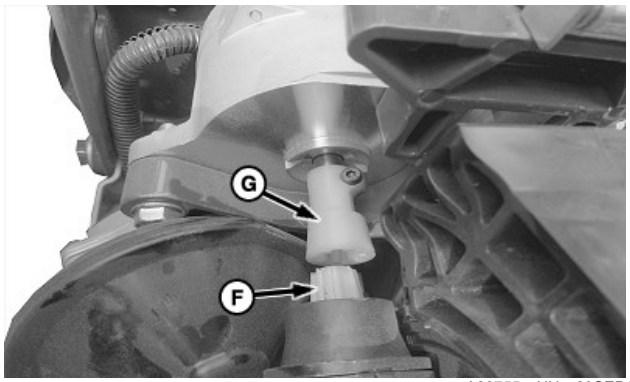
BM030045—UN—11FEB19

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

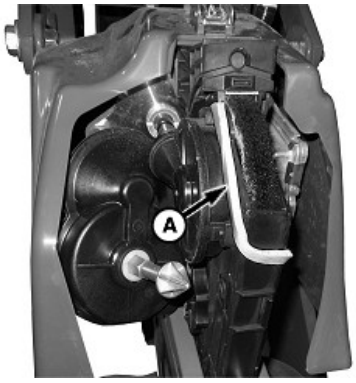
3. Align and push the hook (D) onto the alignment pin (E) until the cartridge locks onto the pin.



A83755—UN—29SEP14

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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 sugar beet, sorghum, small popcorn, 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.

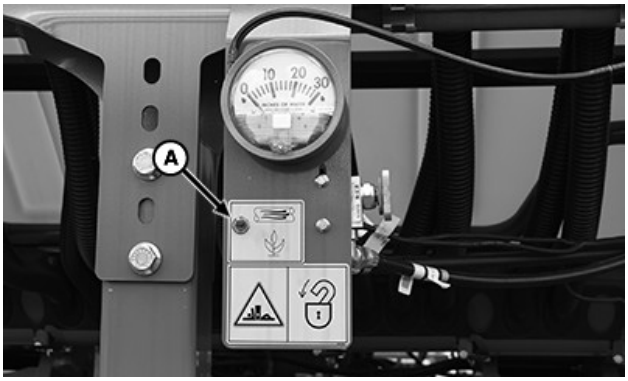
ER40675,000101B-19-06MAR20

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.

NOTE: Type A planters use multiple SCVs for the vacuum function, while Type B planters use only one SCV for the vacuum function.

NOTE: Vacuum and CCS for DB40, DB50, DB74 type B, and DB90 can be adjusted only on tractor SCVs. For DB40, DB50, and DB74 Type A it can also be adjusted on flow control valve.



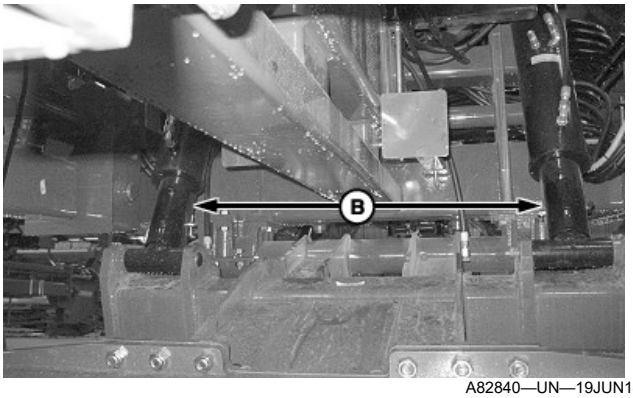
BM030046—UN—11FEB19

The Purge/Plant switch (A) allows the fan to operate while machine is in raised position. Operator is able to clean out the central commodity system (CCS) tanks and purge the hoses without climbing in and out of the tractor cab.

CAUTION: Avoid crushing injury. If the rockshaft row units are raised, rockshaft cylinder locks 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.

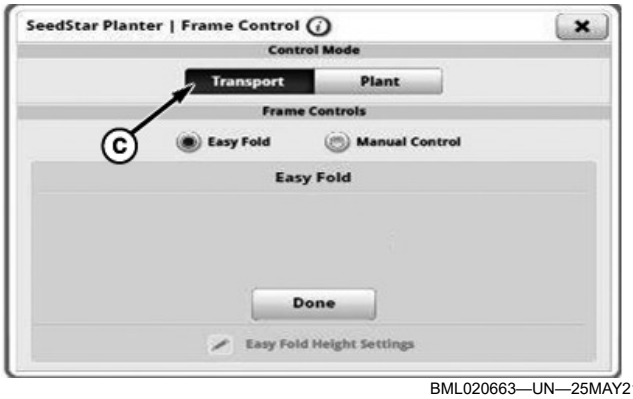
1. Raise machine and do the following:



A82840—UN—19JUN14

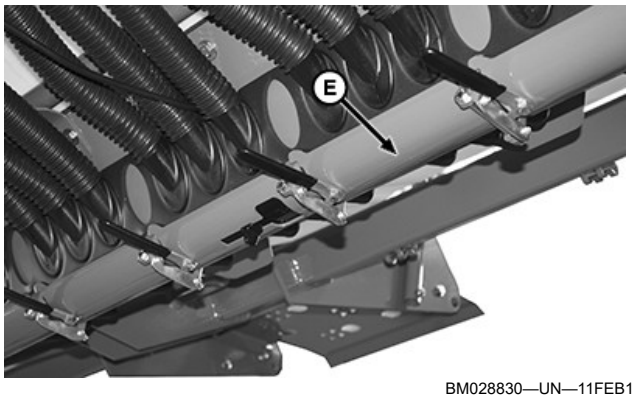
   a. Place tractor in park and apply park brake.
   b. Install the center frame service locks (B).
   c. Install short cylinder stops on rear rockshafts cylinders.

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BML020663—UN—25MAY21

2. Select Transport (C) mode on the SeedStar 4 monitor.
3. Lower machine onto service locks.



BM028830—UN—11FEB19

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

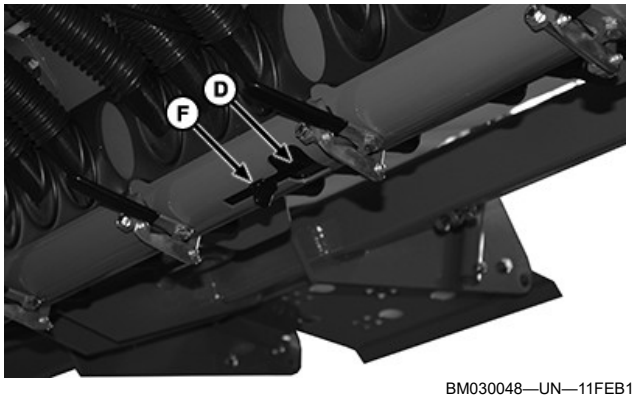
NOTE: Purge/plant switch (A) must be in Plant/Tank Cleanout position or CCS fan forcefully expels seed from cleanout doors.

4. The cleanout door (E) 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.

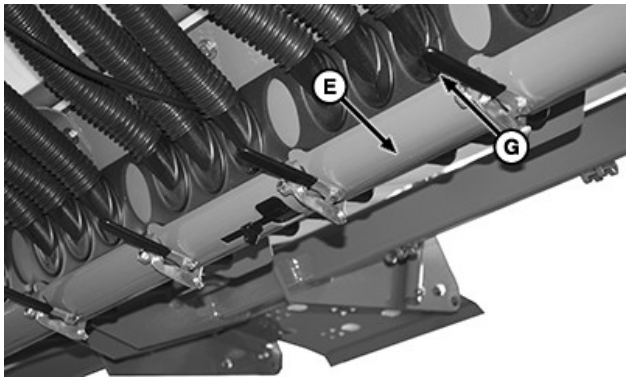
5. To catch seed from the tank, place a container under cleanout doors.



BM030048—UN—11FEB19

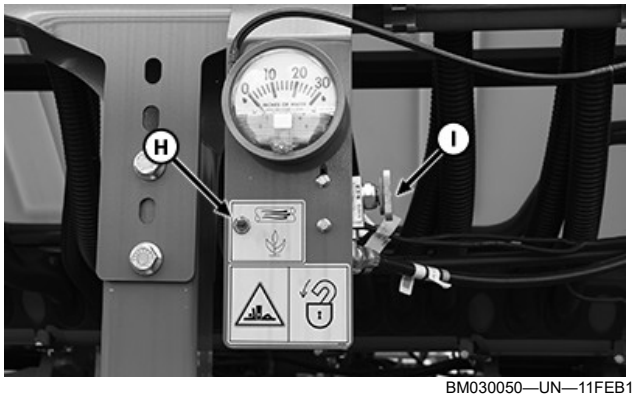
6. To operate the cleanout door (D), slide the handle (F). Once most of the seed has been removed, close the door.

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



BM030049—UN—11FEB19

7. To open the cleanout door (E), rotate the lever (G) and catch remaining seed from the tank.
8. Close the cleanout door.
9. Repeat for all other cleanout doors.



BM030050—UN—11FEB19

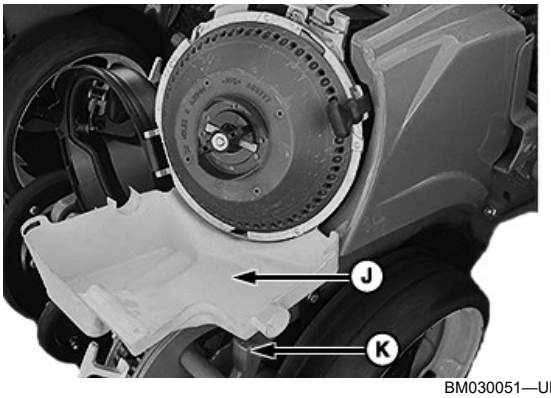
10. Place the Purge/Plant switch (H) in purge hoses position.
11. For Type A planters, adjust the CCS fan control knob (I) until 20 inches of water at the pressure gauge is achieved.
12. For Type B planters and DB90, activate the tractor

SCV to adjust the CCS fan until 20 inches of water at the pressure gauge is achieved.



BM028820—UN—11FEB19

13. Remove the seed meter catch tray (J) from the side of the ladder.



BM030051—UN—11FEB19

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.

14. Install the seed meter catch tray (J) by seating it on the depth gauge wheel adjustment (K).
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 personal injury. If the switch is left in purge hoses position, fan operates anytime the SCV is activated, even in folded position.

NOTE: The purge/plant switch must be returned to the Plant/Tank cleanout position for best planter performance.

18. Place purge/plant switch (H) in plant/tank cleanout position.

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

19. Place tractor SCV in neutral position.
20. Remove the service locks (B).
21. Select the desired mode on the SeedStar 4 monitor and resume the operation.

h3ymaet,1674148109419-19-19JAN23

Set the Vacuum Level

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

NOTE: The adjust of vacuum and CCS for DB40, DB50, DB74 Type B, and DB90 is performed only on tractor SCVs. For DB40, DB50, and DB74 Type A it can also be adjusted on flow control valve.

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 hydraulic hose configuration and connections determine whether the vacuum level is controlled with the tractor hydraulic settings or the in-line planter valve. If the hydraulic hoses for more than one blower are routed to a single SCV, the vacuum is controlled by the planter valve. (See Attaching and Detaching section.)

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.

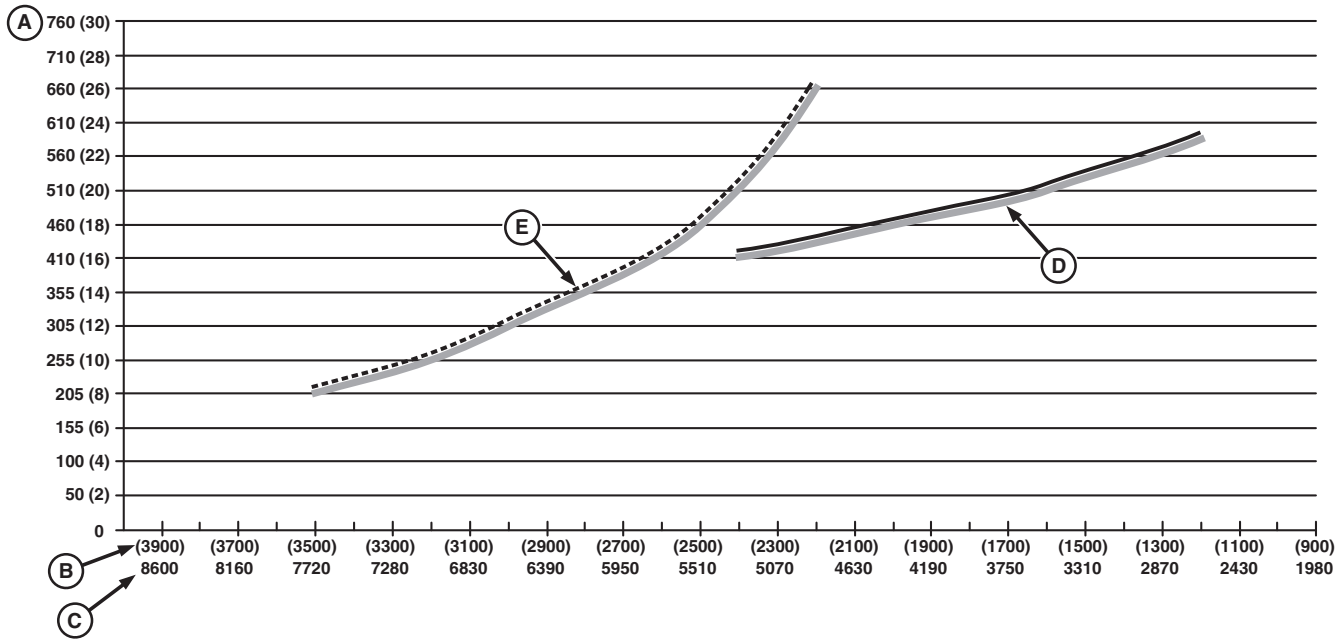
NOTE: See the SeedStar Application Help or the SeedStar Operator's Manual for additional information about all onscreen functions.

4. To fill the seed meters and seed disks with seed, plant at short distance or use the meter fill function shown onscreen.
5. Adjust the vacuum level manually with the tractor selective control valve (SCV), the planter valves, or activate the onscreen control of the vacuum automation.
6. To refine the vacuum level, perform an onscreen meter performance test using the runoff feature.

   If rough field conditions cause seed skips, increasing the vacuum can help. Extra downforce can improve the ride quality, but do not exceed a level of downforce that degrades the seed furrow or compacts the side walls. If all the possible adjustments do not reduce seed skips, reduce ground speed.

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Vacuum Level Recommendations for Corn and Soybean



A96351—UN—04MAY17

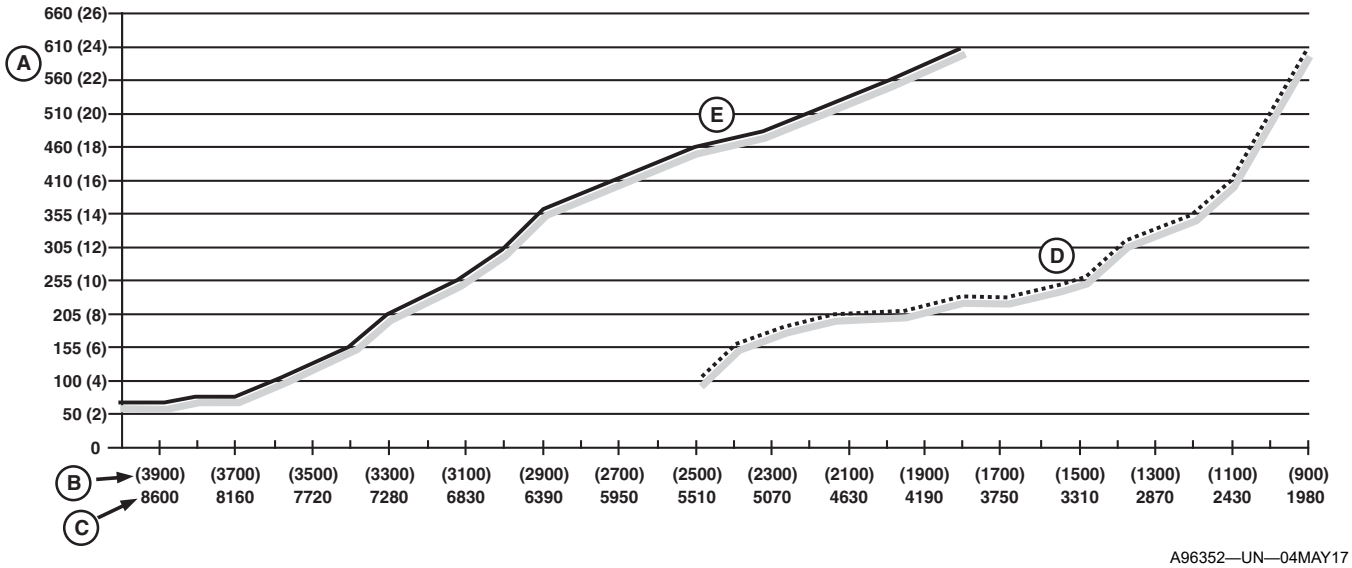
A—Vacuum Level (mm [in] of water)
B—Seeds per lb
C—Seeds per kg
D—Corn
E—Soybean

NOTE: If the Soybeans are > 7700/kg (3500/lb), use the inner double eliminator at the less aggressive position. (See Double Eliminator Adjustment in Service-As Required section.)

NOTE: For corn and soybean, it is recommended to use the outer double eliminator of the polytine type.

ER40675,0000C54-19-09MAR20

Vacuum Level Recommendations for Corn and Soybeans (Optional)



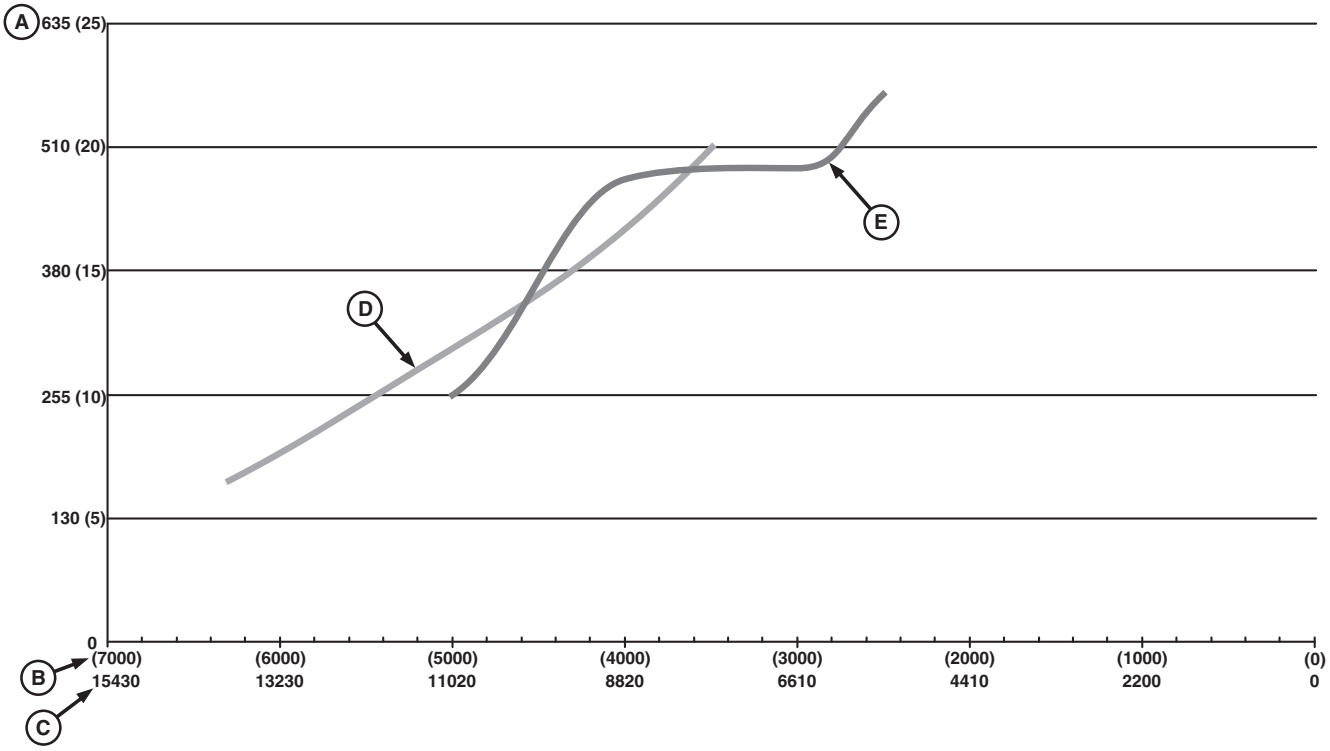
A96352—UN—04MAY17

A—Vacuum Level (mm [in] of water)
B—Seeds per lb
C—Seeds per kg
D—Corn
E—Soybean

NOTE: For corn and soybean (optional), it is recommended to use the outer double eliminator of the brush type.

ER40675,0000C55-19-09MAR20

Vacuum Level Recommendations for Cotton and Popcorn



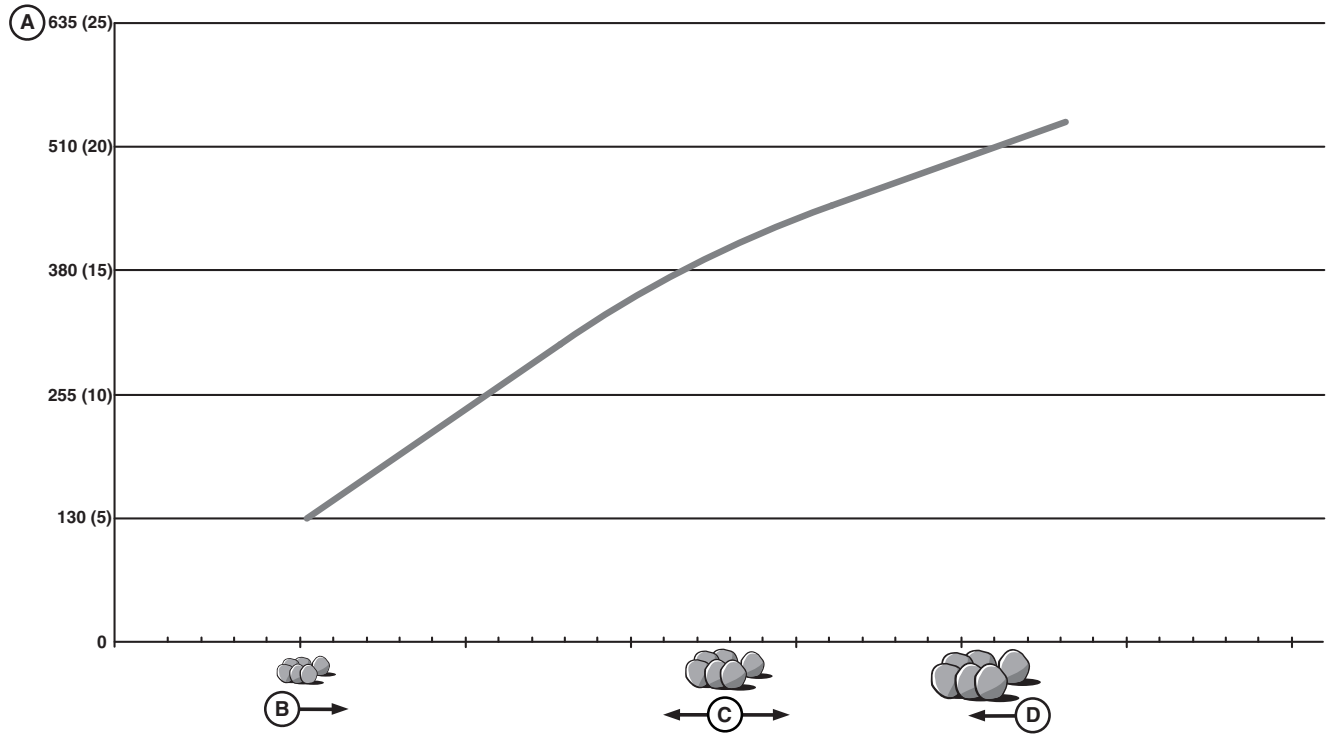
A96353—UN—04MAY17

A—Vacuum Level (mm [in] of water)
B—Seeds per lb
C—Seeds per kg
D—Cotton
E—Popcorn

NOTE: For cotton and popcorn, it is recommended to use the outer double eliminator of the polytine type.

ER40675,0000C56-19-09MAR20

Vacuum Level Recommendations for Sugar Beet



A96354—UN—03MAY17

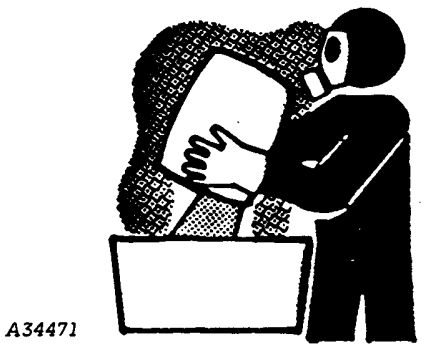
A—Vacuum Level (mm [in] of water)
B—Small Seed
C—Regular Seed
D—Large Seed

NOTE: For sugar beet, it is recommended to use the outer double eliminator of the brush type.

ER40675,0000C57-19-09MAR20

Meter Lubricant

Use of Graphite Lubricant—MaxEmerge™ 5 and MaxEmerge™ 5e



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 insure 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.

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.	
CCS™ Tank Size	**Amount of Graphite**
1450 L (42 bu) Bulk Tank	3.10 L (0.81 gal)
Per 80 000 Kernel Seed Corn Unit	74.00 mL (2.50 fl oz)

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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.

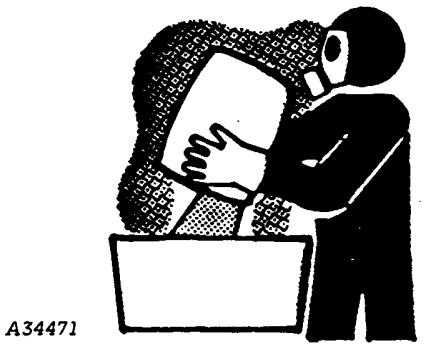
If the graphite builds up at the bottom of the tanks and the vacuum manifolds require more frequent cleaning, reduce the graphite rate accordingly. If a coating of seed treatment is found on the seed disks, increase the amount of graphite.

TS95756,00001A0-19-26MAY21

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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—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. (See your John Deere dealer.)

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
DB 40	2 CCS™—2175 kg (2900 L)	8.0 kg (20.8 L)
DB 50	3 CCS™—3260 kg (4350 L)	12.0 kg (31.2 L)
DB 74	3 CCS™—3260 kg (4350 L)	12.0 kg (31.2 L)
**1 kg of blended talc and graphite lubricant = 2,6 L / Seed density = 0,75 g/cm³*		

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.

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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.

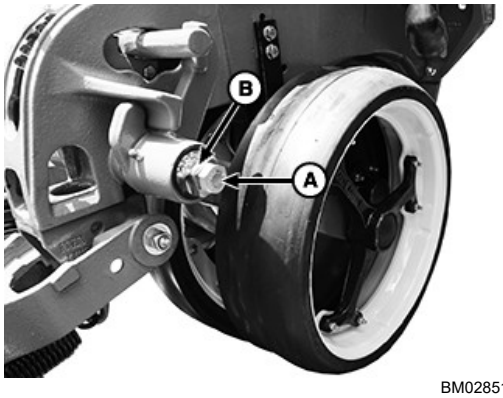
If the lubricant builds up at the bottom of the hopper and the vacuum tubes require more frequent cleaning, reduce the lubricant rate. If a coating of seed treatment is found on the seed disks, increase the amount of lubricant.

When using seed treatments, clean the sensors and the seed disks as needed. Clean the seed disks with warm, soapy water. Spray a graphite solution on the vacuum seal side of the disks as needed.

TS95756,00001A1-19-26MAY21

Double Disks

1. Check if the depth gauge wheels are correctly assembled against the blades of the double disks to avoid accumulation of soil.



BM028513—UN—14NOV18

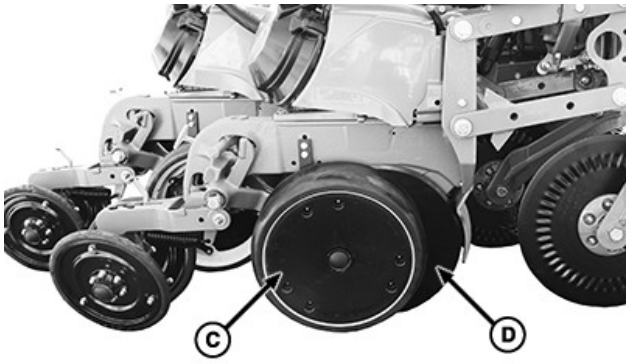
2. Loosen the screw (A) by approximately 1/2 turn, and change the position of the depth gauge wheel.
3. Turn the bushing (B) clockwise to position the depth gauge wheel closer to the seed disk, or counterclockwise to separate it.
4. After adjusting, tighten the screw (A) to specification:

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 the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.*

NOTE: The depth gauge wheel must have a light contact with the blades of the double disks.

Install the Depth Gauge Wheels



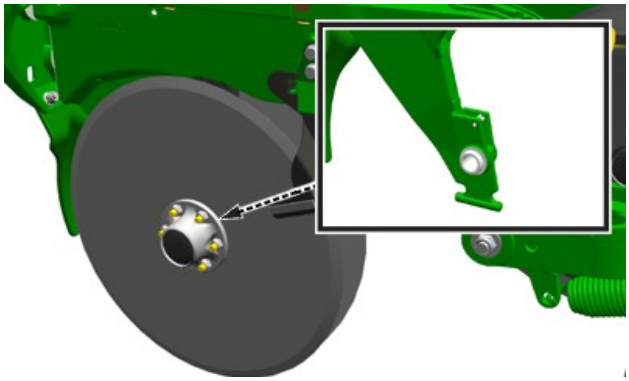
BM028667—UN—15NOV18

NOTE: Observe the correct installation of the depth gauge wheels (C) and the blades (D) as shown in figure.

NN32476,000037F-19-18MAY21

Row Unit Shank Identification Type

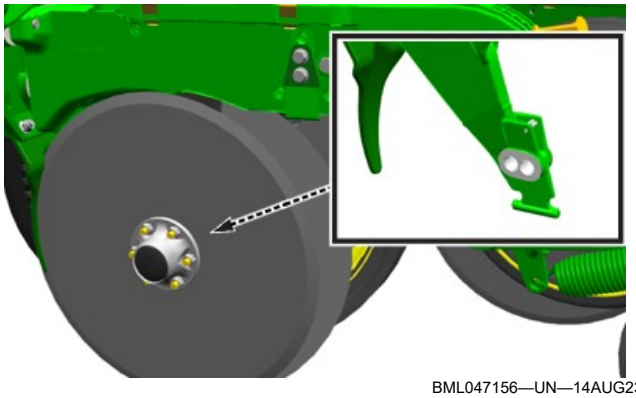
Row Unit Shank Type A:



BML047155—UN—14AUG23

Type A

- The double disks can only be installed in the aligned configuration.
- The Row Unit Shank Type A has only one hole for the installation of the double disks.
- For planters with serial number -150099 and below.



BML047156—UN—14AUG23

Type B

Row Unit Shank Type B:

- The double disks can be installed installed both in the aligned and the offset configuration.
- The Row Unit Shank Type B has two holes for the installation of the double disks.
- For planters with serial number 150100- and above.

h3ymaet,1691758065658-19-15AUG23

Adjust Double Disk Alignment—Type B Row Unit Shank

NOTE: To check which type of row unit shank is equipped, see Row Unit Shank Identification Type in this section.

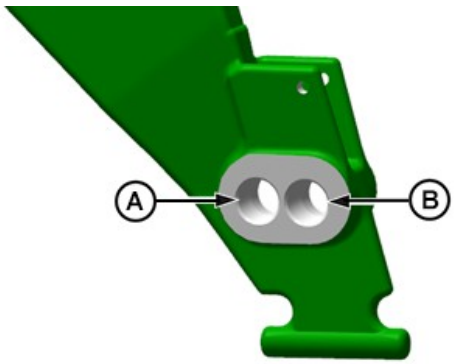
To avoid dirt build up between the double disks, the alignment of the double disks is adjusted with the left-hand side or the right-hand side disk positioned ahead of the other disk.

IMPORTANT: Avoid damages. If not using the double disks aligned, it is necessary that half the machine is with the double disks offset to the left-hand side and the other half to the right-hand side. The offset of the double disks must be instaled in an intercalated manner in the row units.

To adjust the offset, observe the following instructions:

1. Park planter on level ground.
2. Remove the double disks. (See Replace the Furrow Opener Blades in this section.)

NOTE: Parts are ommited for visualization purposes.



BML047103—UN—03AUG23

NOTE: If the doubles disk are to be aligned, install both on the rear hole (B).

3. Choose which double disk will be installed ahead for the offset configuration and install it on the rear hole (B). (See Replace the Furrow Opener Blades in this section.)
4. Install the disk that will be positioned behind on the front hole (A). (See Replace the Furrow Opener Blades in this section.)

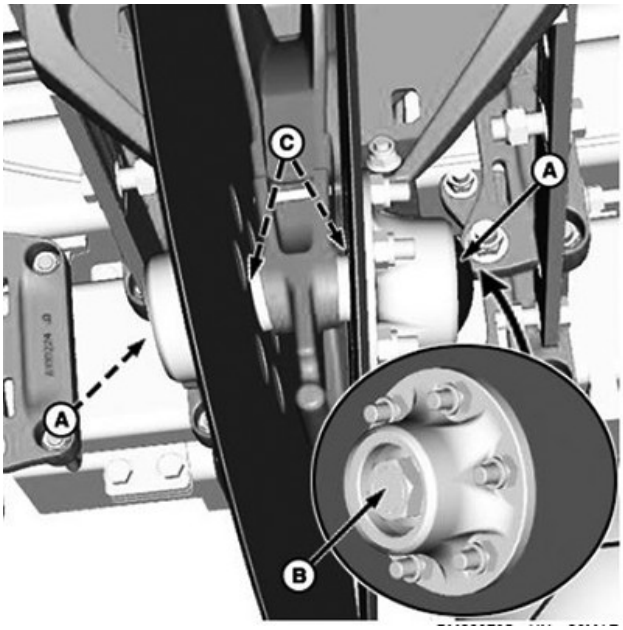
h3ymaet,1690288781795-19-12SEP23

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.

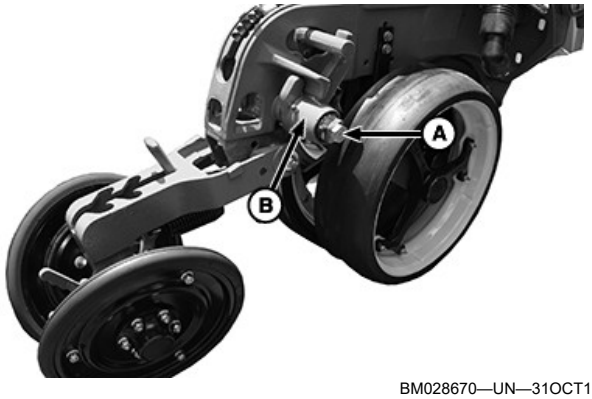
IMPORTANT: Make sure that there is a contact between the disks.

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

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



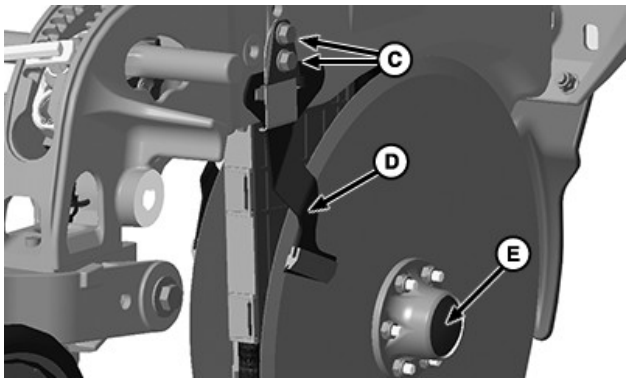
BM028670—UN—31OCT18

1. Remove the screw (A), the 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

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

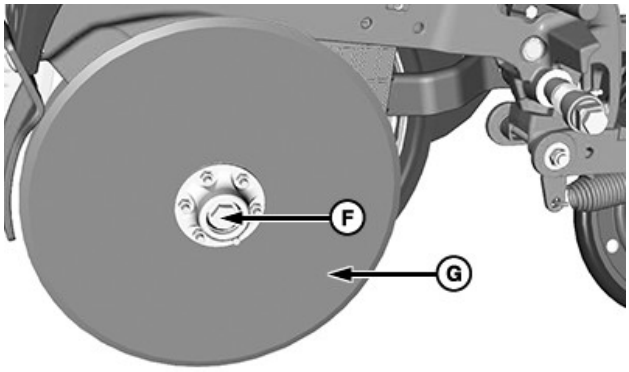
Specification

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

Specification

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

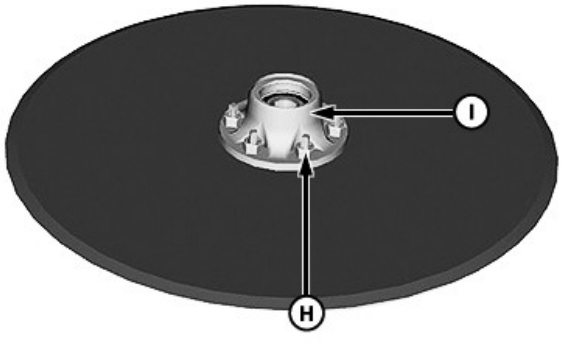
3. Remove the hub cap (E).



BM028672—UN—15OCT18

4. Remove the screw (F) and the blade (G).

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



BM028673—UN—31OCT18

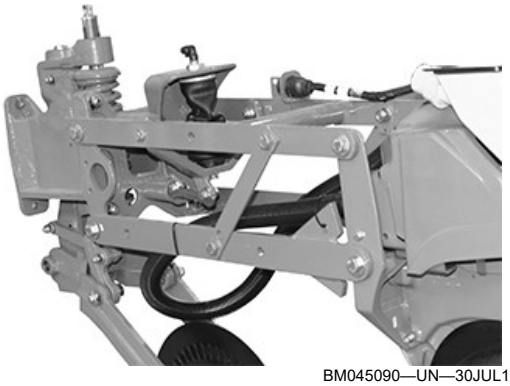
5. After removing the blade, put it on a safe place, remove the nuts and screws (H) and the flange (I).
6. To assemble the blades, perform the procedure in reverse order observing the following:
7. Tighten the flange nuts (H) to specification:

Specification

Flange Nuts—Torque. . . . . 40 N·m (29 lb·ft)

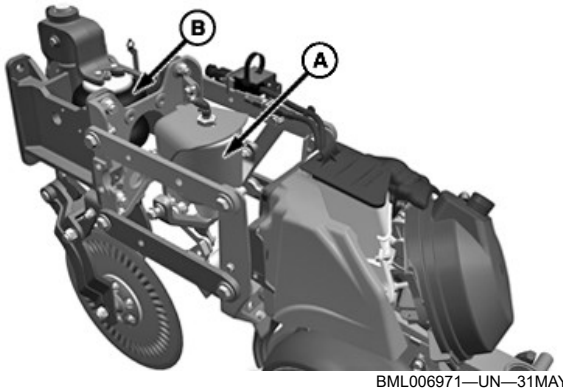
NN32476,00002AD-19-18MAY21

Pneumatic Downforce



BM045090—UN—30JUL19

Improperly Rolled Air Spring—Pneumatic Downforce (PDF) of the Row Unit



BML006971—UN—31MAY21

Properly Rolled Air Springs—Pneumatic Downforce (PDF) of the Row Unit and of the Coulter (if equipped)

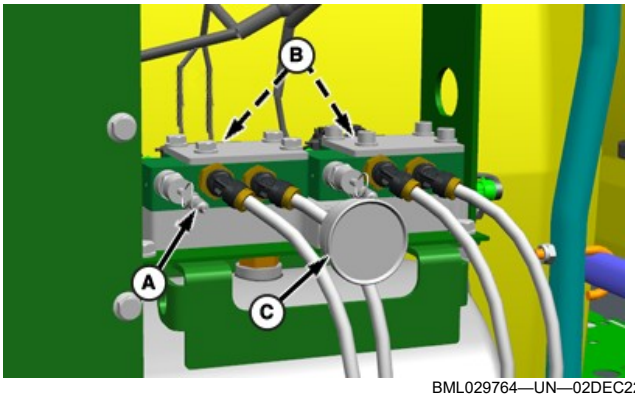
The pneumatic downforce (PDF) system is composed of the PDF of the row unit (A) and the PDF of the coulter (B) (if equipped). All information shown here refers to both systems.

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.**

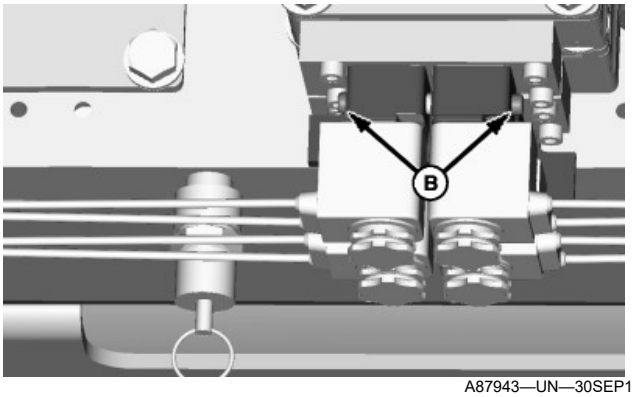
IMPORTANT: Do not lower the machine with zero air pressure in the system. Maintain 34—55 kPa (0.3—0.5 bar) (4.3—7.8 psi) or 76—120 N (17—27 lb) downforce in the system to avoid kinks in the air springs. If an air spring kinks, raise the machine and pressurize the system until the air springs straighten 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.



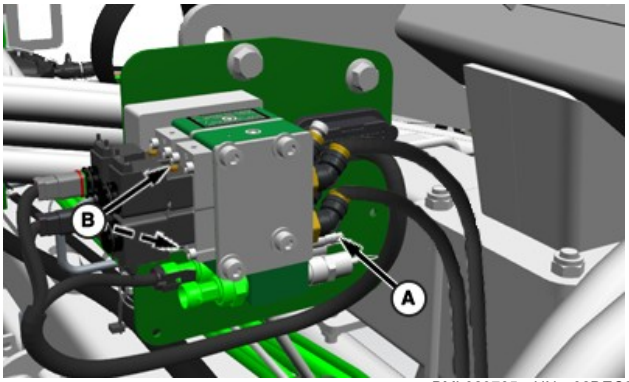
BML029764—UN—02DEC22

Hydraulic Compressor—Compressor on the Planter



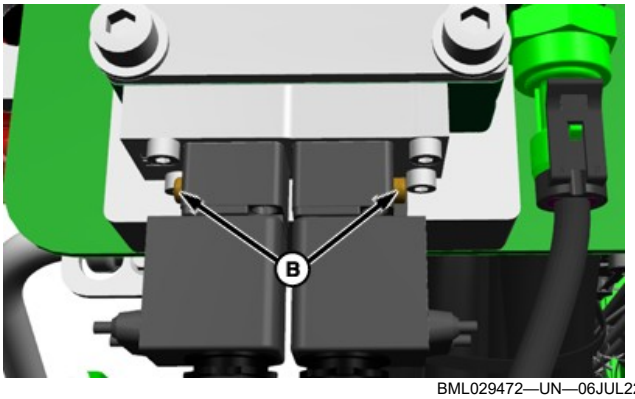
A87943—UN—30SEP15

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.

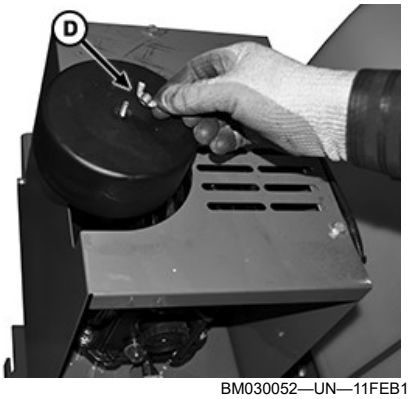
Clean or Replace the Air Compressor Filter

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. Replace the air filter element every 100 operating hours or at the beginning of each season. 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.



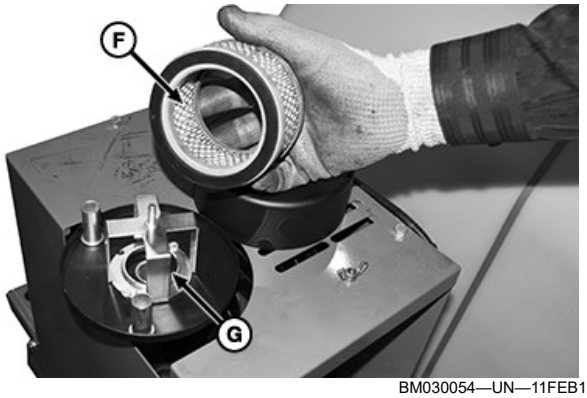
BM030052—UN—11FEB19

2. Remove the wing nut (D).



BM030053—UN—11FEB19

3. Remove the weather shield (E).



BM030054—UN—11FEB19

4. Remove the filter element (F).

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 (G) before installing the filter.

6. Install the filter (F).

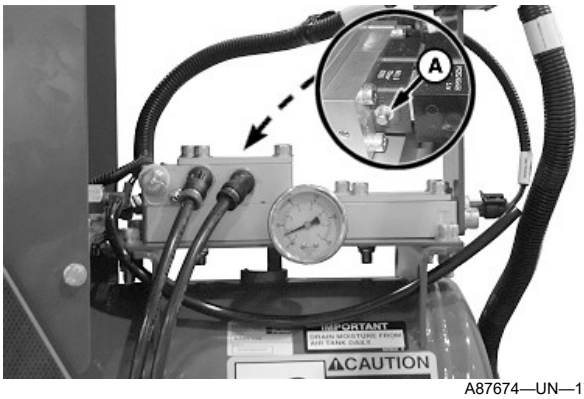
7. Install the previously removed weather shield (E) and wing nut (D).
8. Tighten the wing nut (D).

h3ymaet,1674148662553-19-19JAN23

Depressurize the Pneumatic Downforce System

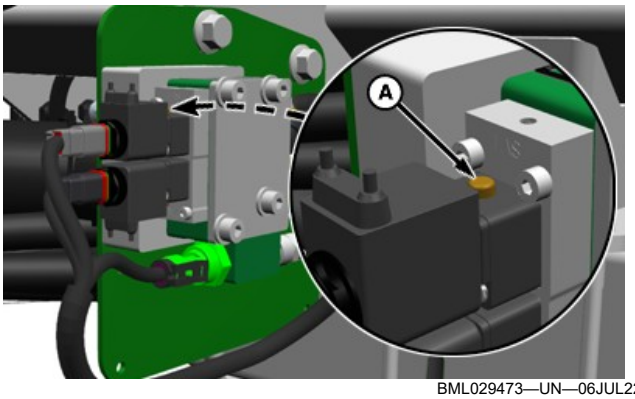
NOTE: The location and orientation of the air reservoir vary based on the planter model. The procedure is similar for all planter models.

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



A87674—UN—17SEP15

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.)

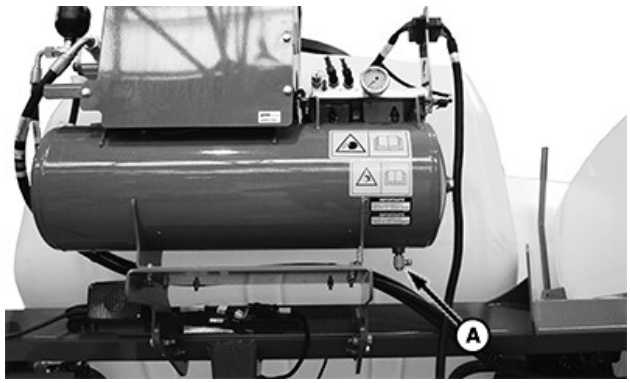
h3ymaet,1656933009741-19-08AUG22

Drain Compresser-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 compresser-air tank daily and before storing the machine.

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



BM045091—UN—30JUL19

Downforce Air Reservoir Drain Valve

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

h3ymaet,1656933612841-19-08AUG22

Available Spacing Configuration

Model	Configuration Type	Number of Lines	Line Spacing cm (in)
DB40	Factory Configuration	23	50 (19.7)
			52.5 (20.7)
		25	45 (17.7)
		27	45 (17.7)
	Field Optional Configuration[a]	14	90 (35.4)
		16	76 (30)
DB50	Factory Configuration	29	52.5 (20.7)
		31	50 (19.7)
		35	45 (17.7)
	Field Optional Configuration[a]	18	90 (35.4)
		20	76 (30)
DB74 (MaxEmerge 5)	Factory Configuration	45	50 (19.7)
		48	45 (17.7)
	Field Optional Configuration[a]	24	90 (35.4)
		30	76 (30)
DB74 (ExactEmerge and MaxEmerge 5e)	Factory Configuration	43	52.5 (20.7)
		45	50 (19.7)
		49	45 (17.7)
	Field Optional Configuration[a]	25	90 (35.4)
		30	76 (30)
DB90 (Only for MaxEmerge 5 and MaxEmerge 5e)	Factory Configuration	51	52.5 (20.7)
		55	50 (19.7)
		61	45 (17.7)
	Field Optional Configuration[a]	31	90 (35.4)
		36	76 (30)

[a] These sets can be used according to the field conditions, respecting tractor capacity. Consult your John Deere dealer for more information and check the minimum tractor power required.

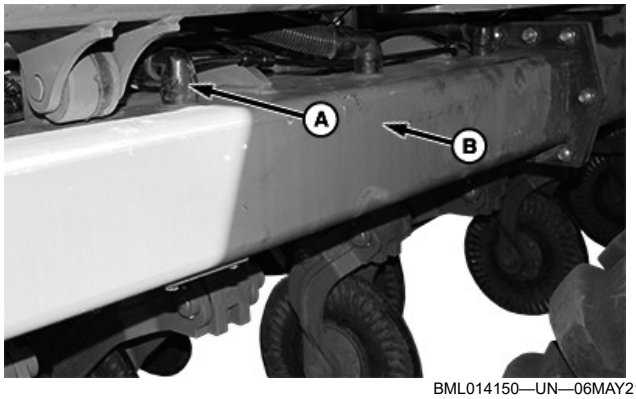
h3ymaet,1696332774153-19-03OCT23

Row Spacing Conversion

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

NOTE: The row units and parallel arms have been removed for clarity.

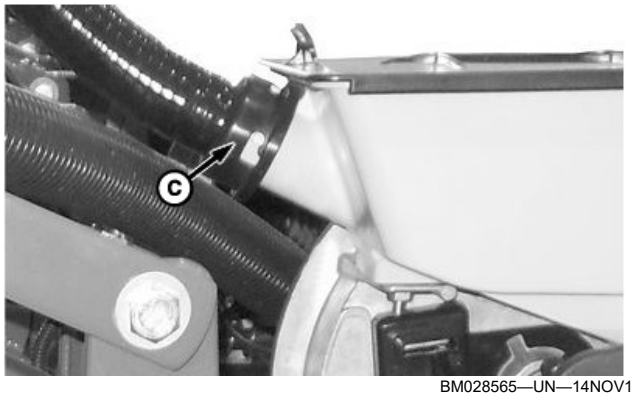
1. Unfold the planter on a clean and level surface. (See Unfold and Fold Planters in the Transport section.)
2. Lower planter until the opener blades touch the ground.



BML014150—UN—06MAY21

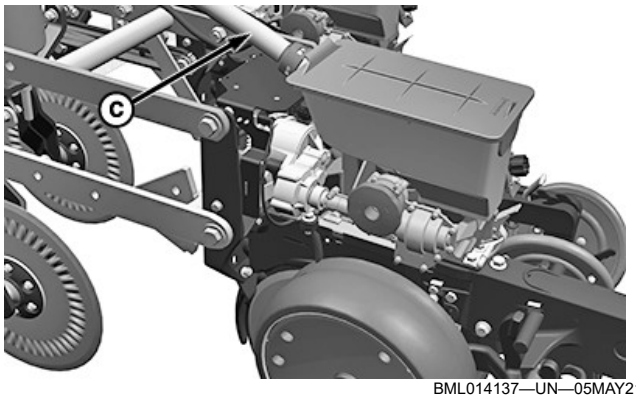
3. Disconnect all vacuum hoses (A) from the planter frame (B).

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



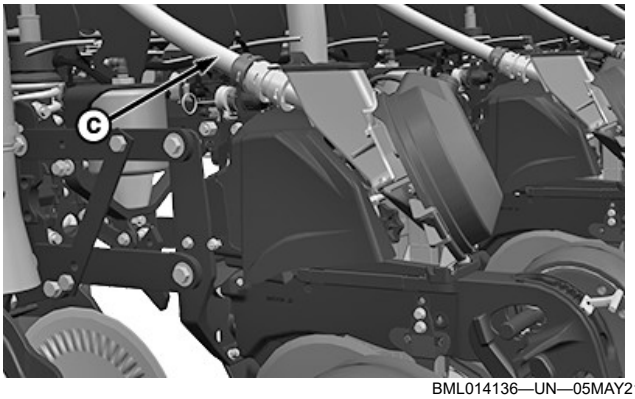
BM028565—UN—14NOV17

Seed Delivery Hoses—MaxEmerge™ 5



BML014137—UN—05MAY21

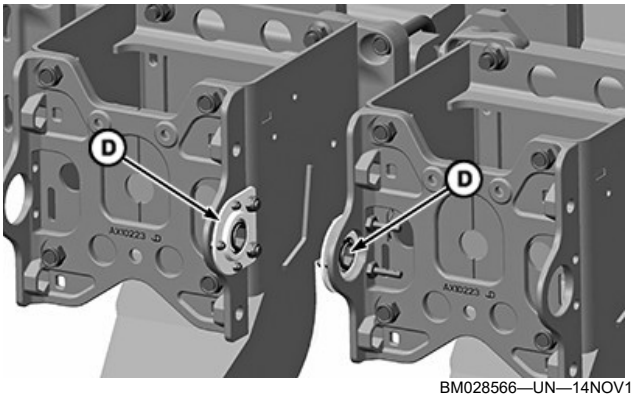
Seed Delivery Hoses—MaxEmerge™ 5e



BML014136—UN—05MAY21

Seed Delivery Hoses—ExactEmerge™

4. Disconnect all seed delivery hoses (C) from the seed meters.
5. Remove all seed meter assemblies.
6. Disconnect all seed tube sensor leads.
7. Remove the left, center, and right frame backbone harnesses.
8. For MaxEmerge™ 5 planters:
   a. Loosen all drive chain idler assemblies and remove and retain all drive chains.
   b. Loosen all clamps of the planter driveshafts.
   c. Remove and retain all couplers.
   d. Remove and retain the driveshafts. Retain all drive components as the shafts are removed.



BM028566—UN—14NOV17

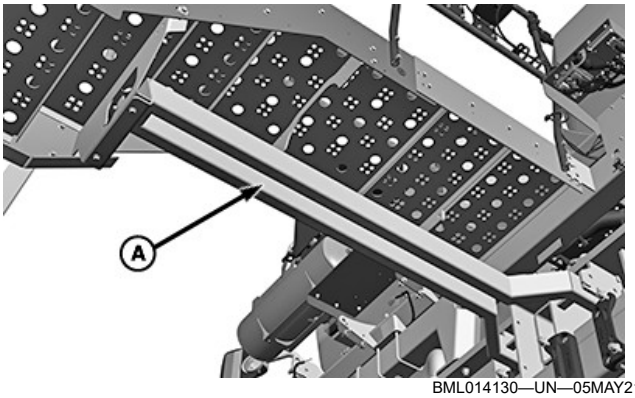
   e. Remove all bearing brackets (D) from row units.
9. To perform the row spacing conversion, remove all necessary row units.
10. Install the row units according to the spacing desired.

MaxEmerge is a trademark of Deere & Company

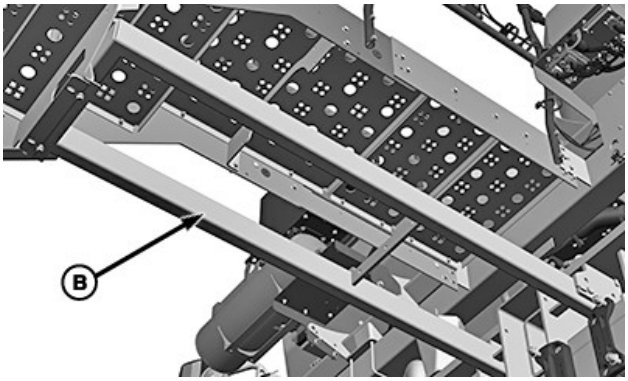
IMPORTANT: Consult the available spacings for each planter model. See Available Spacing Configuration in this section.

CR84017,0000835-19-12MAY21

Ladder Support Frame



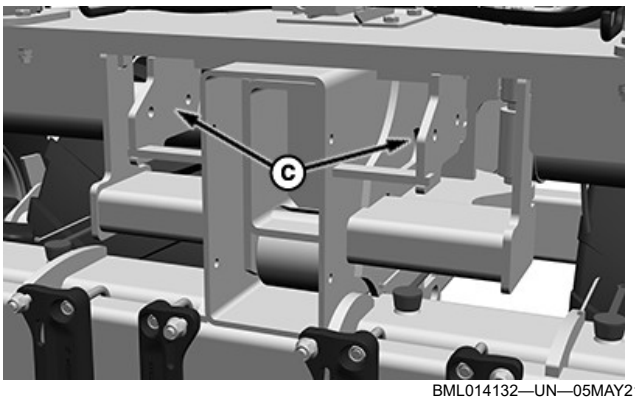
BML014130—UN—05MAY21



BML014131—UN—05MAY21

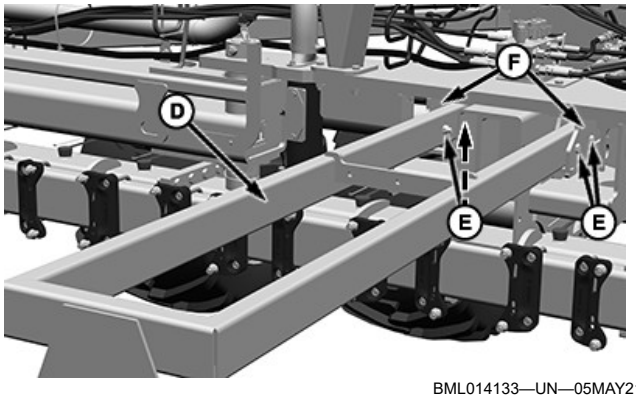
A—Ladder Support Frame for Planter with 76 cm (29.92 in) Row Spacing
B—Ladder Support Frame for Planter with 45 cm (17.71 in), 50 cm (19.68 in), or 90 cm (35.43 in) Row Spacing

1. Remove the ladder support frame (A) or (B) and the mounting hardware.
2. Locate the ladder support frame in the bundle, according to the row spacing used.



BML014132—UN—05MAY21

3. Install the ladder support frame on the brackets (C).



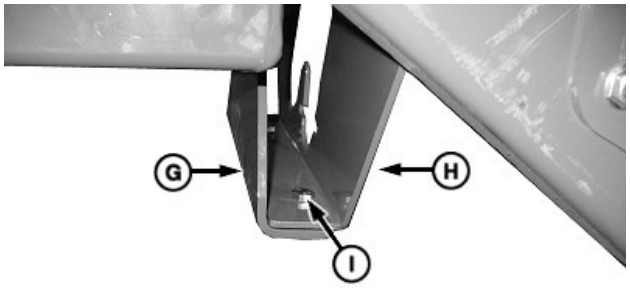
BML014133—UN—05MAY21

4. Position the support frame (D) on the brackets (F) and install screws and nuts (E). Tighten screws and nuts to specification.

Specification	
Ladder Support Frame Attaching Screws and Nuts—Torque	240 N·m (175 lb·ft)

NOTE: The ladder has been removed for better understanding.

NOTE: On the DB50 planter, it can be necessary to loosen and retighten the vacuum turbine.

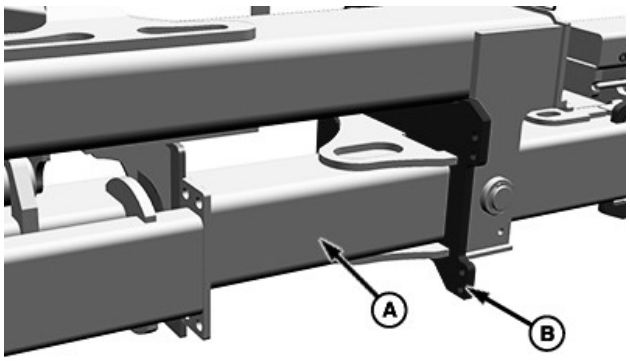


BM028569—UN—14NOV17

5. Align the supports (G) and (H) and install the screws and nuts (I).

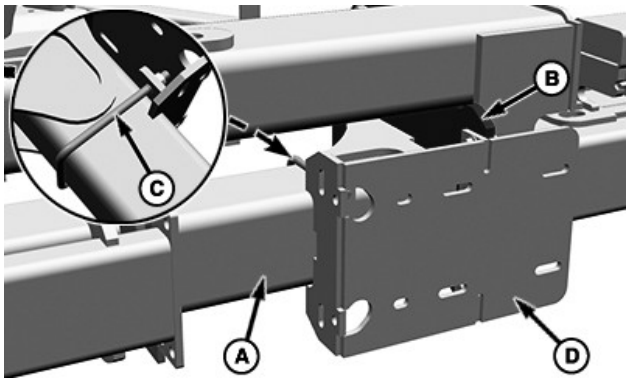
CR84017,0000836-19-26MAY21

Attach Bracket



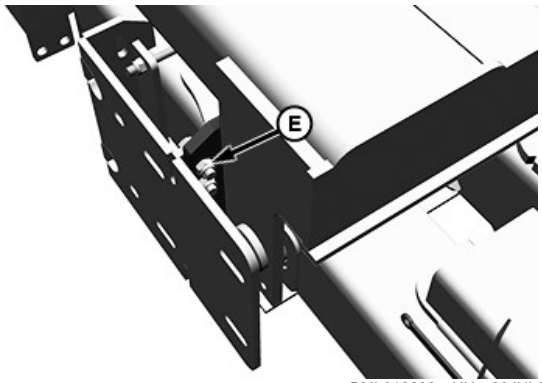
BML012205—UN—29JUL20

Right-Hand Side of the Center Frame



BML012206—UN—29JUL20

Right-Hand Side of the Center Frame



BML012209—UN—29JUL20

A—Inner Wing Frame
B—Mounting Plate
C—U-bolt and Nuts
D—Bracket (2 used)
E—Bracket Attaching Screws and Nuts (8 used)

1. On each inner wing frame (A), attach the bracket (D) to the mounting plate (B): use the bracket attaching screws and nuts (E) with the U-bolt and nuts (C).
2. Tighten the U-bolt and nuts (C) to specification.

Specification	
U-bolt and Nuts—Torque	240 N·m (175 lb·ft)

3. Tighten the bracket attaching screws and nuts (E) to specification.

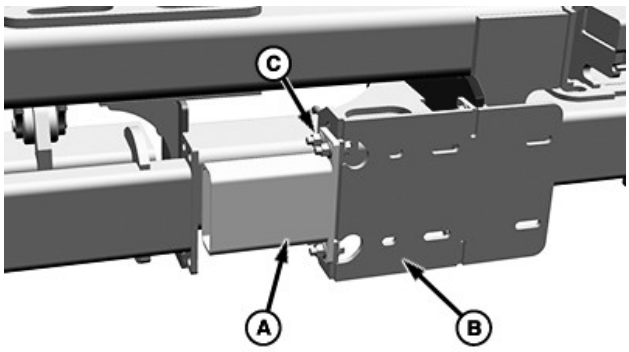
Specification	
Bracket Attaching Screws and Nuts—Torque	240 N·m (175 lb·ft)

CR84017,0000858-19-12MAY21

Center Frame Extensions

NOTE: To install tube (A), locate in the table the configuration for each row spacing available.

1. **Position 1:** install tube (A) on bracket (B).



BML012208—UN—29JUL20

Position 1

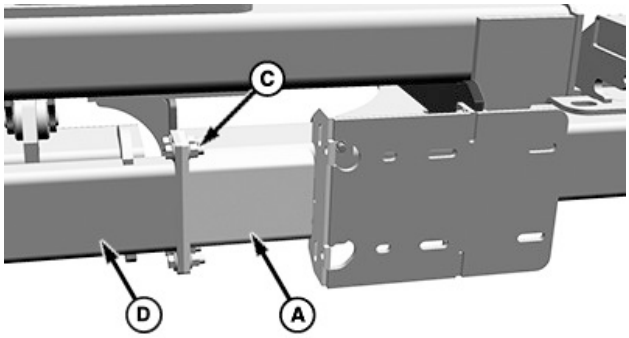
A—Tube
B—Bracket
C—Screw and Nut (8 used)

2. Tighten the screws and nuts (C) to specification.

Specification

Screws and Nuts (C)—Torque. . . . . 240 N·m (175 lb·ft)

1. **Position 2:** install tube (A) on tube (D).



CQ1348747—UN—05SEP23

Position 2

A—Tube
C—Screw and Nut (8 used)
D—Tube

2. Tighten the screws and nuts (C) to specification.

Specification

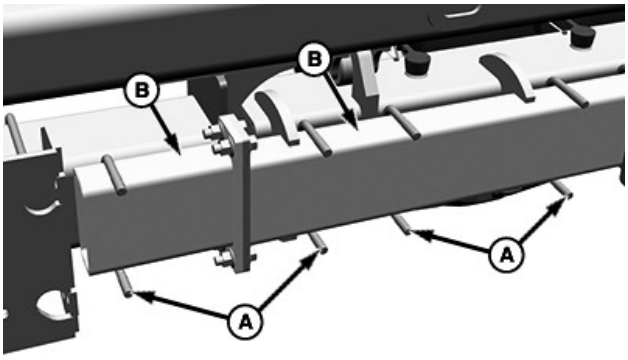
Screws and Nuts (C)—Torque. . . . . 240 N·m (175 lb·ft)

Model	Number of Lines	Spacing cm (in)	Installation Configuration
DB40	14	90 (35.43)	Position 1
	16	76 (29.92)	Position 2
	23	50 (19.68)	Position 2
	23	52.5 (20.67)	Position 2
	25 / 27	45 (17.71)	Position 1
DB50	16	90 (35.43)	Position 1
	20	76 (29.92)	Position 2
	29	52.5 (20.67)	Position 2
	31	50 (19.68)	Position 2
	35	45 (17.71)	Position 1
DB74	24	90 (35.43)	Position 1
	30	76 (29.92)	Position 2
	43	52.5 (20.67)	Position 2
	45	50 (19.68)	Position 2
	48	45 (17.71)	Position 1
	49	45 (17.71)	Position 1

h3ymaet,1692995813430-19-05SEP23

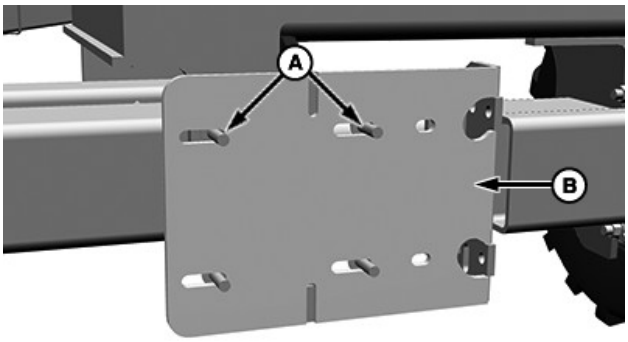
Assemble Row Unit

NOTE: Before assembling the row unit, check if it is necessary to adjust the wheel extensions. Select the correct extension for the used row spacing.



BML012212—UN—29JUL20

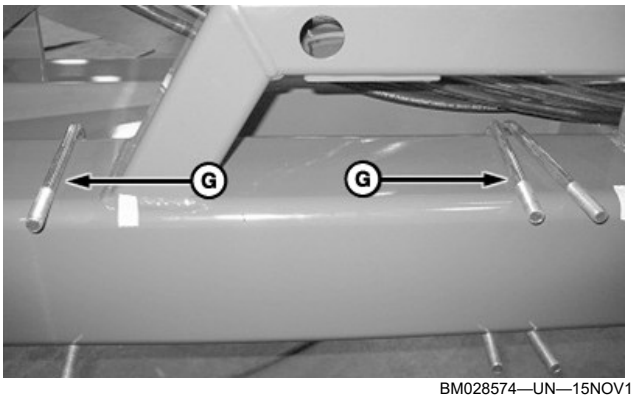
1. Position the U-bolts (A) on both sides of the center frame (B).



BML012210—UN—29JUL20

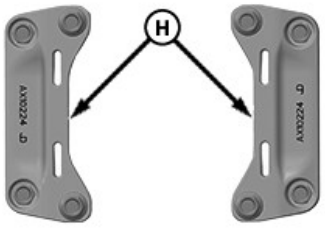
A—Screw (4 used)
B—Bracket

2. Install the screws (A) in the bracket (B).



BM028574—UN—15NOV17

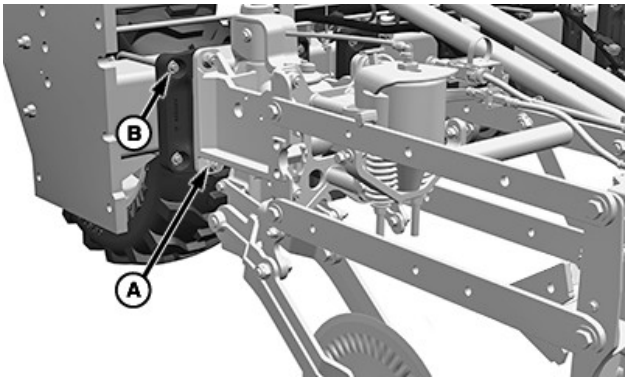
3. Position the U-bolts (G) over the wing frames.



BM028575—UN—13FEB19

4. Position the row unit support (H) on U-bolts.

NOTE: The row unit support is the same for all row spacings, but the way to install the support on the frame is different according to the quantity of row units.



BML014145—UN—05MAY21

A—Row Unit Support Screws (4 used)
B—U-bolts (2 used)

5. Install the row unit assemblies and tighten the row unit support screws (A) and U-bolts (B) to specification.

Specification

Row Unit Support
Screws—Torque. . . . . 200 N·m (147 lb·ft)

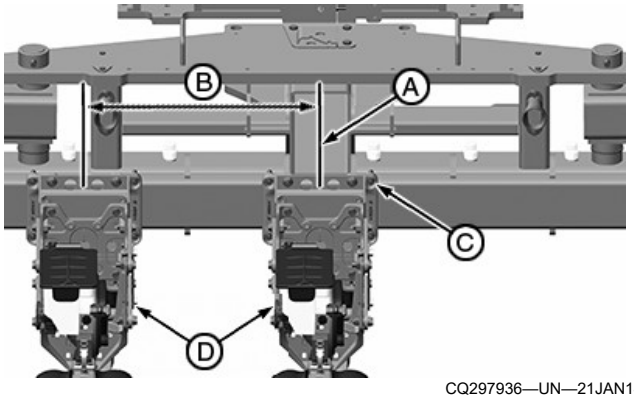
Specification

U-bolts—Torque. . . . . 200 N·m (147 lb·ft)

N8XR12J,00006C1-19-15MAR22

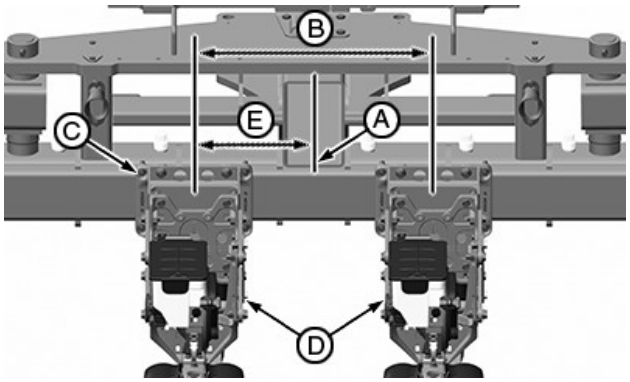
DB40, DB50 and DB74—Adjust Row Units

1. Observing the measures, install or adjust row units.



CQ297936—UN—21JAN14

45 cm, 50 cm, and 52.5 cm Spacing



CQ297935—UN—21JAN14

76 cm and 90 cm Spacing

a. **45 cm (17.71 in), 50 cm (19.68 in), and 52.5 cm (20.67 in) Spacings:** Assemble a row unit on the center of hitch (A). Use it as reference and assemble others observing the spacing (B).

NOTE: For 45 cm (17.71 in) spacing, the left-hand side has one more row unit than the right-hand side.

b. **76 cm (29.92 in) and 90 cm (35.43 in) Spacings:** Use the center of hitch (A) as reference, measure half spacing (E) to left and assemble one row unit. Use it as reference and assemble others.

2. Tighten the nuts (C) to specification.

Specification	
Row Unit Attaching U-Screw Nuts—Torque	200 N·m (147 lb·ft)

The first line on the left-hand side must be as shown:

- DB40 45 cm spacing (27 row units)—Short row unit
- DB40 45 cm spacing (25 row units)—Long row unit
- DB40 50 cm spacing—Short row unit
- DB40 52.5 cm spacing—Short row unit
- DB40 76 cm spacing—Long row unit
- DB50 45 cm spacing—(32 row units)—Long row unit
- DB50 45 cm spacing—(35 row units)—Short row unit
- DB50 50 cm spacing—Short row unit
- DB50 52.5 cm spacing—Long row unit
- DB50 76 cm spacing—Long row unit
- DB74 45 cm spacing—Long row unit
- DB74 50 cm spacing—Short row unit
- DB74 52.5 cm spacing—Short row unit
- DB74 76 cm spacing—Short row unit

NOTE: Check the torque of the screws (C) before operation, after initial 10 hours of use, after 20 hours of use, and after every 100 hours.

3. Connect all vacuum hoses.

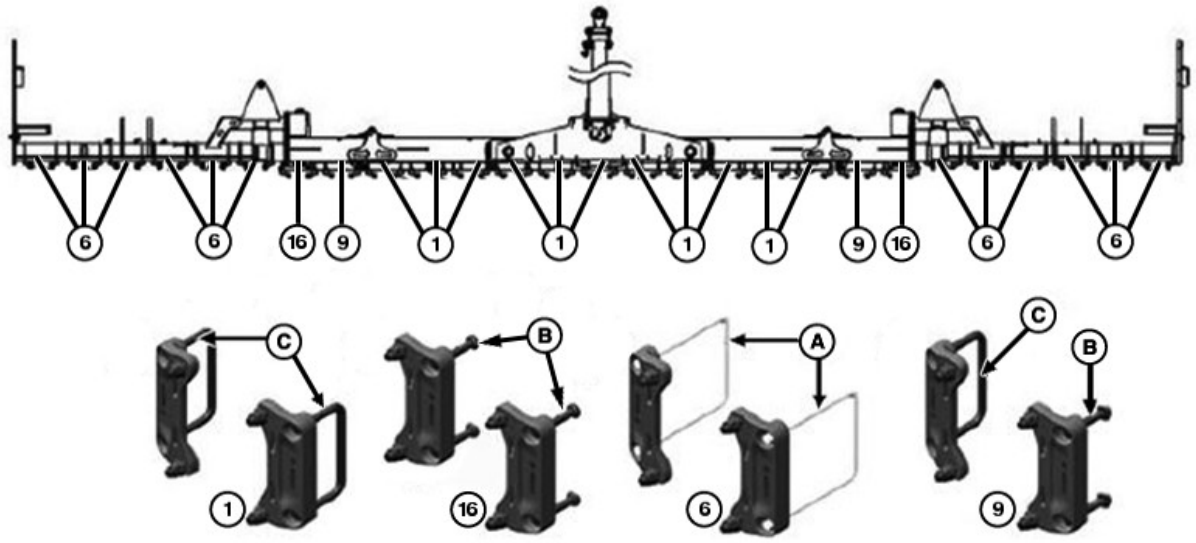
h3ymaet,1693398202751-19-30AUG23

DB40—25/27 Row Units with 45 cm (17.71 in) Spacing

IMPORTANT: For 25 row unit configuration, remove one row unit from the end of the right-hand side wing and one row unit from the end of the left-hand side wing of the machine with this configuration.

IMPORTANT: For 90 cm (35.43 in) spacing, use the same configuration as for 45 cm (17.71 in) spacing, but remove alternating row units only.

NOTE: For this spacing configuration, use the ballast bracket to the outside of the wing frame on both sides of machine. (See Available Spacing Configuration in this section.)

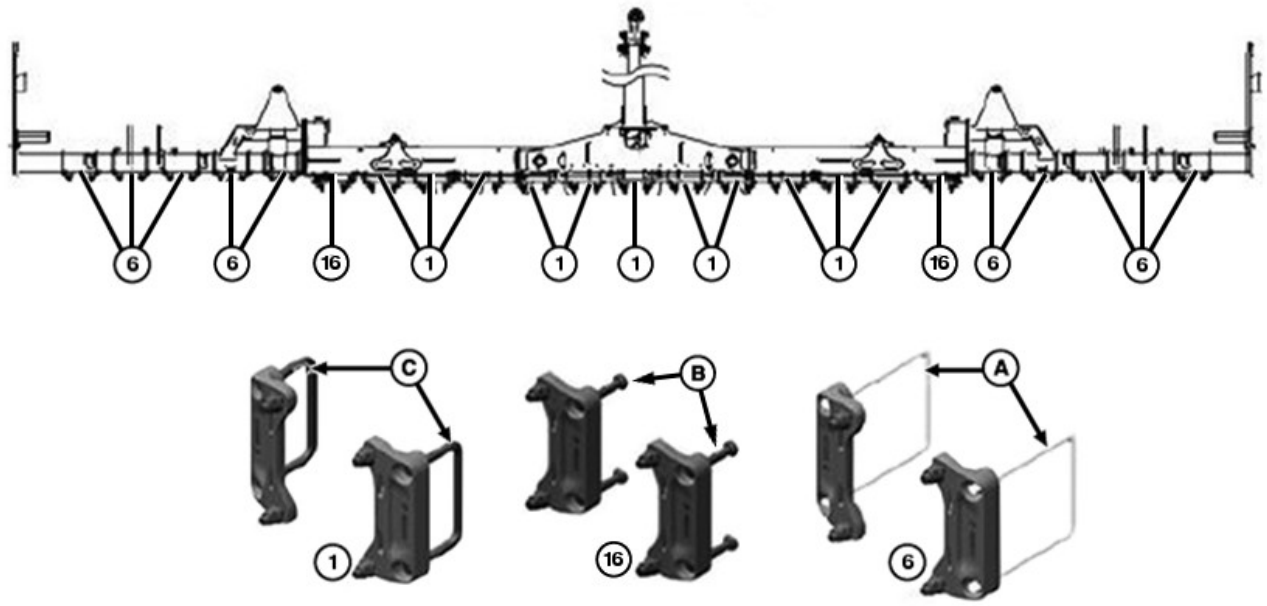


BML012214—UN—31JUL20

A—Long U-bolt
B—Hex Bolt
C—Short U-bolt

CR84017,000083A-19-26MAY21

DB40—23 Row Units with 50 cm (19.68 in) Spacing

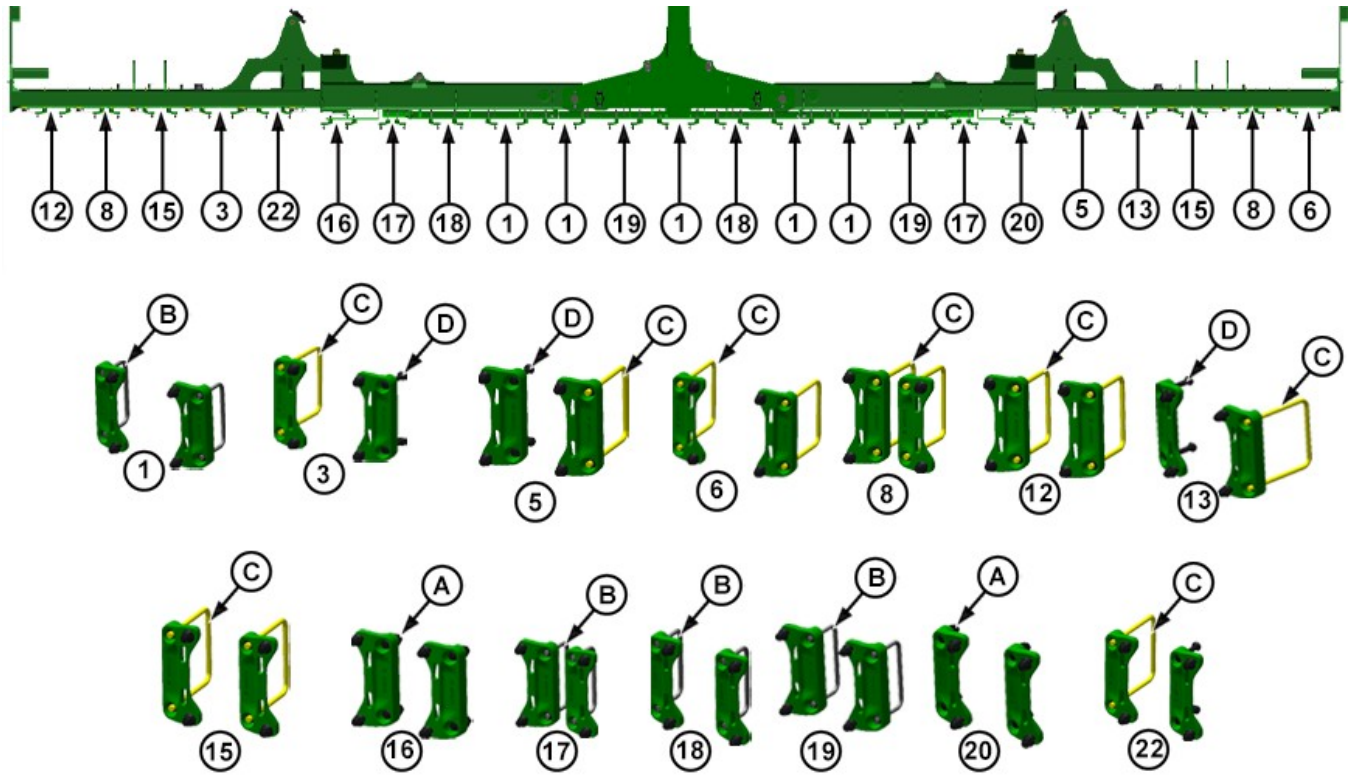


BML012215—UN—31JUL20

A—Long U-bolt
B—Hex Bolt
C—Short U-bolt

CR84017,000083B-19-05MAY21

DB40—23 Row Units with 52.5 cm (20.67 in) Spacing



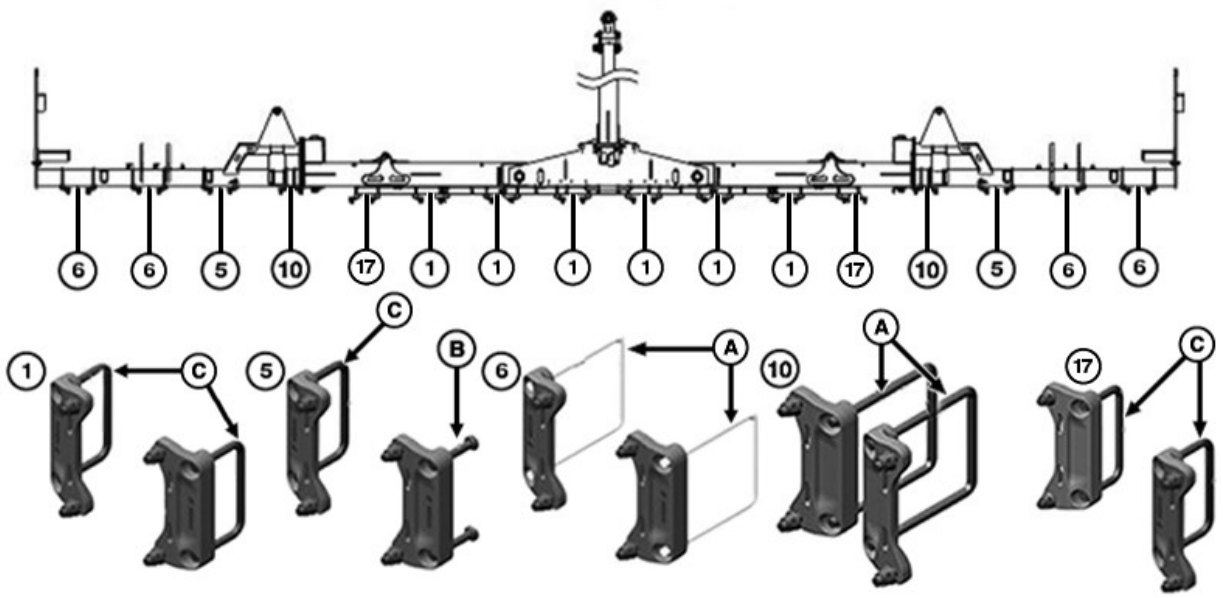
BML047222—UN—05SEP23

DB40—23 Row Units with 52.5 cm (20.67 in) Spacing

A—Hex Screw
B—Short U-Screw
C—Long U-Screw
D—Round Head Screw

h3ymaet,1693316756293-19-29AUG23

DB40—16 Row Units with 76 cm (29.92 in) Spacing

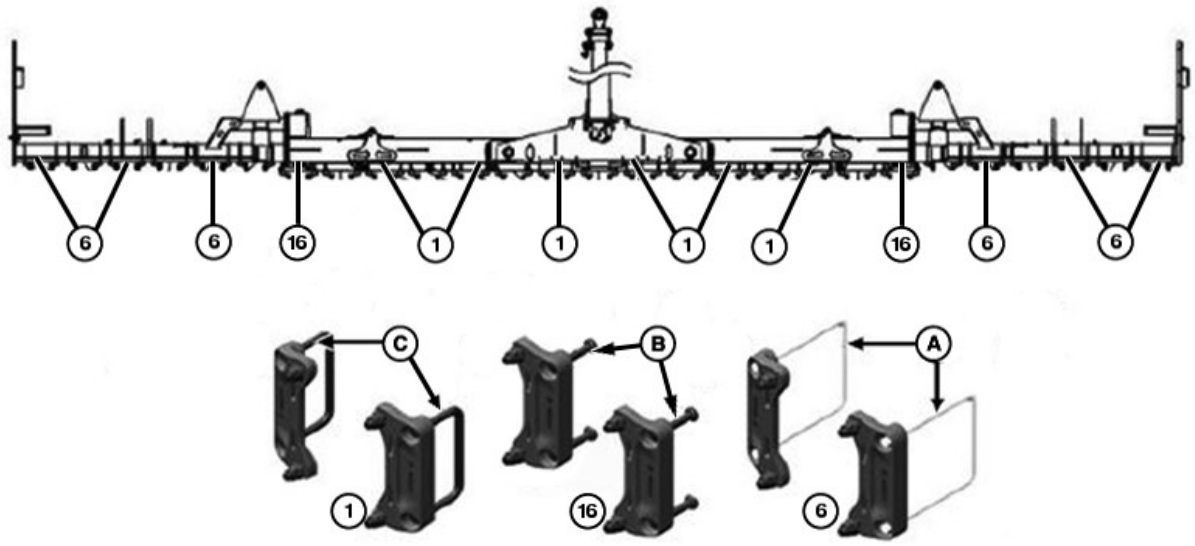


BML012216—UN—31JUL20

A—Long U-bolt
B—Special Bolt
C—Short U-bolt

CR84017,000083C-19-05MAY21

DB40—14 Row Units with 90 cm (35.43 in) Spacing

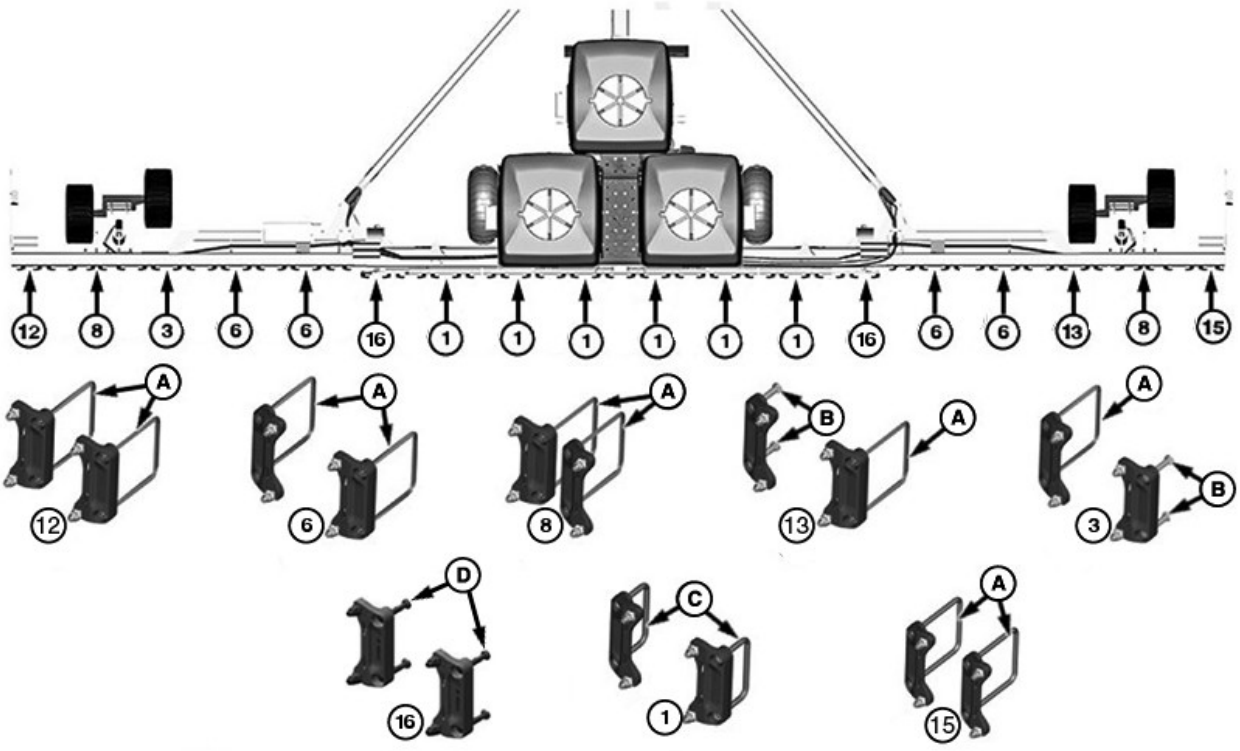


BML014152—UN—06MAY21

A—Long U-bolt
B—Hex Bolt
C—Short U-bolt

CR84017,0000859-19-06MAY21

DB50—18 Row Units with 90 cm (35.43 in) Spacing



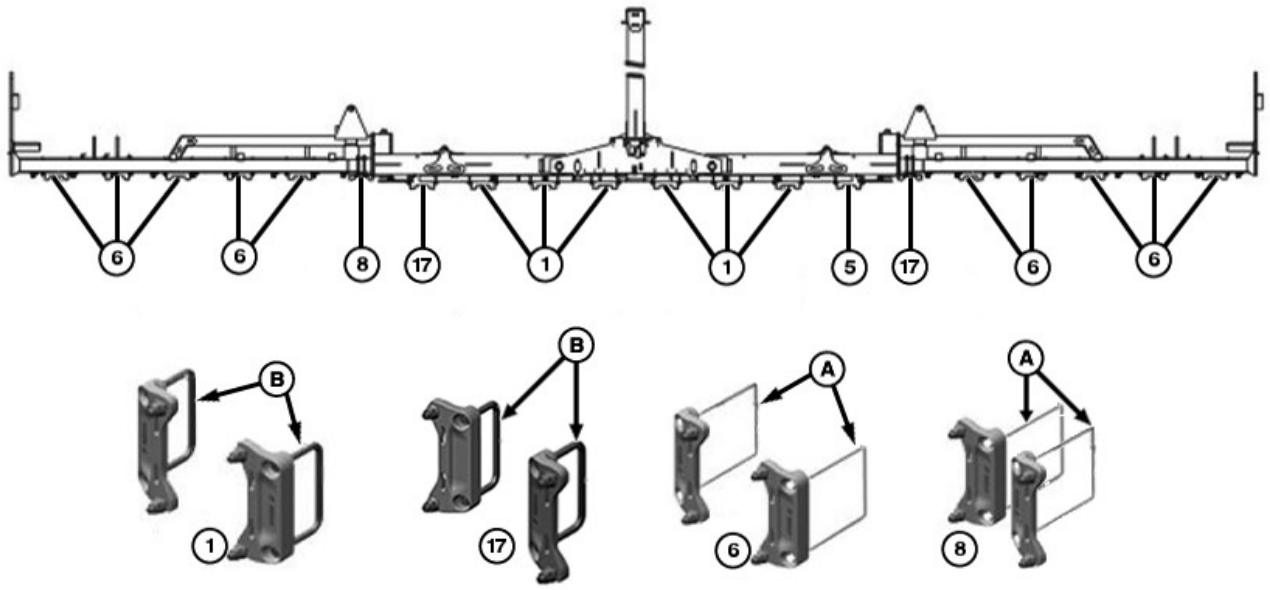
BML014153—UN—06MAY21

A—Long U-bolt
B—Special Bolt

C—Short U-bolt **D—Hex Bolt**

CR84017,000085A-19-06MAY21

DB50—20 Row Units with 76 cm (29.92 in) Spacing

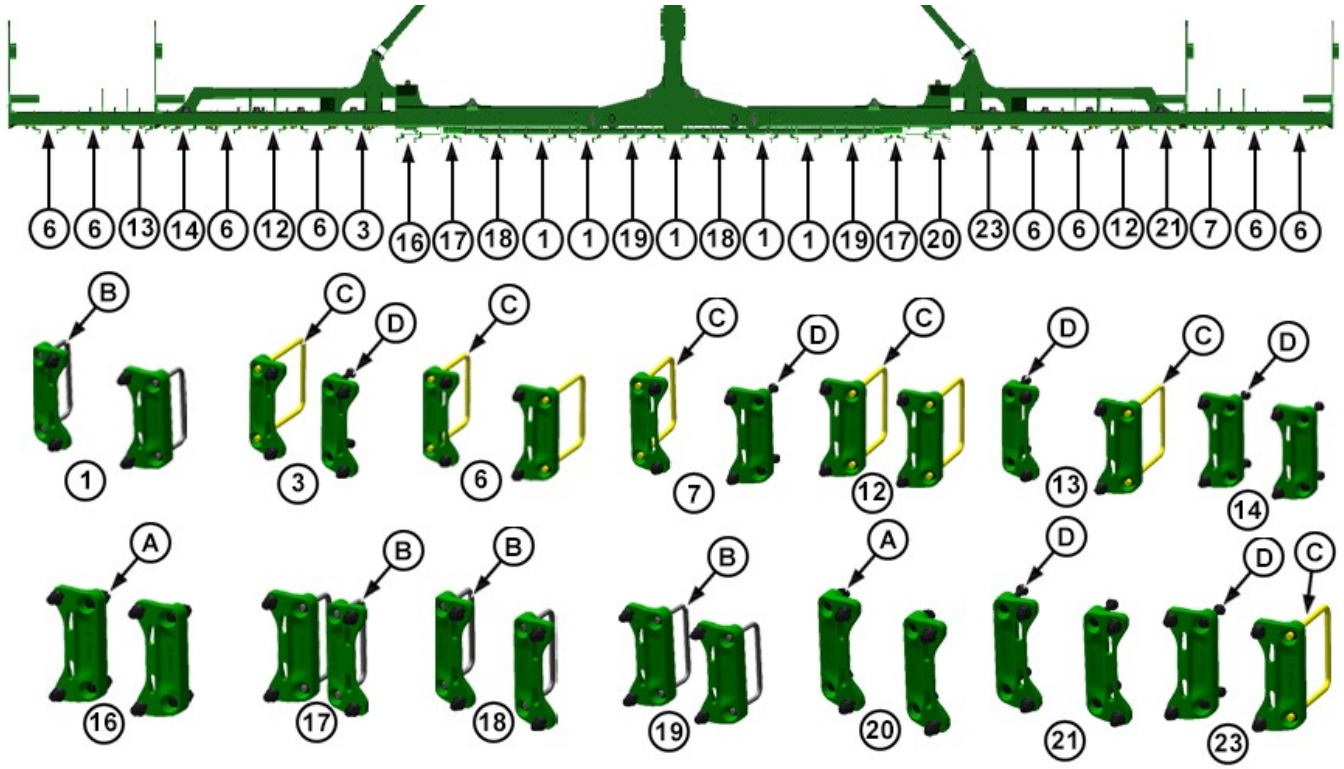


BML012217—UN—31JUL20

A—Long U-Bolt **B—Short U-Bolt**

CR84017,000083F-19-05MAY21

DB50—29 Row Units with 52.5 cm (20.67 in) Spacing

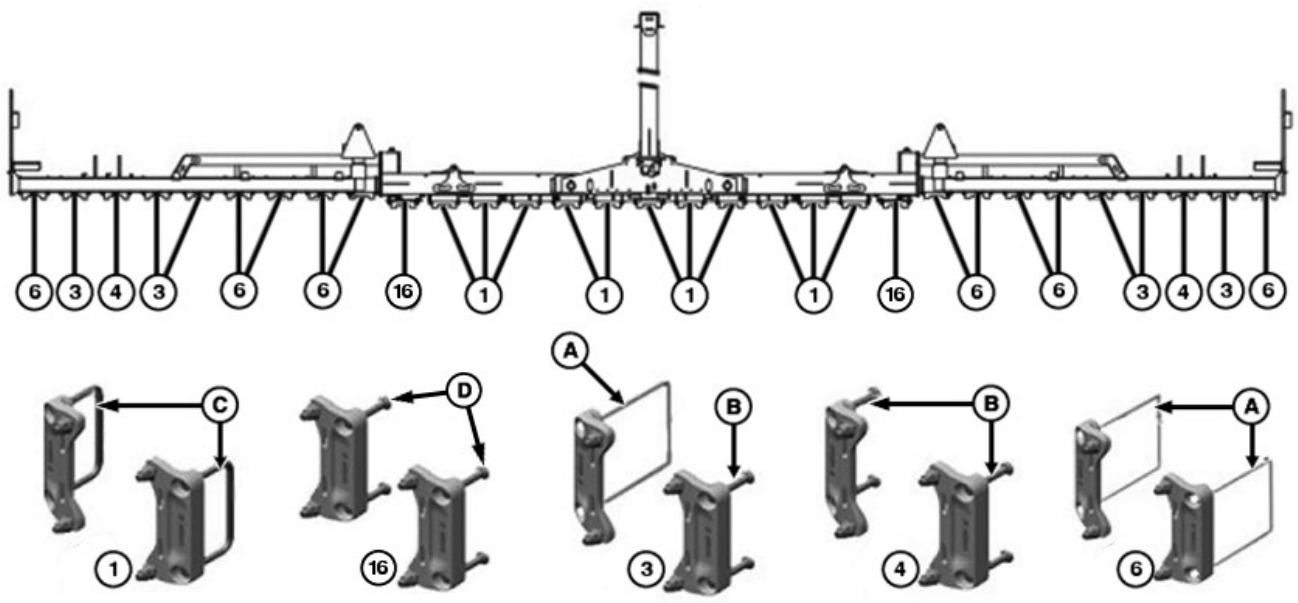


BML047221—UN—05SEP23

A—Hex Screw
B—Short U-Screw
C—Long U-Screw
D—Round Head Screw

h3ymaet,1692970636430-19-28AUG23

DB50—31 Row Units with 50 cm (19.68 in) Spacing

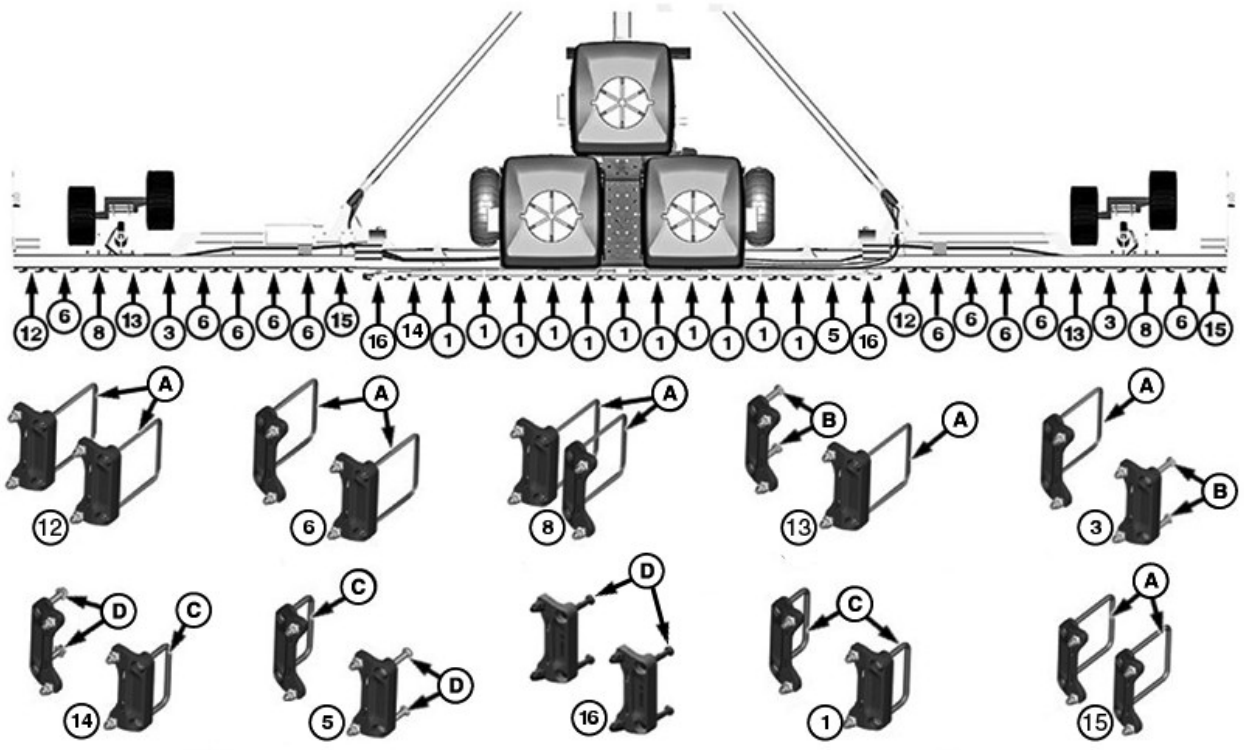


BML012218—UN—31JUL20

A—Long U-bolt
B—Special Bolt
C—Short U-bolt
D—Hex Bolt

CR84017,0000840-19-05MAY21

DB50—35 Row Units with 45 cm (17.71 in) Spacing

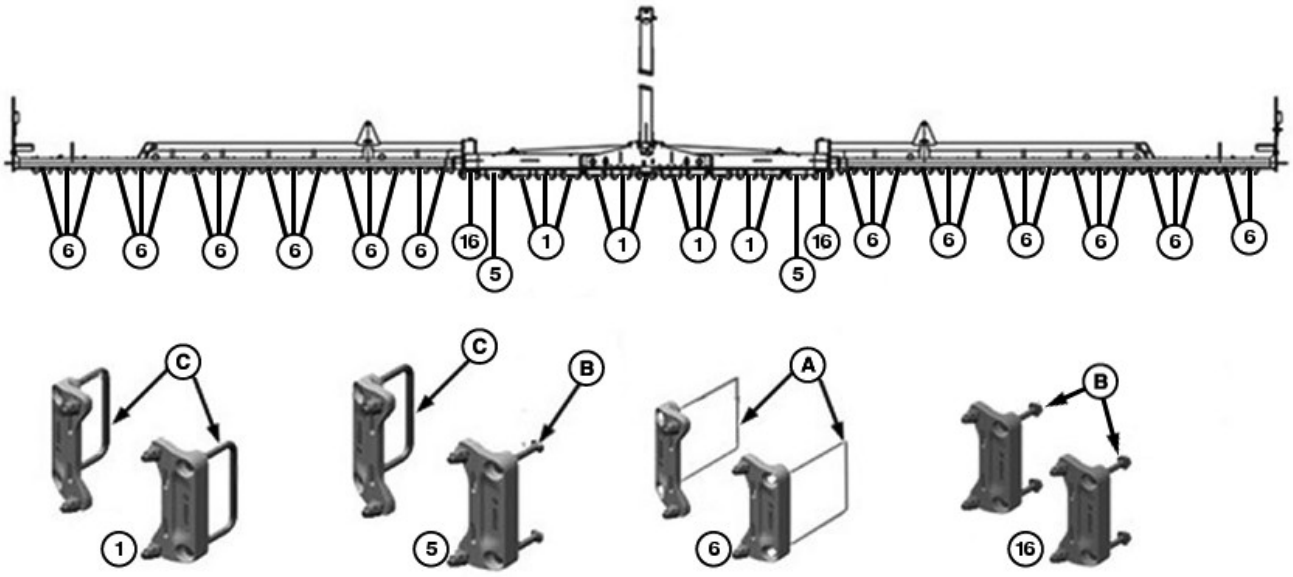


BML012219—UN—31JUL20

A—Long U-bolt
B—Special Bolt
C—Short U-bolt
D—Hex Bolt

CR84017,0000841-19-05MAY21

DB74—49 Row Units with 45 cm (17.71 in) Spacing



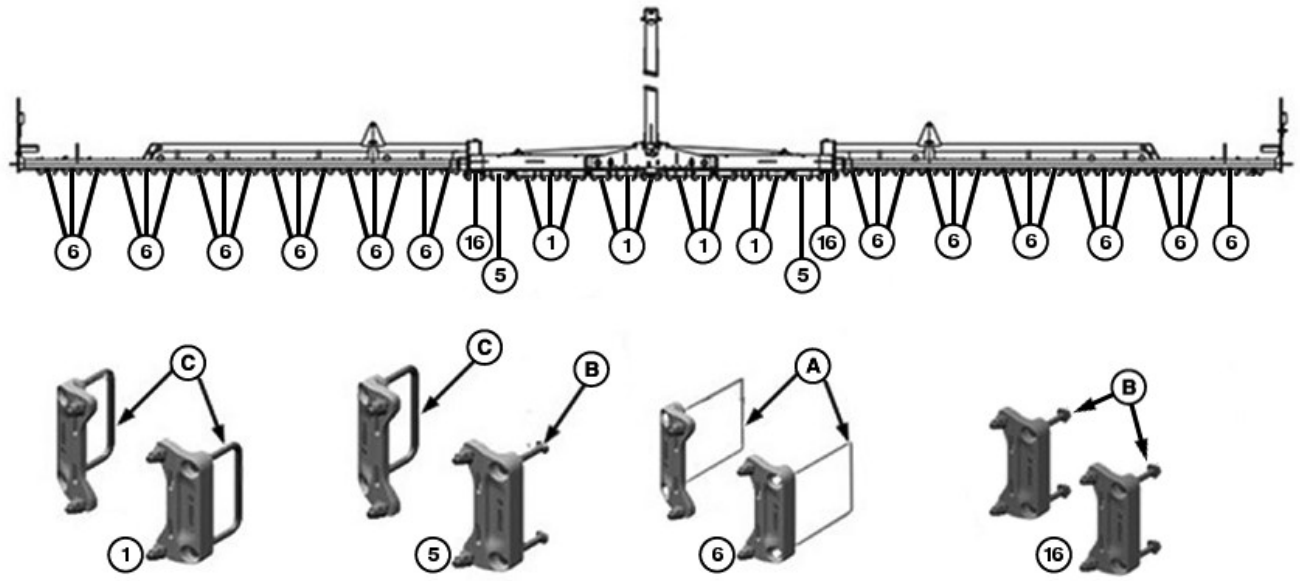
BML012220—UN—31JUL20

A—Long U-Bolt
B—Hex Bolt

C—Short U-Short

CR84017,000085C-19-06MAY21

DB74—48 Row Units with 45 cm (17.71 in) Spacing

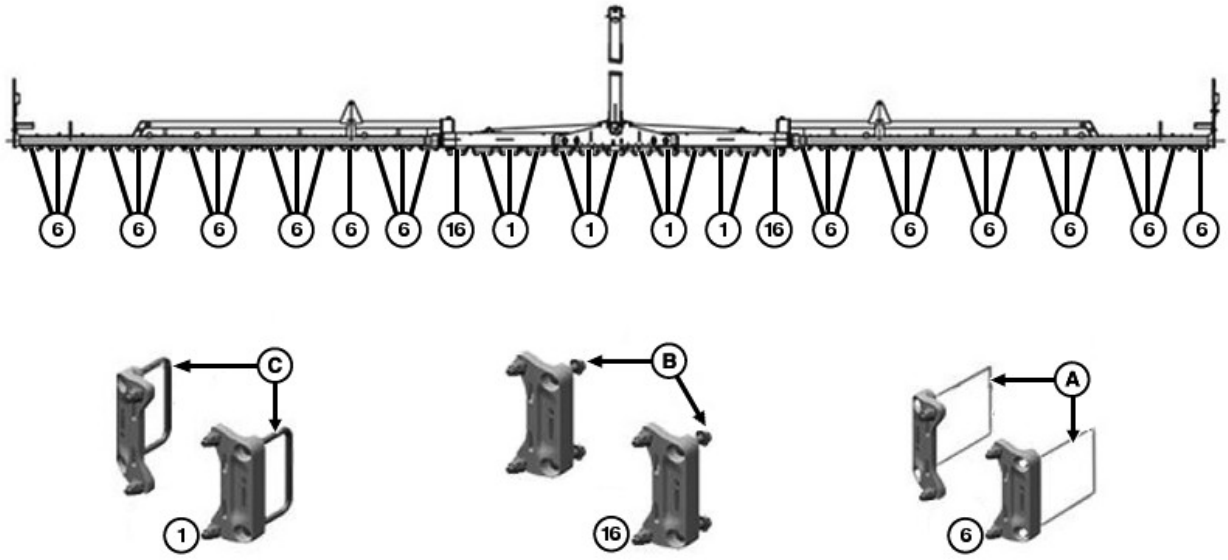


BML012221—UN—31JUL20

A—Long U-bolt
B—Hex Bolt
C—Short U-bolt

CR84017,0000843-19-05MAY21

DB74—45 Row Units with 50 cm (19.68 in) Spacing

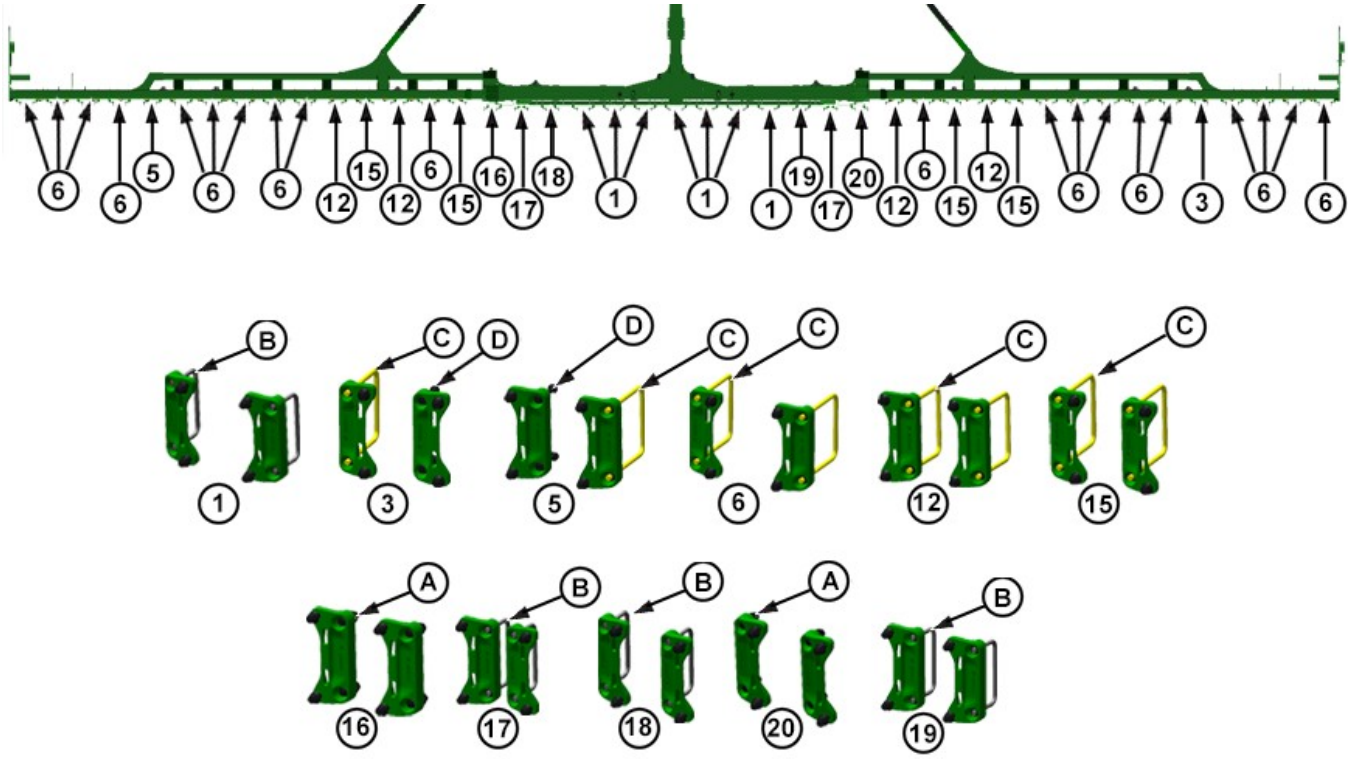


BML012222—UN—31JUL20

A—Long U-Bolt
B—Hex Bolt
C—Short U-bolt

CR84017,0000844-19-05MAY21

DB74—43 Row Units with 52.5 cm (20.67 in) Spacing

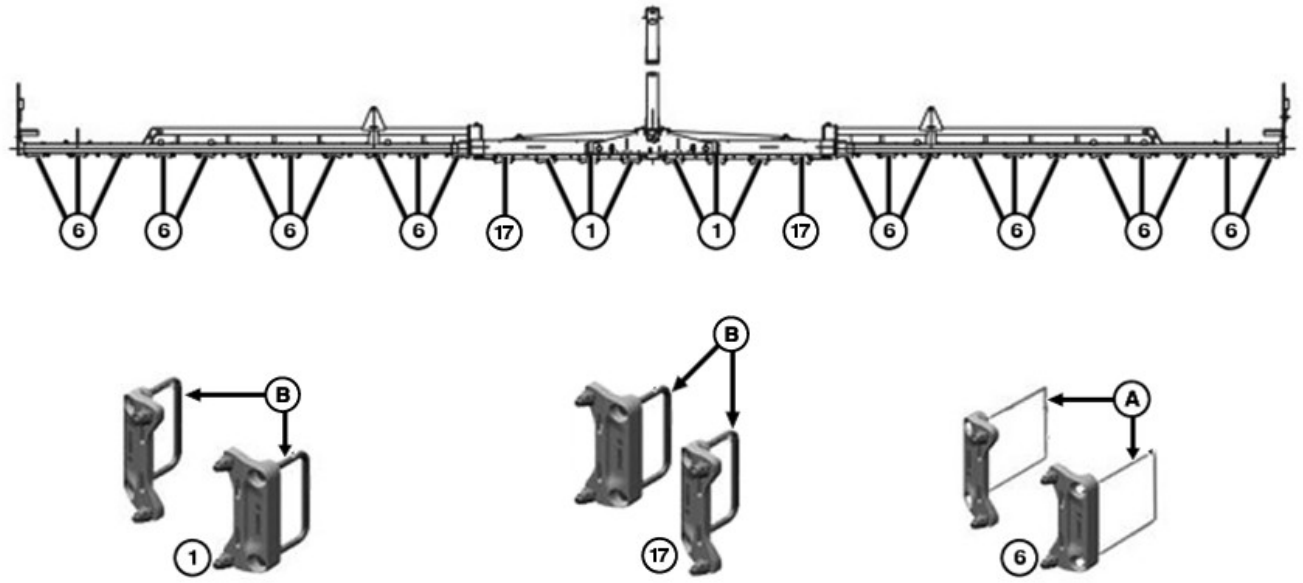


BML047223—UN—05SEP23

A—Hex Screw
B—Short U-Screw
C—Long U-Short
D—Round Head Screw

h3ymaet,1693331564860-19-29AUG23

DB74—30 Row Units with 76 cm (29.92 in) Spacing



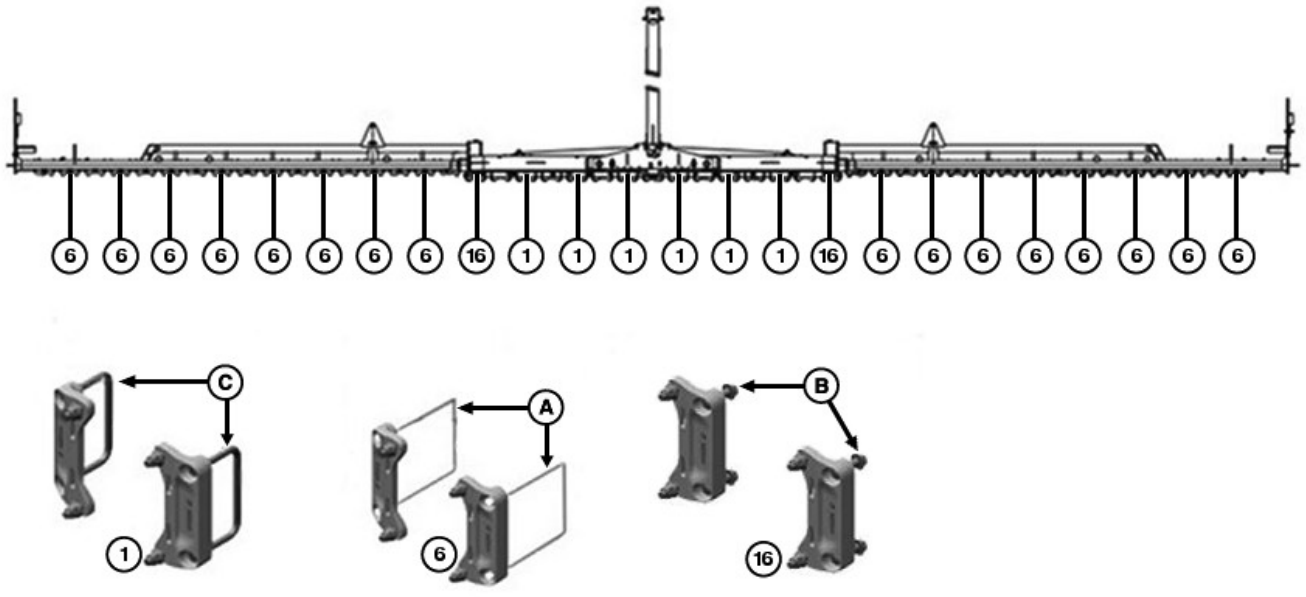
BML012223—UN—31JUL20

A—Long U-Bolt

B—Short U-Bolt

N8XR12J,00006C2-19-30MAR22

DB74—24 Row Units with 90 cm (35.43 in) Spacing



BML012224—UN—31JUL20

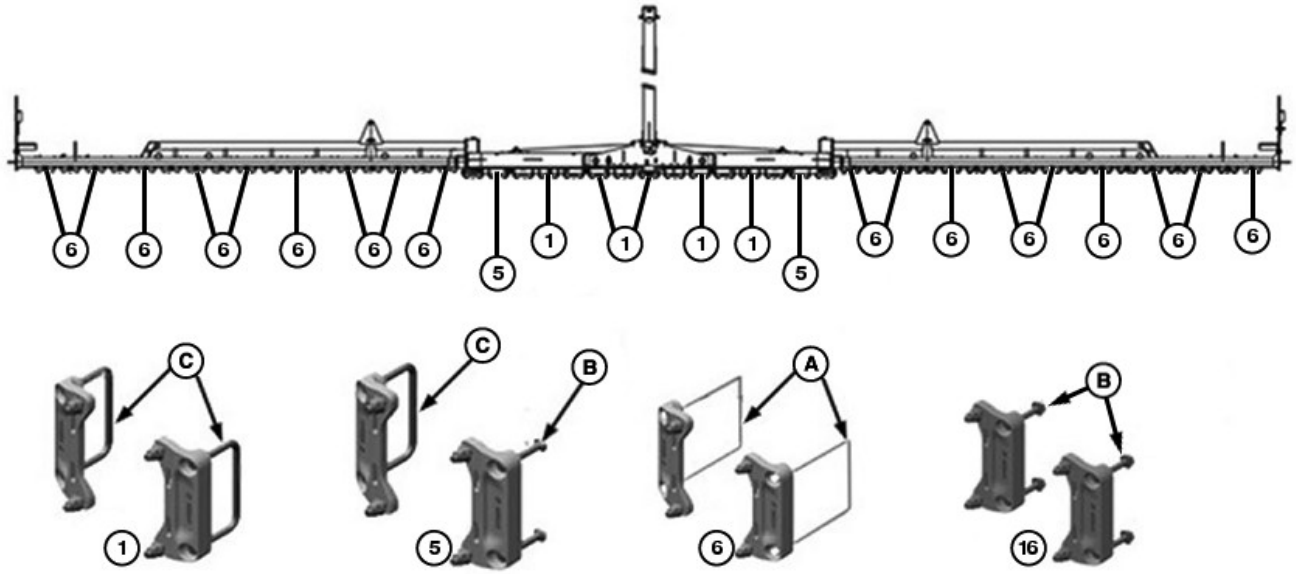
A—Long U-Bolt

B—Hex Bolt

C—Short U-Bolt

CR84017,0000846-19-05MAY21

DB74—25 Row Units with 90 cm (35.43 in) Spacing

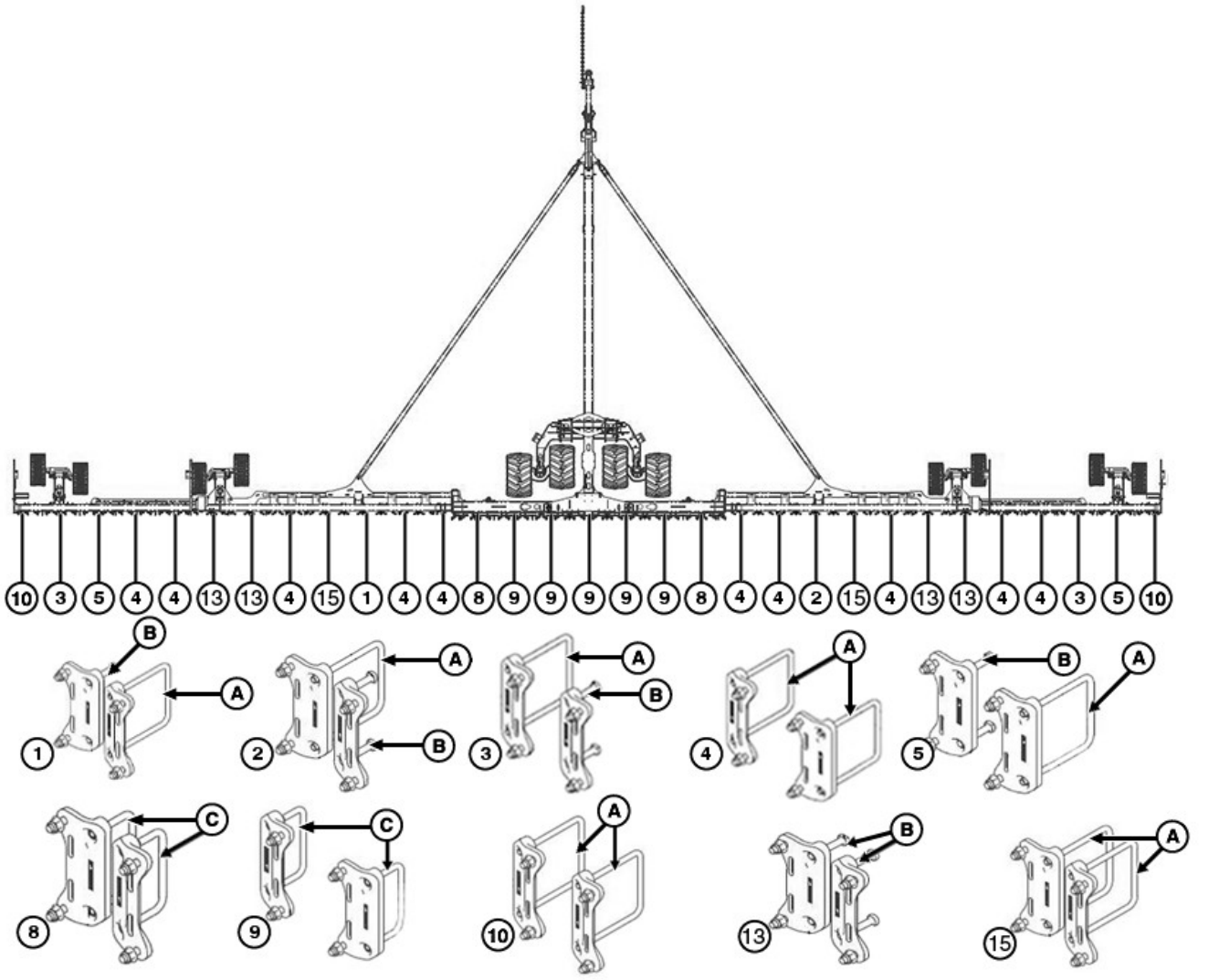


BML014151—UN—06MAY21

A—Long U-Bolt
B—Hex Bolt
C—Short U-Short

CR84017,000085B-19-06MAY21

DB90—31 Row Units with 90 cm (35.43 in) Spacing



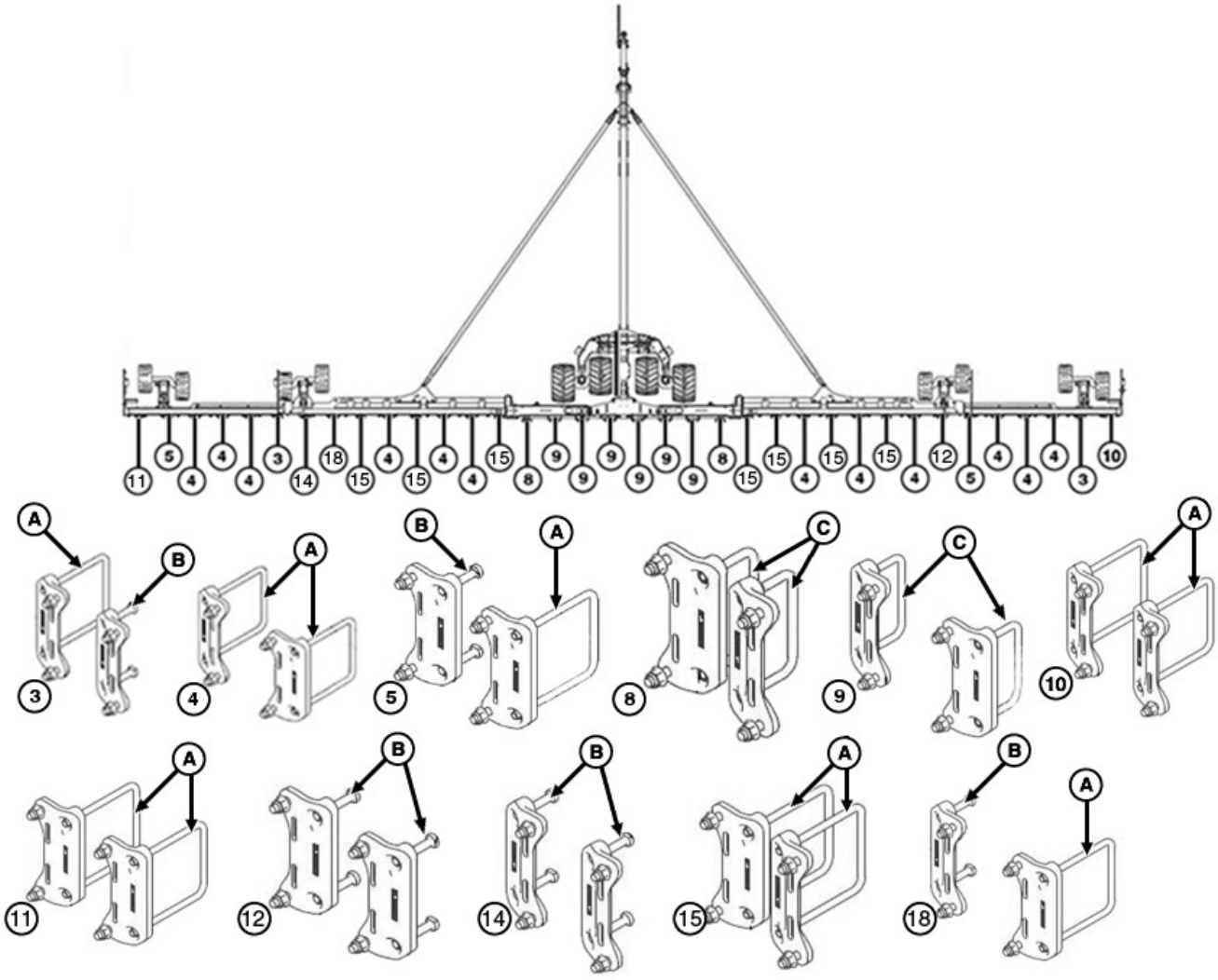
BM030155—UN—14MAR19

DB90—31 Row Units with 90 cm (35.43 in) Spacing

A—Long U-Bolt
B—Special Bolt
C—Short U-Bolt

CR84017,0000848-19-27APR21

DB90—36 Row Units with 76 cm (29.92 in) Spacing



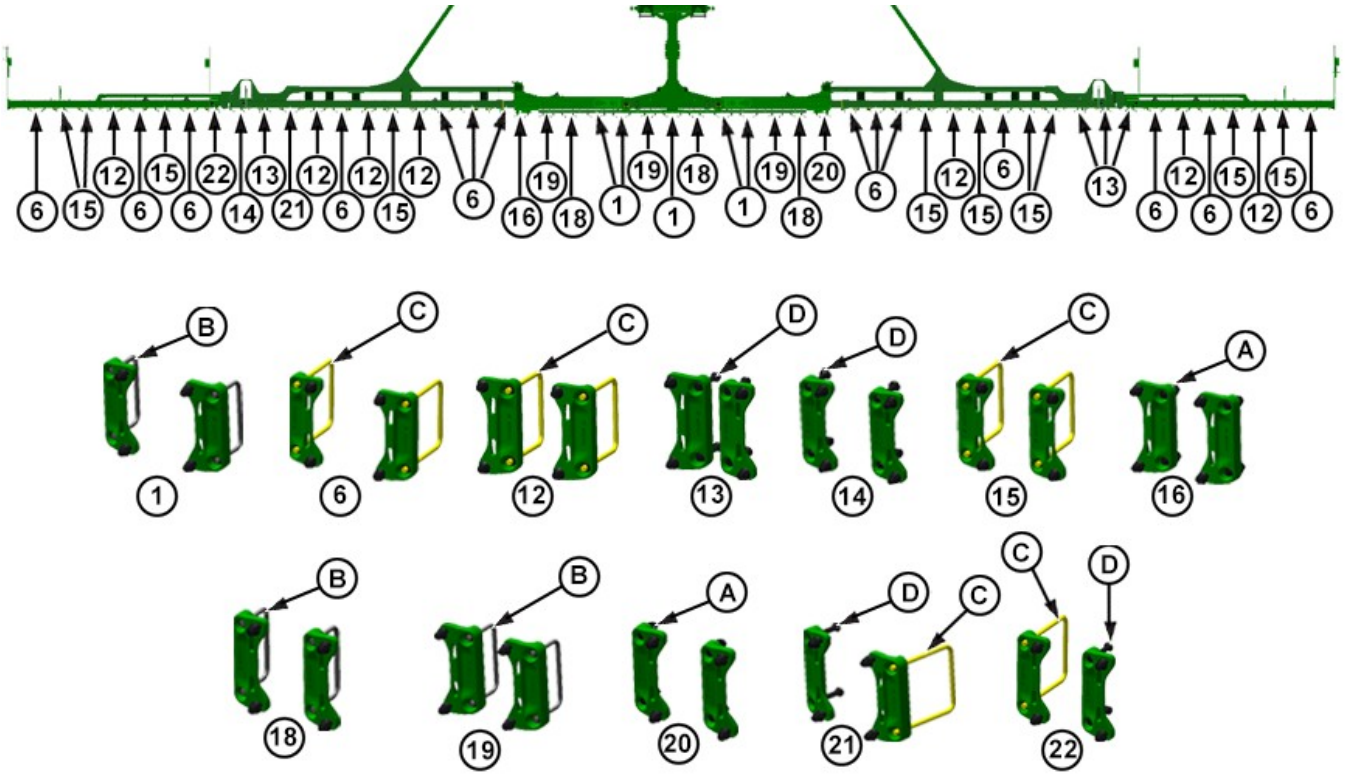
BM030152—UN—14MAR19

DB90—36 Row Units with 76 cm (29.92 in) Spacing

A—Long U-Bolt
B—Special Bolt
C—Short U- Bolt

CR84017,0000849-19-27APR21

DB90—51 Row Units with 52.5 cm (20.67 in) Spacing

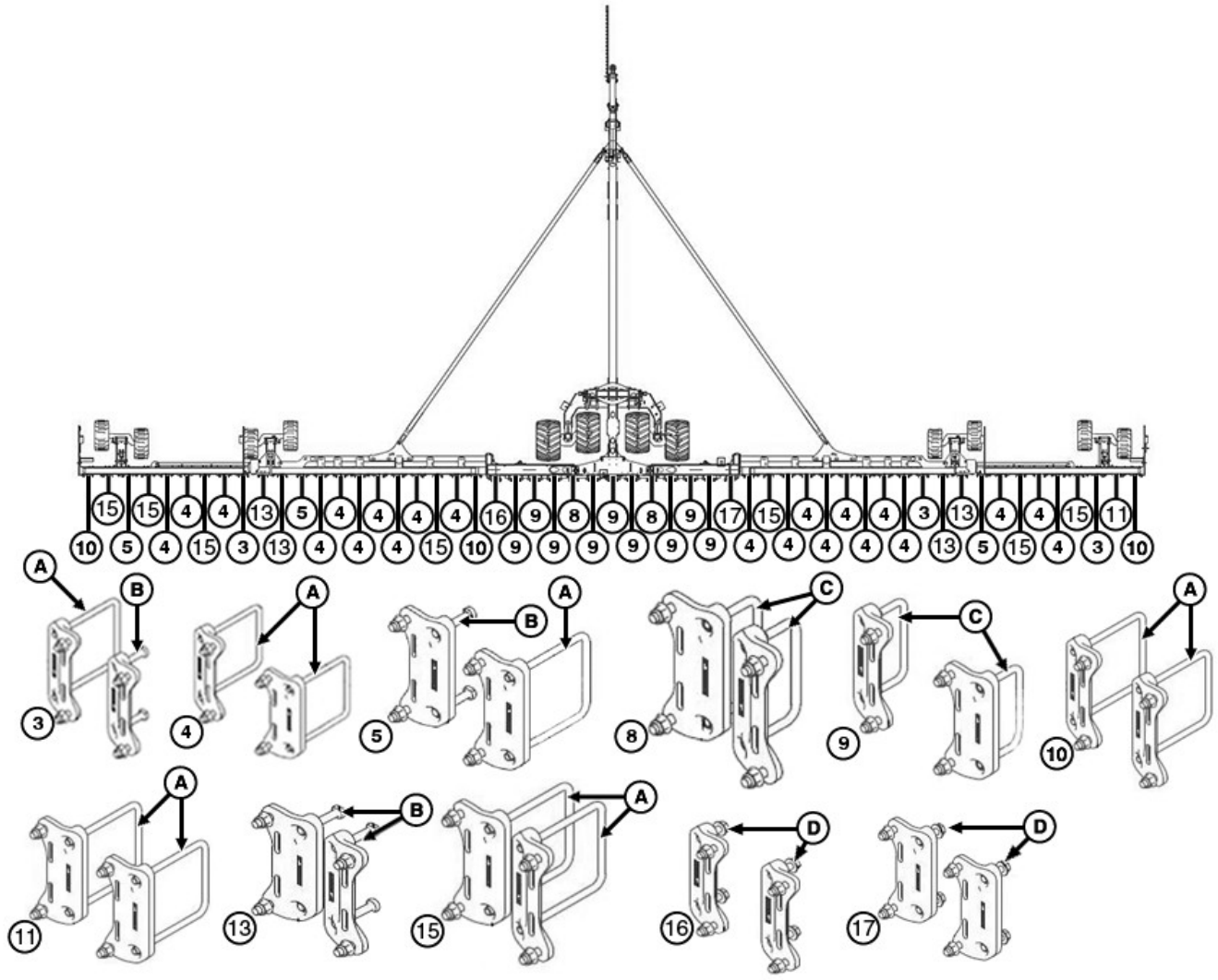


BML047224—UN—05SEP23

A—Hex Screw
B—Short U-Screw
C—Long U-Screw
D—Round Head Screw

h3ymaet,1696332930107-19-03OCT23

DB90—55 Row Units with 50 cm (19.68 in) Spacing



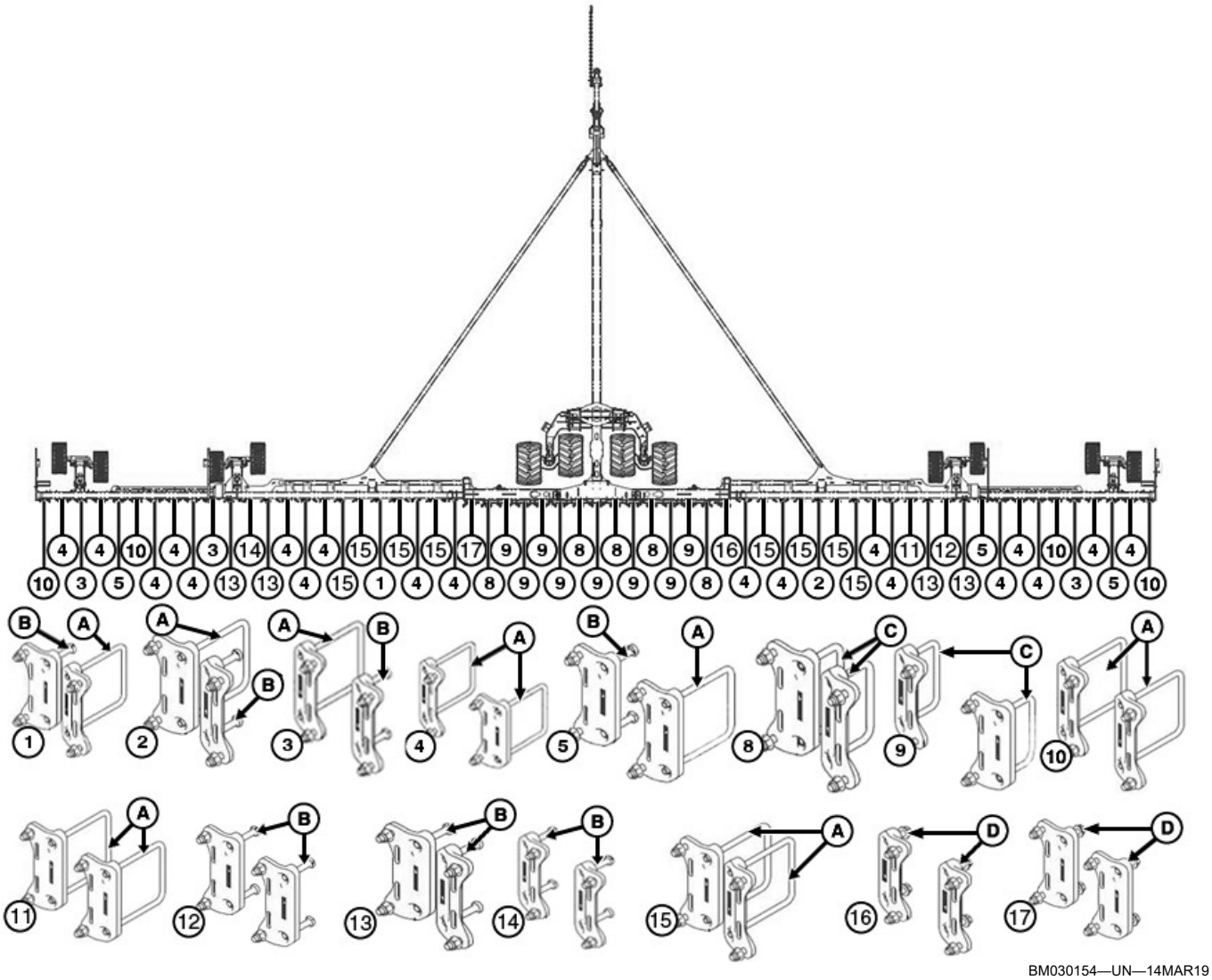
BM030153—UN—14MAR19

DB90—55 Row Units with 50 cm (19.68 in) Spacing

A—Long U-Bolt
B—Special Bolt
C—Short U-Bolt
D—Hex Bolt

CR84017,000084A-19-27APR21

DB90—61 Row Units with 45 cm (17.71 in) Spacing



BM030154—UN—14MAR19

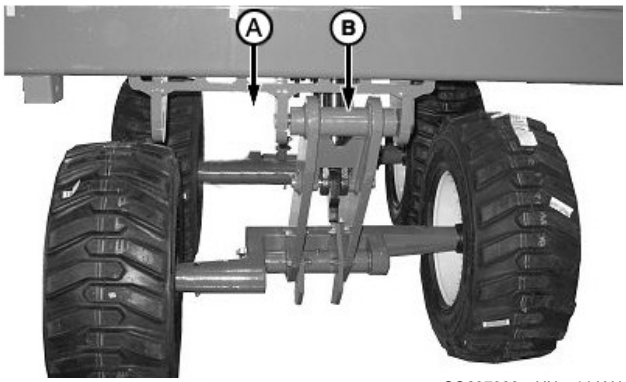
DB90—61 Row Units with 45 cm (17.71 in) Spacing

A—Long U-Bolt
B—Special Bolt
C—Short U-Bolt
D—Hex Bolt

CR84017,000084B-19-27APR21

Position of Wing Wheels—DB40 and DB50

NOTE: Prevent procedure misunderstanding. The height sensor mentioned in the steps bellow must only be considered for MaxEmerge™ 5 planters. For MaxEmerge™ 5e and ExactEmerge™ planters, the sensor is located on the center wheels.



CQ297930—UN—14JAN14

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ExactEmerge is a trademark of Deere & Company

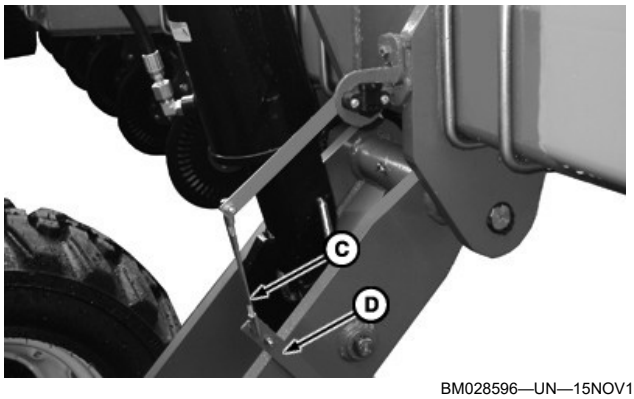
A—76 cm (29.92 in) Spacing Wing Wheel Position
B—45 cm (17.71 in), 50 cm (19.68 in), or 90 cm (35.43 in) Spacing Wing Wheel Position

The wing wheels must be moved from the position (B) to position (A) on the frame only if the planter has a row spacing of 76 cm (29.92 in).

1. Unfold the machine.
2. Support the wing wheels: use suitable supports.

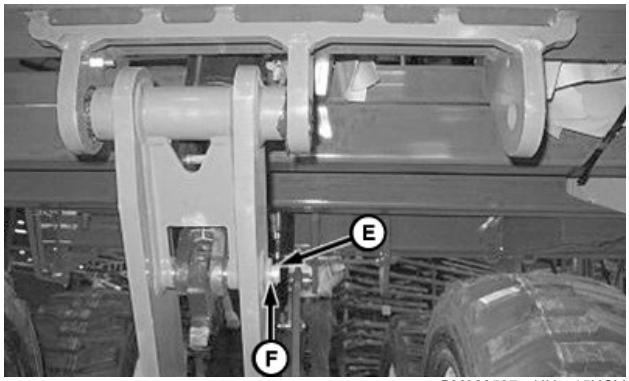
NOTE: In the following steps, the procedure for the left-hand side wing wheels is shown. The right-hand side is similar.

The height sensor is located only on the left-hand side wing wheels.



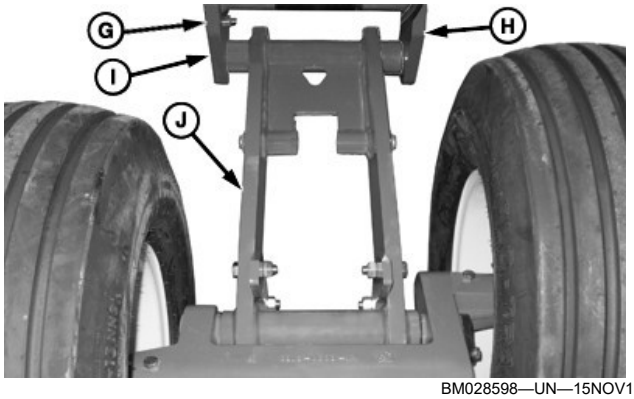
BM028596—UN—15NOV17
Height Sensor—Only for MaxEmerge™ 5 Planters

3. Disconnect the rod (C) from the bracket (D).



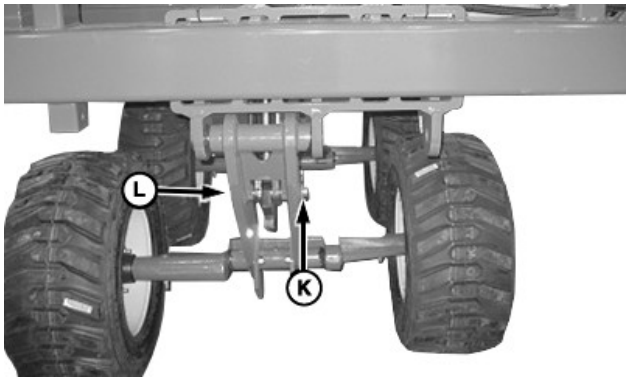
BM028597—UN—15NOV17

4. Remove the snap ring (E) and the pin (F) from the lift cylinder.
5. Tie up the lift cylinder.



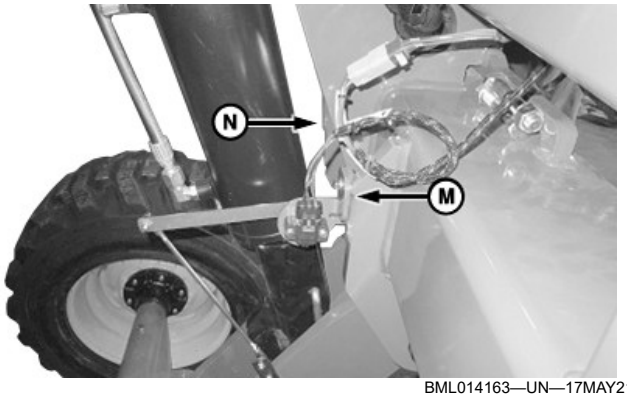
BM028598—UN—15NOV17

6. Remove the carriage screw and nut (G).
7. Support the frame (J).
8. Remove the pin (I) and lower the frame out of the brackets (H).
9. Roll the frame assembly under the second set of brackets. Install the pin (I) and the carriage screw and nut (G).
10. Move the lift cylinder to the second mounting bracket.



BML014162—UN—17MAY21

11. Install the lift cylinder to the frame of the wing wheels with the pin (L) and snap ring (K).



BML014163—UN—17MAY21
Height Sensor—Only for MaxEmerge™ 5 Planters

12. Move the height sensor (M) to the location (N).

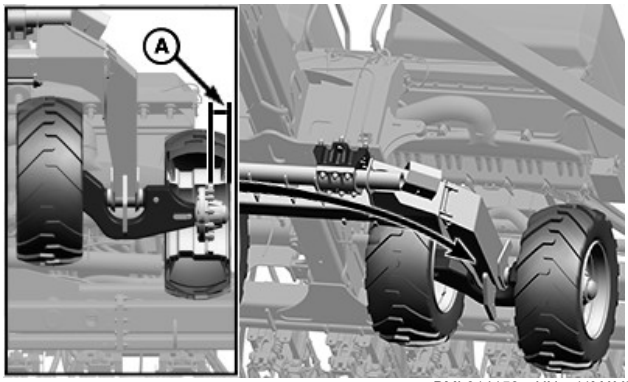
NOTE: Connect the sensor rod to the bracket on the frame of the wheels.

NOTE: The connection of the height sensor to the electrical system is done when the backbone harness is complete installed. See Install Backbone Harnesses in this section.

13. Raise the machine and remove the supports previously used.

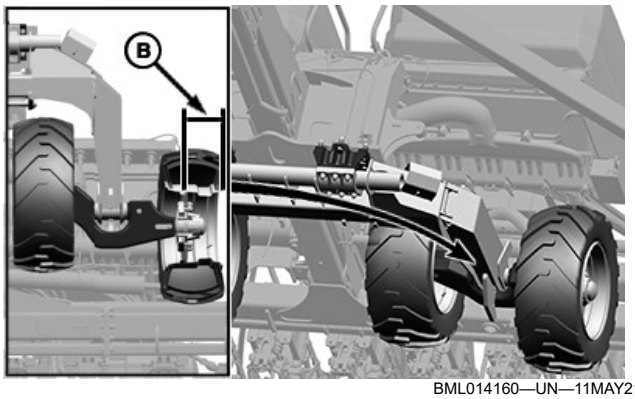
CR84017,000085F-19-17MAY21

Wheel Adjustment Position



BML014158—UN—11MAY21

Planters with 45 cm (17.72 in) and 76 cm (29.92 in) Row Spacings



BML014160—UN—11MAY21

Planters with 50 cm (19.69 in) and 76 cm (29.92 in) and Row Spacings

IMPORTANT: Make sure that the rotation direction of the tires is correct. The planter tires must have the opposite rotation direction to the tractor wheels.

1. If the planter has a row spacing of 45 cm (17.72 in) or 76 cm (29.92 in), the shortest distance (A) of the wheels must be facing the outside of the machine.
2. If the planter has a row spacing of 50 cm (19.69 in) or 76 cm (29.92 in), the largest distance (B) of the wheels must be facing the outside of the machine.

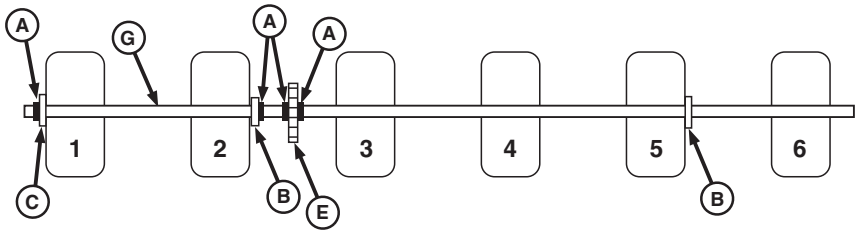
NOTE: Install the tires in order to avoid interference with the support of the wheels.

NOTE: Perform the same adjustment for both outer center wheels.

CR84017,0000860-19-14MAY21

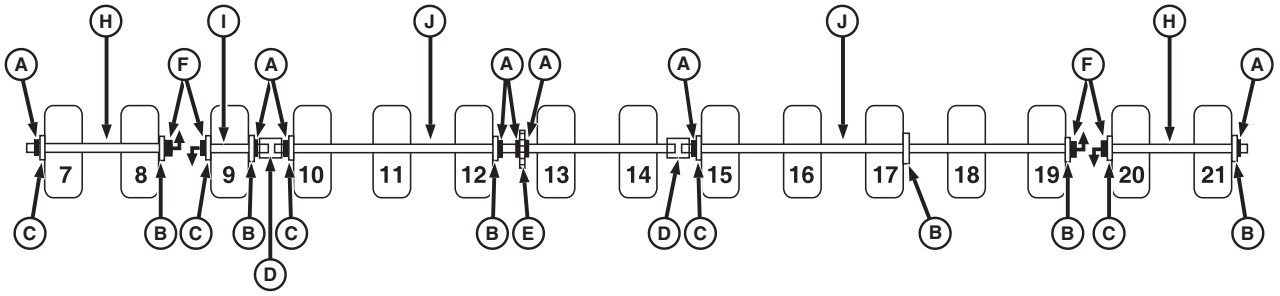
Hydraulic Drive System (VRD)—Schematics—Only for MaxEmerge™ 5

Drive System Installation—DB40 (27R with 45 cm [17.71 in] Spacing)



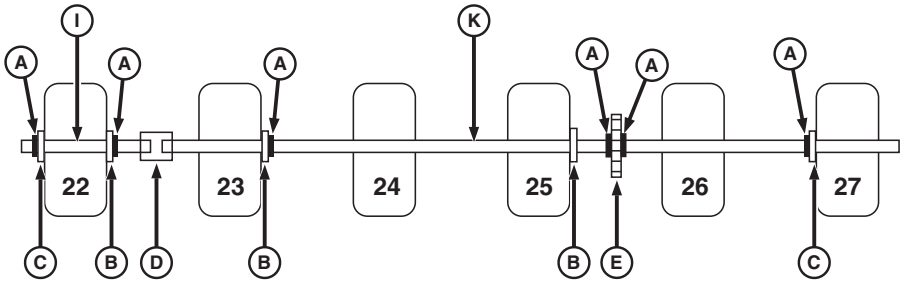
BML008170—UN—06AUG21

Left-Hand Side Wing Drive System



BML008171—UN—21AUG21

Center Frame Drive System



BML008172—UN—21AUG21

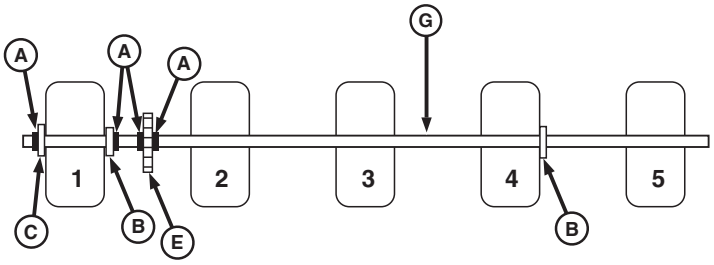
Right-Hand Side Wing Drive System

A—Buffer (18 used)
B—Bearing on Right of Row Frame (11 used)
C—Bearing on Left of Row Frame (8 used)
D—Hex Drive Coupler (3 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)
G—245.0 cm (96.5 in) Shaft
H—87.5 cm (34.4 in) Shaft (2 used)
I—42.0 cm (16.5 in) Shaft (2 used)
J—222.5 cm (87.6 in) Shaft (2 used)
K—207.5 cm (81.7 in) Shaft

NOTE: Actual row units have been removed for clarity.

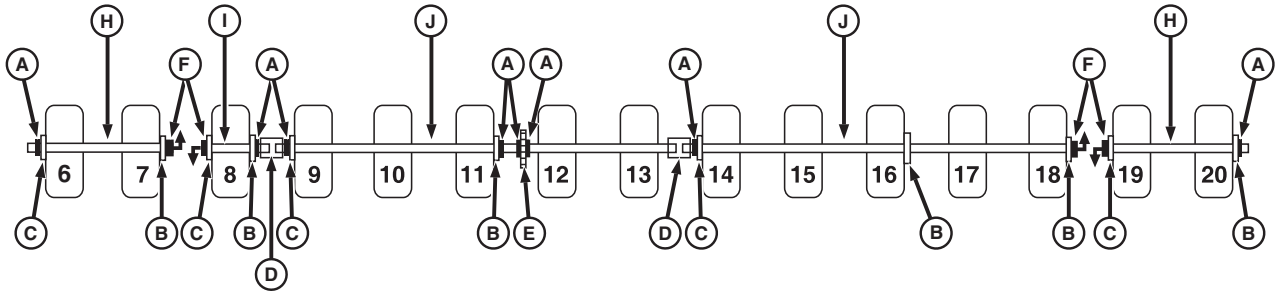
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB40 (25R with 45 cm [17.71 in] Spacing)



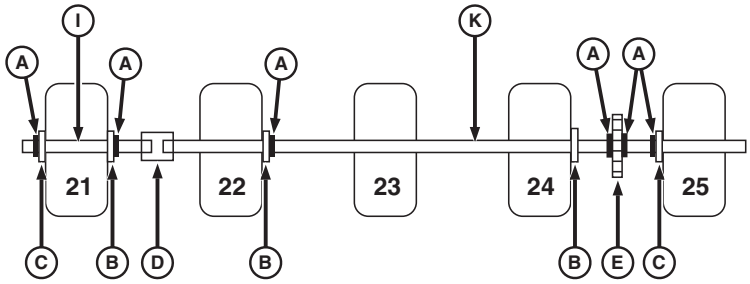
BML008173—UN—06AUG21

Left-Hand Side Wing Drive System



BML008174—UN—21AUG21

Center Frame Drive System



BML008175—UN—21AUG21

Right-Hand Side Wing Drive System

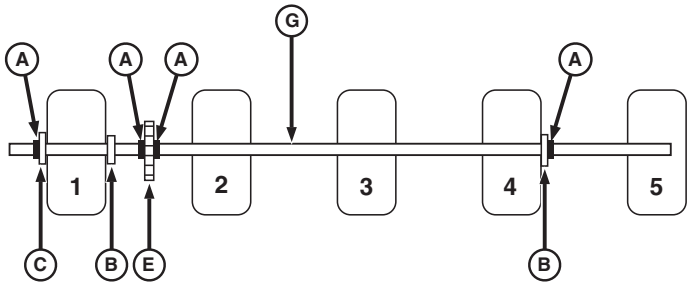
A—Buffer (12 used)
B—Bearing on Right of Row Frame (11 used)
C—Bearing on Left of Row Frame (8 used)
D—Hex Drive Coupler (3 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)

NOTE: Actual row units have been removed for clarity.

G—245.0 cm (96.5 in) Shaft
H—87.5 cm (34.4 in) Shaft (2 used)
I—42.0 cm (16.5 in) Shaft (2 used)
J—222.5 cm (87.6 in) Shaft (2 used)
K—207.5 cm (81.7 in) Shaft

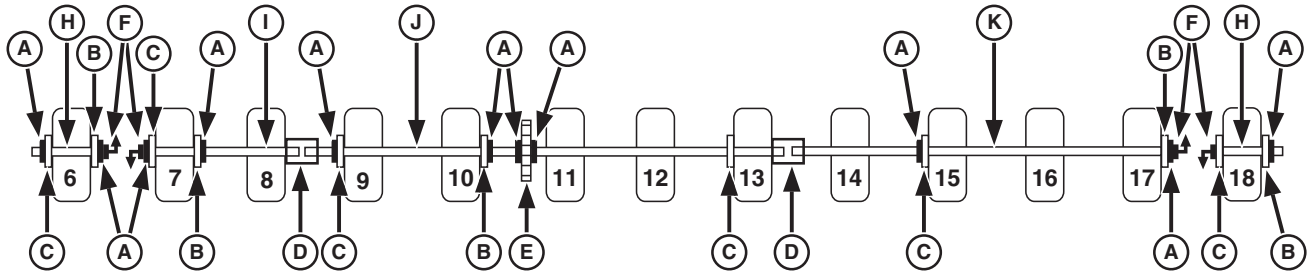
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB40 (23R with 50 cm [19.68 in] Spacing)



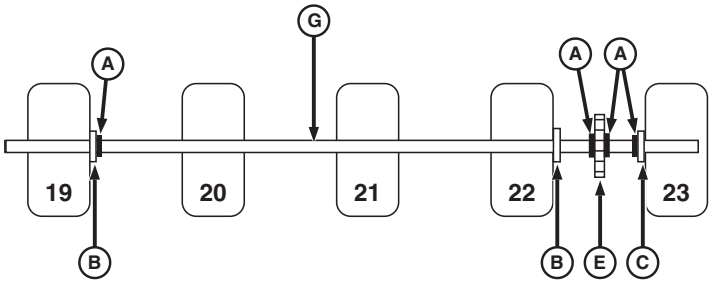
BML008176—UN—06AUG21

Left-Hand Side Wing Drive System



BML008177—UN—21AUG21

Center Frame Drive System



BML008178—UN—06AUG21

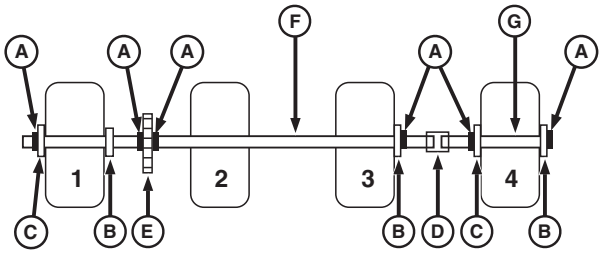
Right-Hand Side Wing Drive System

A—Buffer (19 used)
B—Bearing on Right of Row Frame (9 used)
C—Bearing on Left of Row Frame (8 used)
D—Hex Drive Coupler (2 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)
G—222.5 cm (87.6 in) Shaft (2 used)
H—42.0 cm (16.5 in) Shaft (2 used)
I—87.5 cm (34.4 in) Shaft
J—245.0 cm(96.5 in Shaft
K—207.5 cm (81.7 in) Shaft

NOTE: Actual row units have been removed for clarity.

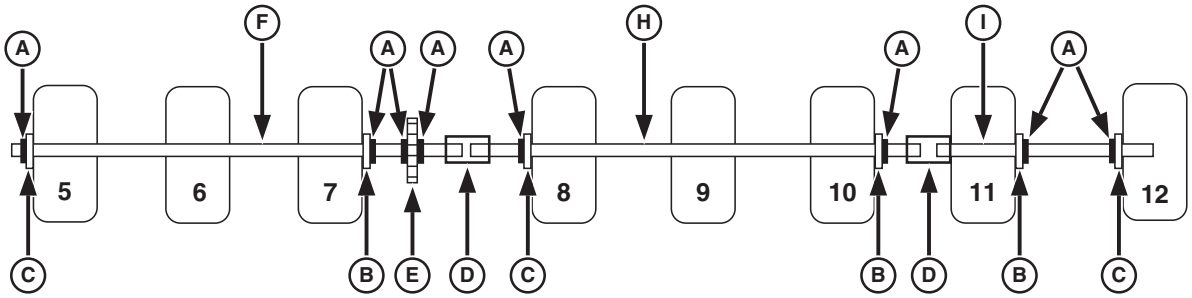
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB40 (16R with 76 cm [29.92 in] Spacing)



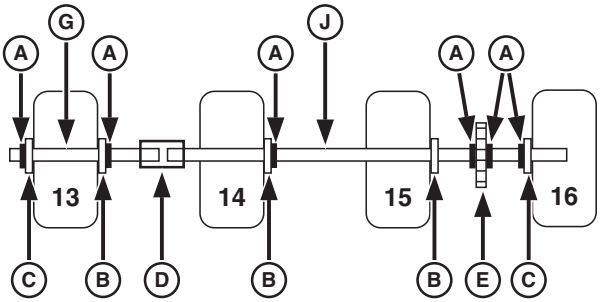
BML008179—UN—06AUG21

Left-Hand Side Wing Drive System



BML008180—UN—06AUG21

Center Frame Drive System



BML008181—UN—21AUG21

Right-Hand Side Wing Drive System

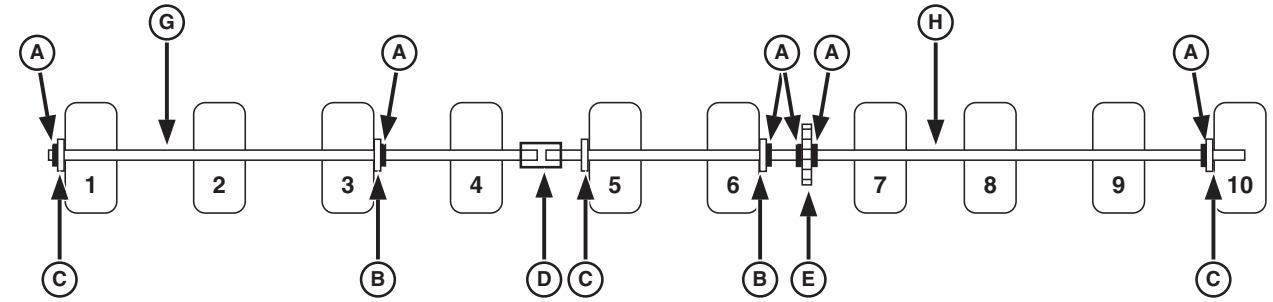
A—Buffer (20 used)
B—Bearing on Right of Row Frame (9 used)
C—Bearing on Left of Row Frame (7 used)
D—Hex Drive Coupler (4 used)
E—Sprocket (3 used)

NOTE: Actual row units have been removed for clarity.

F—222.5 cm (87.6 in) Shaft (2 used)
G—42.0 cm (16.5 in) Shaft (2 used)
H—245.0 cm (96.5 in) Shaft
I—87.5 cm (34.4 in) Shaft
J—207.5 cm (81.7 in) Shaft

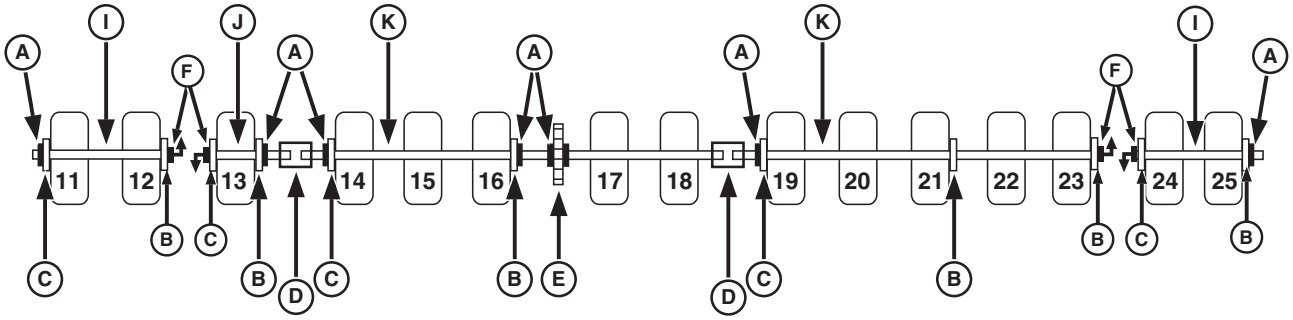
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB50 (35R with 45 cm [17.71 in] Spacing)



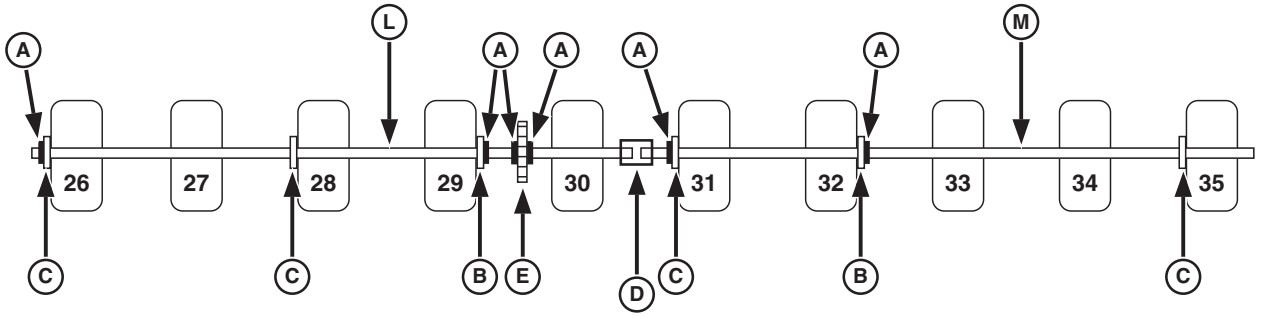
BML008191—UN—21AUG21

Left-Hand Side Wing Drive System



BML008192—UN—24AUG21

Center Frame Drive System



BML008193—UN—21AUG21

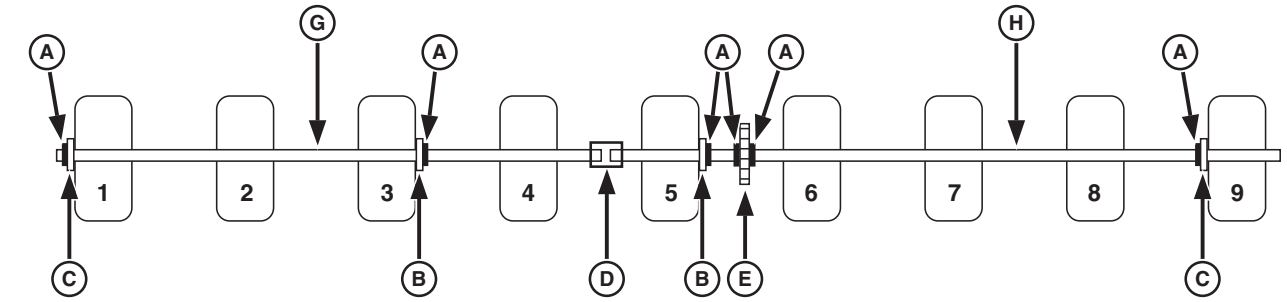
Right-Hand Side Wing Drive System

A—Buffer (20 used)
B—Bearing on Right of Row Frame (9 used)
C—Bearing on Left of Row Frame (12 used)
D—Hex Drive Coupler (4 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)
G—190.0 cm (74.8 in) Shaft
H—245.0 cm (96.5 in) Shaft
I—87.5 cm (34.4 in) Shaft
J—42.0 cm (16.5 in) Shaft
K—222.5 cm (87.6 in) Shaft (2 used)
L—220.0 cm (86.6 in) Shaft
M—207.5 cm (81.7 in) Shaft

NOTE: Row units have been removed for clarity.

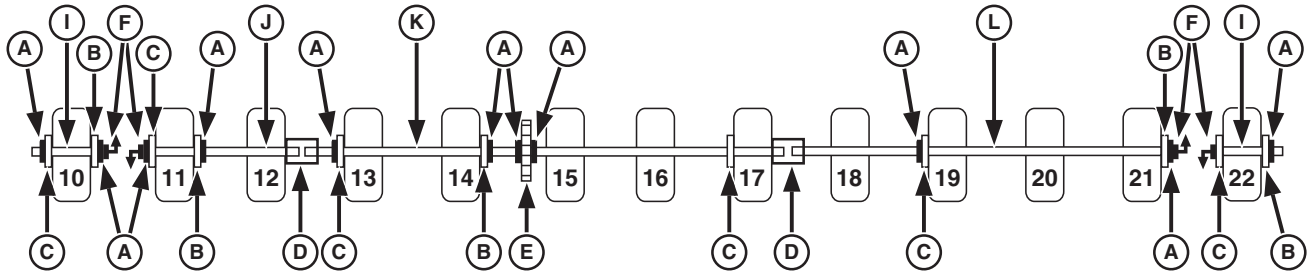
NOTE: The left-hand and right-hand sides are determined by standing behind the machine and facing the direction of the machine travel.

Drive System Installation—DB50 (31R with 50 cm [19.68 in] Spacing)



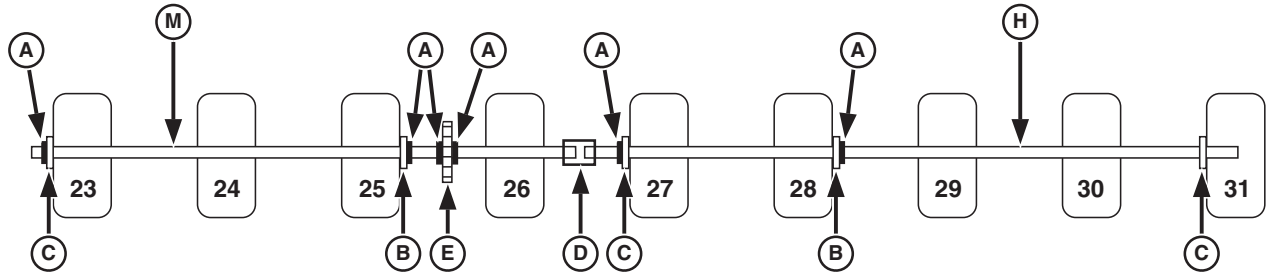
BML008194—UN—06AUG21

Left-Hand Wing Drive System



BML008195—UN—06AUG21

Center Frame Drive System



BML008196—UN—21AUG21

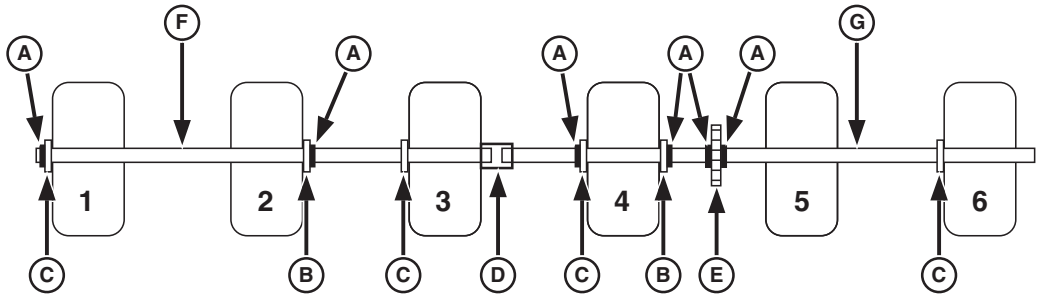
Right-Hand Wing Drive System

A—Buffer (23 used)
B—Bearing on Right of Row Frame (9 used)
C—Bearing on Left of Row Frame (11 used)
D—Hex Drive Coupler (4 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)
G—220.0 cm (86.6 in) Shaft
H—222.5 cm (87.6 in) Shaft (2 used)
I—42.0 cm (16.5 in) Shaft (2 used)
J—87.5 cm (34.4 in) Shaft
K—245.0 cm (96.5 in) Shaft
L—207.5 cm (81.7 in) Shaft
M—190.0 cm (74.8 in) Shaft

NOTE: Row units have been removed for clarity.

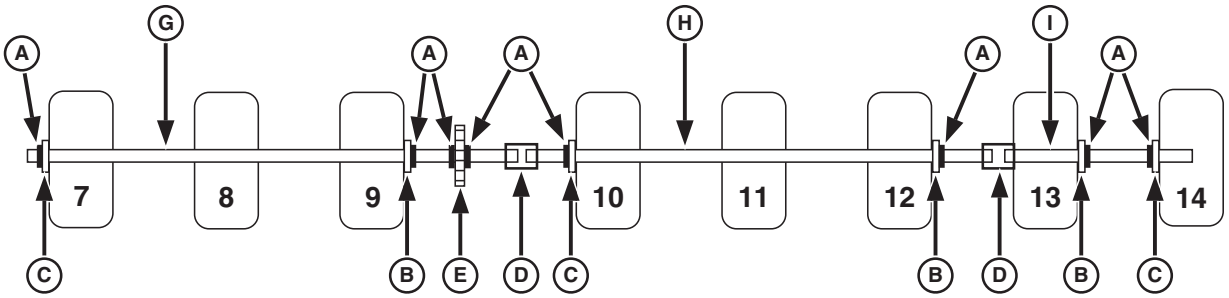
NOTE: The left-hand and right-hand sides are determined by standing behind the machine and facing the direction of the machine travel.

Drive System Installation—DB50 (20R with 76 cm [29.92 in] Spacing)



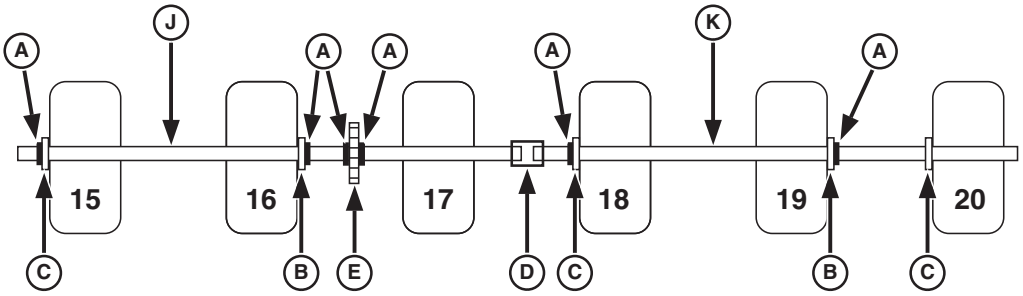
BML008182—UN—24AUG21

Left-Hand Side Wing Drive System



BML008209—UN—24AUG21

Center Frame Drive System



BML008183—UN—24AUG21

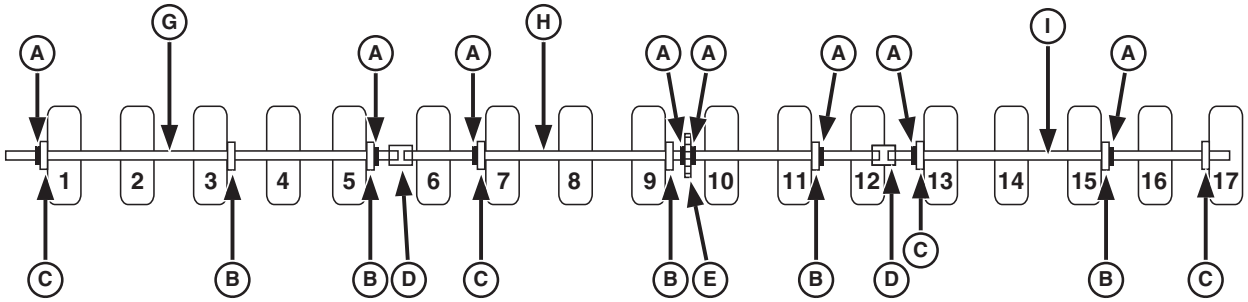
Right-Hand Side Wing Drive System

A—Buffer (20 used)
B—Bearing on Right of Row Frame (7 used)
C—Bearing on Left of Row Frame (10 used)
D—Hex Drive Coupler (4 used)
E—Sprocket (3 used)
F—190.0 cm (74.8 in) Shaft
G—222.5 cm (87.6 in) Shaft (2 used)
H—245.0 cm (96.5 in) Shaft
I—87.5 cm (34.4 in) Shaft
J—220.0 cm (86.6 in) Shaft
K—207.5 cm (81.7 in) Shaft

NOTE: Actual row units have been removed for clarity.

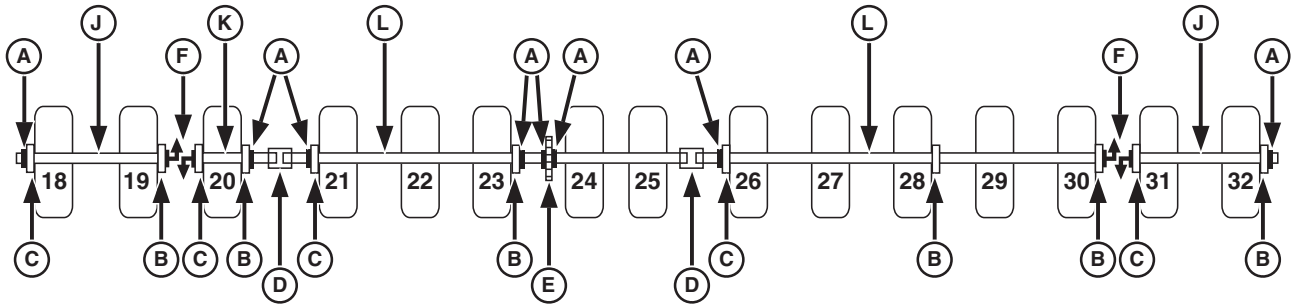
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB74 (48R with 45 cm [17.71 in] Spacing)



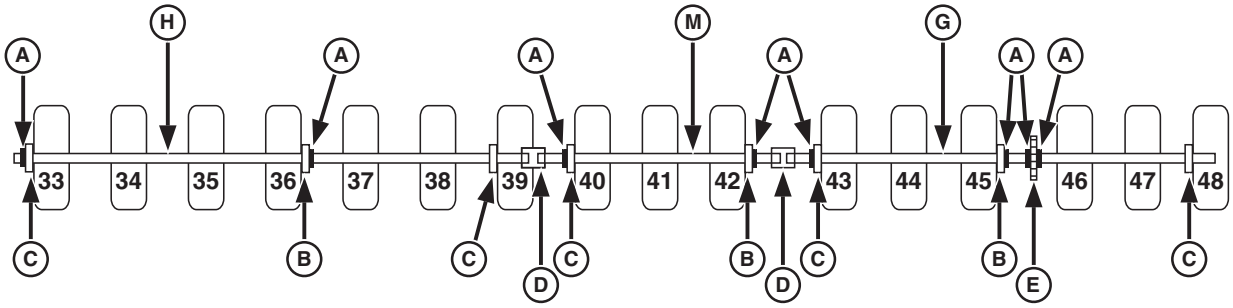
BML008184—UN—24AUG21

Left-Hand Side Wing Drive System



BML008185—UN—21AUG21

Center Frame Drive System



BML008186—UN—21AUG21

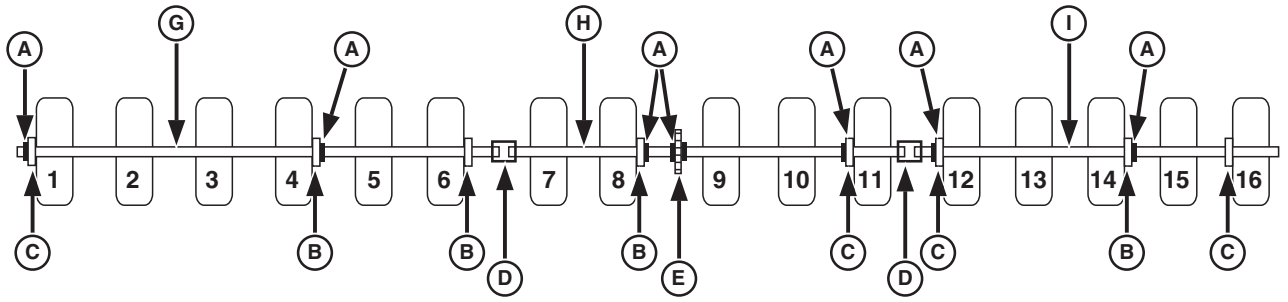
Right-Hand Side Wing Drive System

A—Buffer (24 used)
B—Bearing on Right of Row Frame (14 used)
C—Bearing on Left of Row Frame (14 used)
D—Hex Drive Coupler (6 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)
G—245.0 cm (96.5 in) Shaft (2 used)
H—300.0 cm (118.1 in) Shaft (2 used)
I—207.5 cm (81.7 in) Shaft
J—87.5 cm (34.4 in) Shaft (2 used)
K—42.0 cm (16.5 in) Shaft (2 used)
L—222.5 cm (87.6 in) Shaft (2 used)
M—145.0 cm (57.1 in) Shaft

NOTE: Actual row units have been removed for clarity.

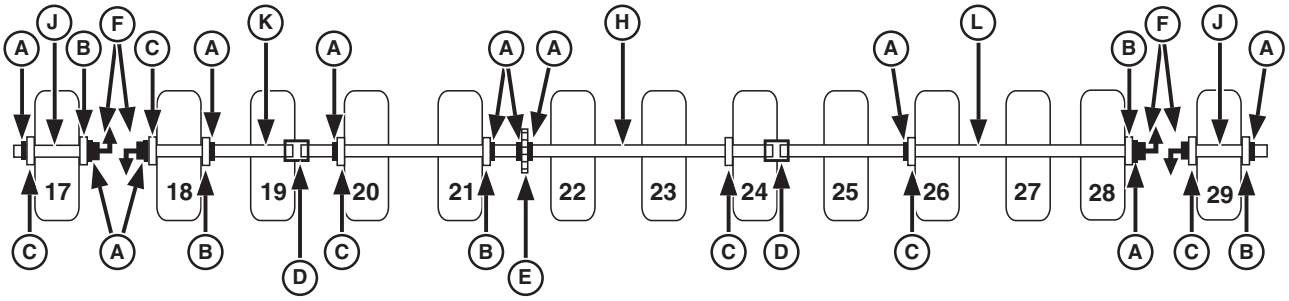
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB74 (45R with 50 cm [19.68 in] Spacing)



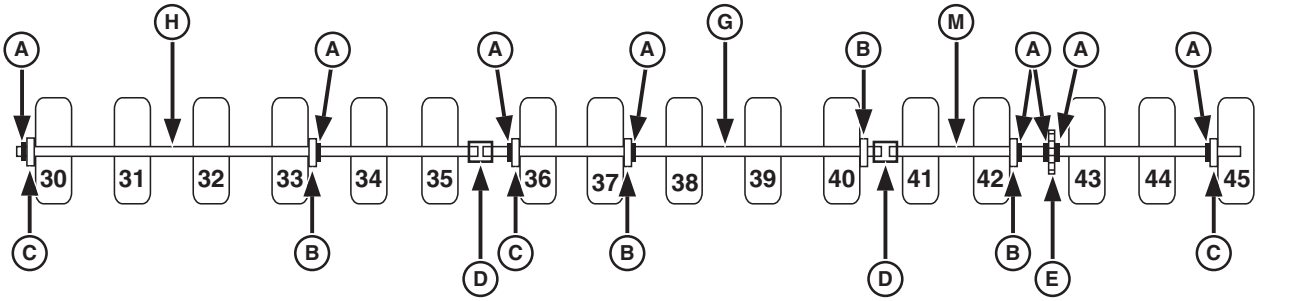
BML008188—UN—24AUG21

Left-Hand Side Wing Drive System



BML008189—UN—21AUG21

Center Frame Drive System



BML008190—UN—06AUG21

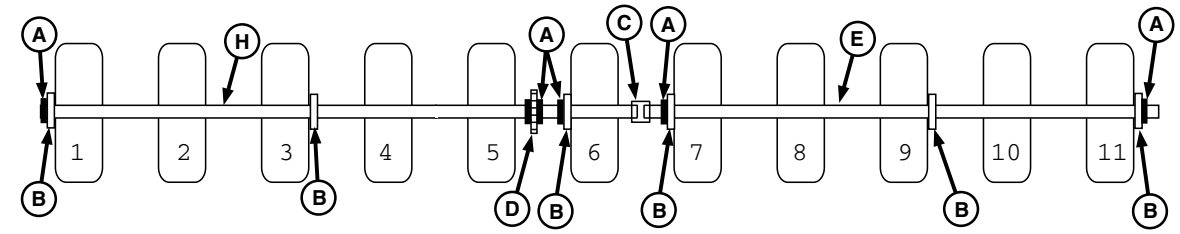
Right-Hand Side Wing Drive System

A—Buffer (26 used)
B—Bearing on Right of Row Frame (13 used)
C—Bearing on Left of Row Frame (13 used)
D—Hex Drive Coupler (6 used)
E—Sprocket (3 used)
F—Drive Coupler (2 used)
G—300.0 cm (118.1 in) Shaft (2 used)
H—245.0 cm (96.5 in) Shaft (3 used)
I—222.5 cm (87.6 in) Shaft
J—42.0 cm (16.5 in) Shaft (2 used)
K—87.5 cm (34.4 in) Shaft
L—207.5 cm (81.7 in) Shaft
M—145.0 cm (57.1 in) Shaft

NOTE: Actual row units have been removed for clarity.

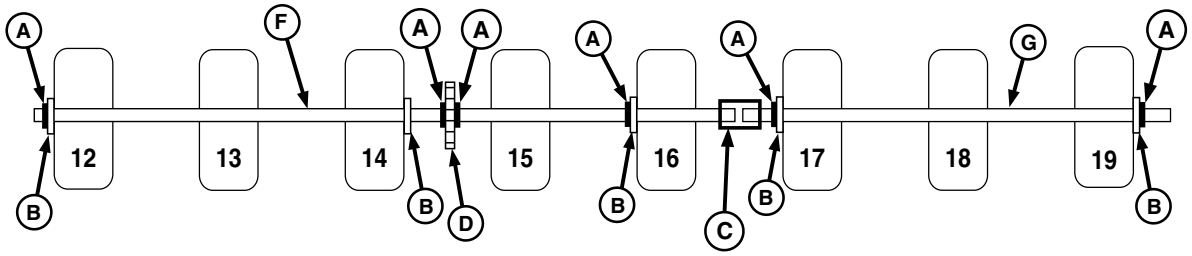
NOTE: Left-hand and right-hand sides are determined by standing behind machine and facing direction of machine travel.

Drive System Installation—DB74 (30R with 76 cm [29.92 in] Spacing)



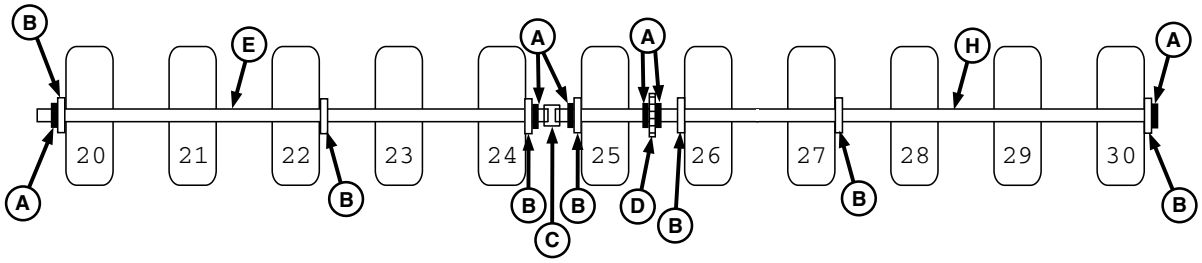
BML007001—UN—01JUN21

Left-Hand Side Wing Drive System



BM001975—UN—02MAR17

Center Frame Drive System



BML007002—UN—01JUN21

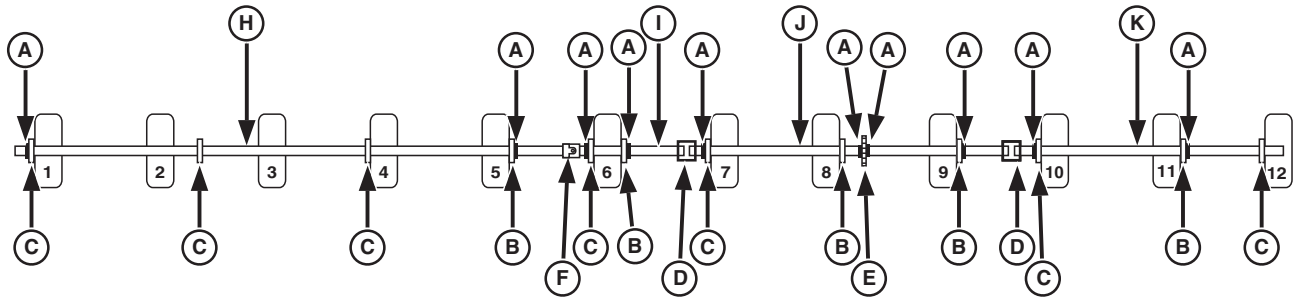
Right-Hand Side Wing Drive System

A—Clamp
B—Bearing
C—Hex Drive Coupler
D—Gear
E—380 cm (149.6 in) Shaft
F—344 cm (135.4 in) Shaft
G—222 cm (87.4 in) Shaft
H—428 cm (168.5 in) Shaft

Row units have been removed for clarity purposes.

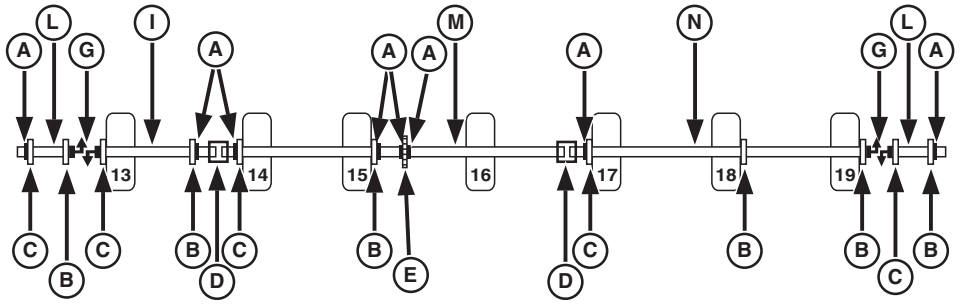
Left-hand and right-hand sides are determined by standing behind the machine and facing in the direction of machine travel.

Drive System Installation—DB90 (31R with 90 cm [35.43 in] Spacing)



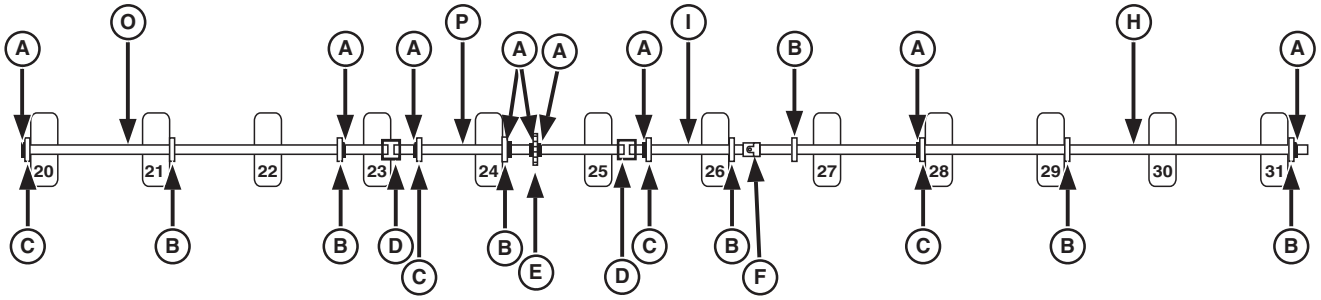
BML019372—UN—23MAR22

Left-Hand Side Wing Drive System



BML019373—UN—23MAR22

Center Frame Drive System



BML019374—UN—23MAR22

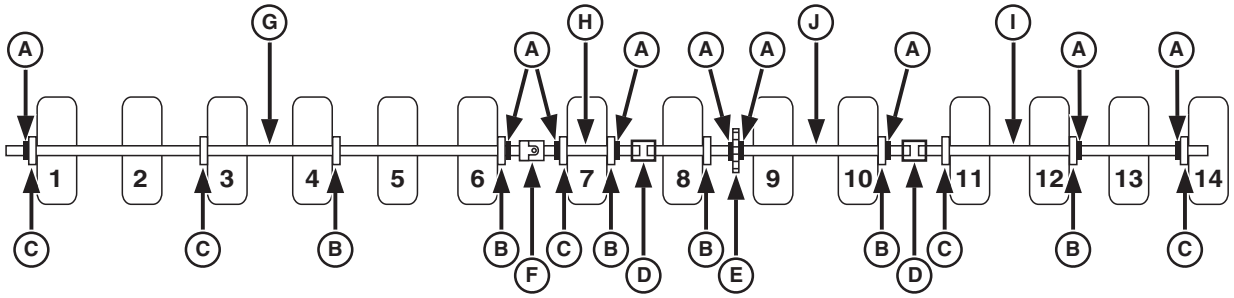
Right-Hand Side Wing Drive System

A—Buffer (27 used)
B—Bearing on Right of Row Frame (17 used)
C—Bearing on Left of Row Frame (16 used)
D—Hex Drive Coupler (6 used)
E—Sprocket (3 used)
F—U-Joint (2 used)
G—Drive Coupler (2 used)
H—450.0 cm (177.0 in) Shaft (2 used)
I—87.5 cm (34.4 in) Shaft (3 used)
J—260.0 cm (102.4 in) Shaft
K—207.5 cm (81.7 in) Shaft
L—42.0 cm (16.5 in) Shaft (2 used)
M—269.0 cm (105.9 in) Shaft
N—222.5 cm (87.6 in) Shaft
O—300.0 cm (118.1 in) Shaft
P—190.0 cm (74.8 in) Shaft

NOTE: The graphics used in this procedure show the row unit W-bracket installed only. Row units were removed for photographic clarity for detailed part installations. Read these instructions thoroughly before installing the drillshaft, bearings, clamps, sprockets, and couplers.

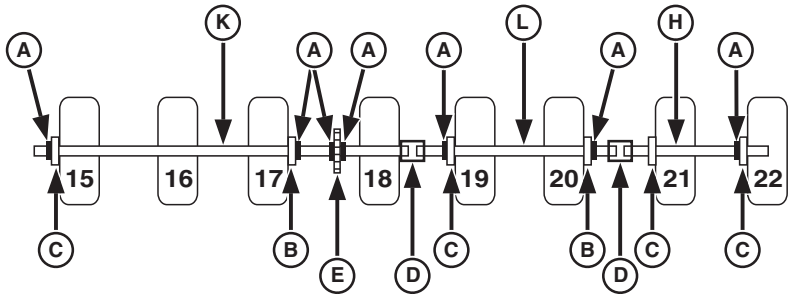
NOTE: The first line is the left-hand side section. The second line is the center section, and the third line is the right-hand side section of the planter.

Drive System Installation—DB90 (36R with 76 cm [29.92 in] Spacing)



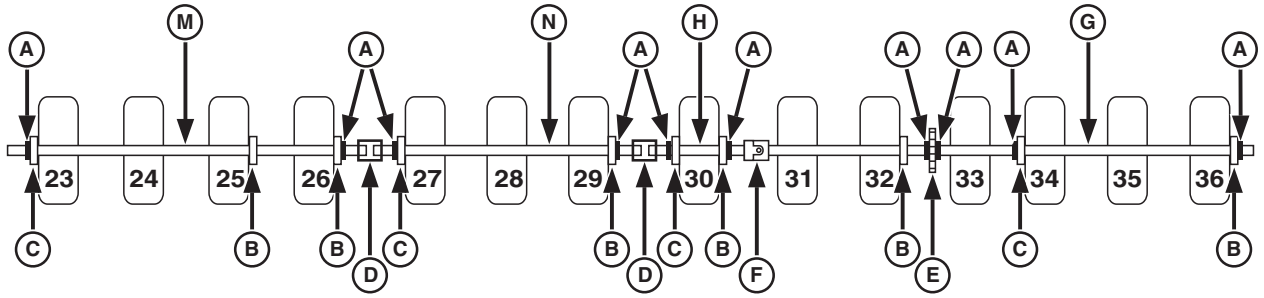
BML008197—UN—24AUG21

Left-Hand Side Wing Drive System



BML008198—UN—24AUG21

Center Frame Drive System



BML008199—UN—24AUG21

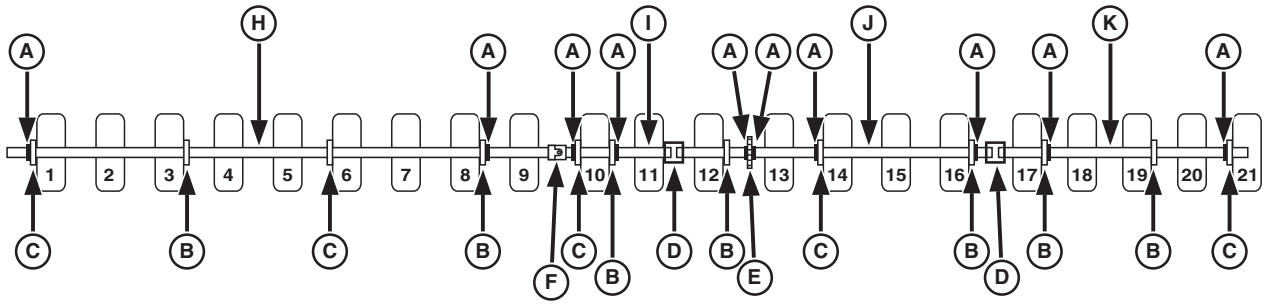
Right-Hand Side Wing Drive System

A—Buffer (26 used)
B—Bearing on Right of Row Frame (14 used)
C—Bearing on Left of Row Frame (13 used)
D—Hex Drive Coupler (5 used)
E—Sprocket (3 used)
F—U-Joint (2 used)
G—450.0 cm (177.0 in) Shaft (2 used)
H—87.5 cm (34.4 in) Shaft (3 used)
I—260.0 cm (102.4 in) Shaft
J—222.5 cm (87.6 in) Shaft
K—269.0 cm (105.9 in) Shaft
L—190.0 cm (74.8 in) Shaft
M—300.0 cm (118.1 in) Shaft
N—207.5 cm (81.7 in) Shaft

NOTE: The graphics used in this procedure show the row unit W-bracket installed only. Row units were removed for photographic clarity for detailed part installations. Read these instructions thoroughly before installing the drillshaft, bearings, clamps, sprockets, and couplers.

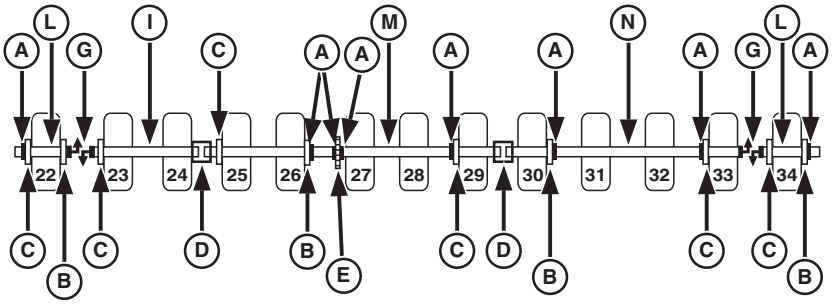
NOTE: The first line is the left-hand side section. The second line is the center section, and the third line is the right-hand side section of the planter.

Drive System Installation—DB90 (55R with 50 cm [19.68 in] Spacing)



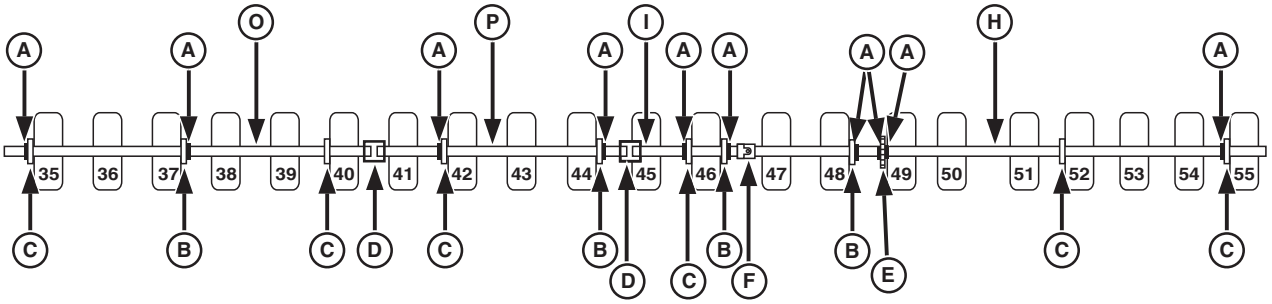
BML008200—UN—24AUG21

Left-Hand Side Wing Drive System



BML008201—UN—24AUG21

Center Frame Drive System



BML008202—UN—24AUG21

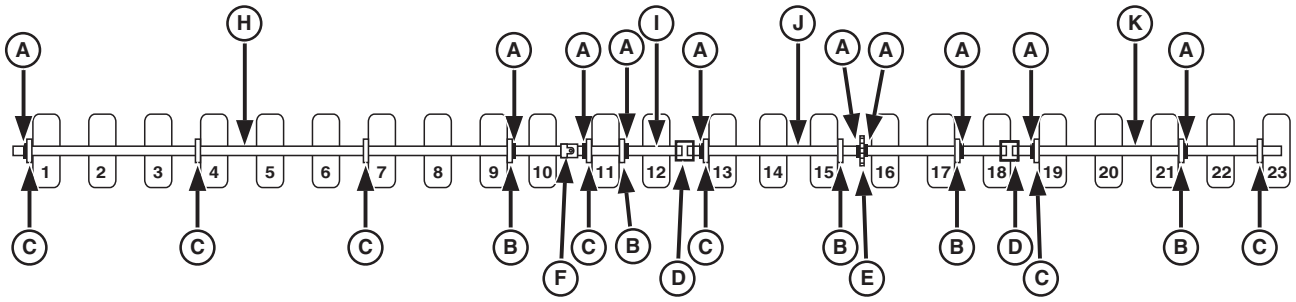
Right-Hand Side Wing Drive System

A—Buffer (28 used)
B—Bearing on Ring of Row Frame (15 used)
C—Bearing on Left of Row Frame (16 used)
D—Hex Drive Coupler (6 used)
E—Sprocket (3 used)
F—U-Joint (2 used)
G—Drive Coupler (2 used)
H—450.0 cm (177.0 in) Shaft (2 used)
I—87.5 cm (34.4 in) Shaft (3 used)
J—260.0 cm (102.4 in) Shaft
K—222.5 cm (87.6 in) Shaft
L—42.0 cm (16.5 in) Shaft (2 used)
M—269.0 cm (105.9 in) Shaft
N—190.0 cm (74.8 in) Shaft
O—300.0 cm (118.1 in) Shaft
P—207.5 cm (81.7 in) Shaft

NOTE: The graphics used in this procedure show the row unit W bracket installed only. Row units were removed for photographic clarity for detailed part installations. Read these instructions thoroughly before installing the drillshaft, bearings, clamps, sprockets, and couplers.

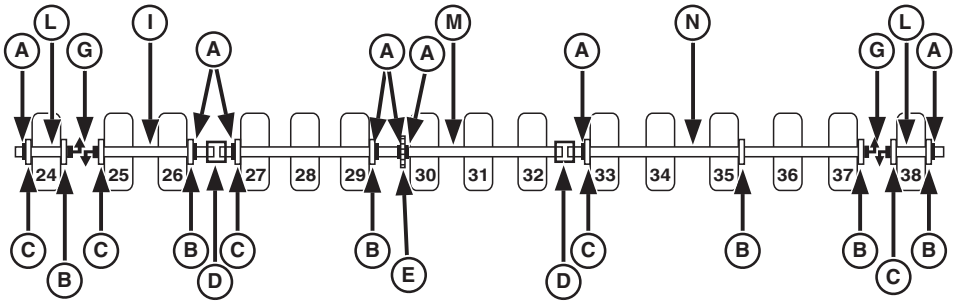
NOTE: The first line is the left-hand side section. The second line is the center section, and the third line is the right-hand side section of the planter.

Drive System Installation—DB90 (61R with 45 cm [17.71 in] Spacing)



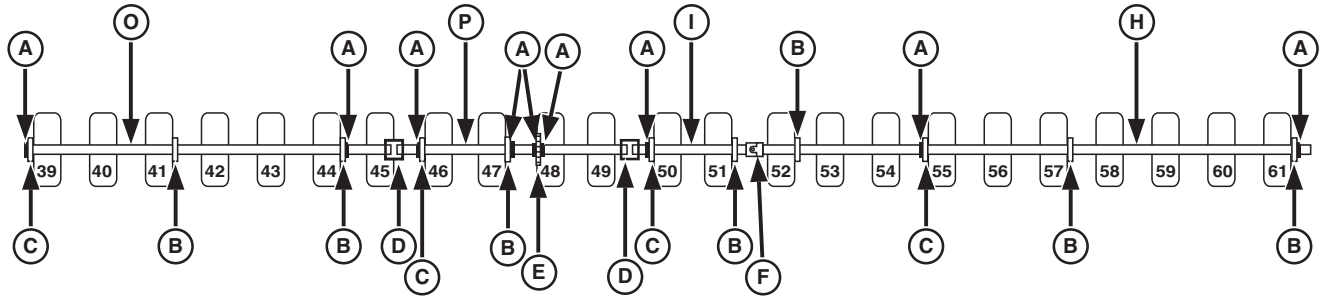
BML008203—UN—23MAR22

Left-Hand Side Wing Drive System



BML008204—UN—24AUG21

Center Frame Drive System



BML008205—UN—24AUG21

Right-Hand Side Wing Drive System

A—Buffer (27 used)
B—Bearing on Right of Row Frame (17 used)
C—Bearing on Left of Row Frame (16 used)
D—Hex Drive Coupler (6 used)
E—Sprocket (3 used)
F—U-Joint (2 used)
G—Drive Coupler 92 used)
H—450.0 cm (177.0 in) Shaft (2 used)
I—87.5 cm (34.4 in) Shaft (3 used)
J—260.0 cm (102.4 in) Shaft
K—207.5 cm (81.7 in) Shaft
L—42.0 cm (16.5 in) Shaft (2 used)
M—269.0 cm (105.9 in) Shaft
N—222.5 cm (87.6 in) Shaft
O—300.0 cm (118.1 in) Shaft
P—190.0 cm (74.8 in) Shaft

NOTE: The graphics used in this procedure show the row unit W-bracket installed only. Row units were removed for photographic clarity for detailed part installations. Read these instructions thoroughly before installing the drillshaft, bearings, clamps, sprockets, and couplers.

NOTE: The first line is the left-hand side section. The second line is the center section, and the third line is the right-hand side section of the planter.

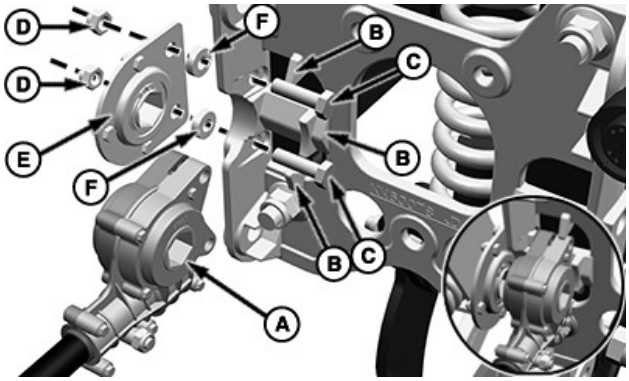
N8XR12J,00006C3-19-07APR22

Hydraulic Drive System (VRD)—Row Unit Drive System Installation—Only for MaxEmerge™ 5

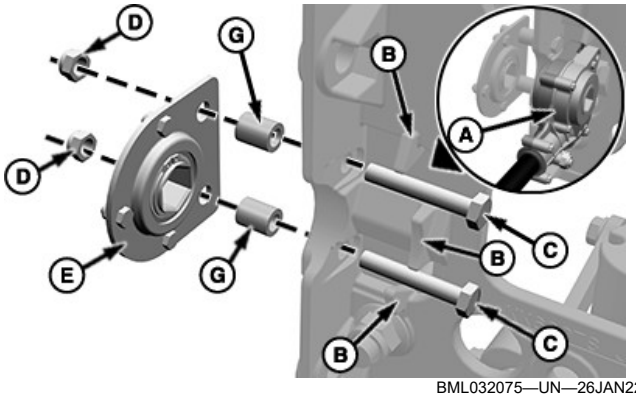
NOTE: Machine must be folded to install row unit driveshaft system on the machine.

Read these instructions thoroughly before installing the system.

Bearings



BML032086—UN—27JAN22



BML032075—UN—26JAN22

Short Row Unit—DB90 Planter

1. On the left-hand side of the row unit frame:
   a. Install screws (C).
   b. Install washers (F).
   c. Install bearing (E).
   d. Install nuts (D).

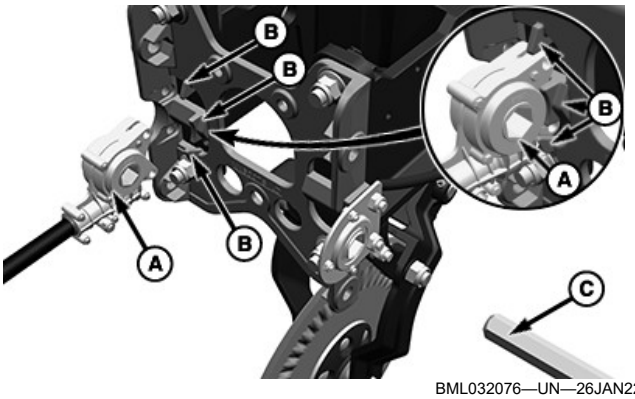
   NOTE: Only for the short units on DB90 planters, install bushings (G) instead of washers (F).

   e. Assemble the gear case (A) into the support edges (B).
2. For the bearing on the right-hand side of the row frame, place the bearing in the support hole, install the screws and washers, and tighten the nuts.

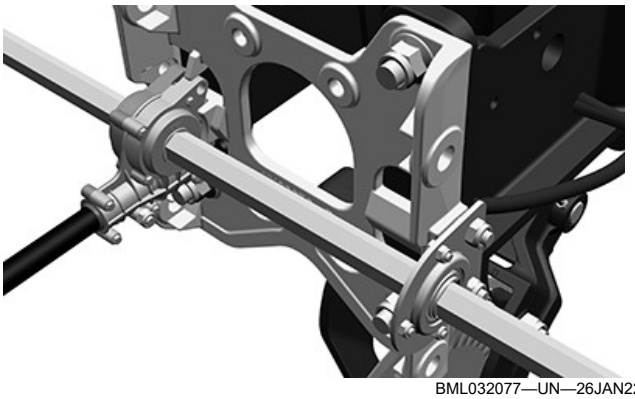
NOTE: The procedure for the right-hand side bearing installation is almost the same as the left-hand side bearing. The only difference is that there is no gear case.

Gear Case

When the gear case is not assembled close to the bearings, refer to the following procedure:



BML032076—UN—26JAN22



BML032077—UN—26JAN22

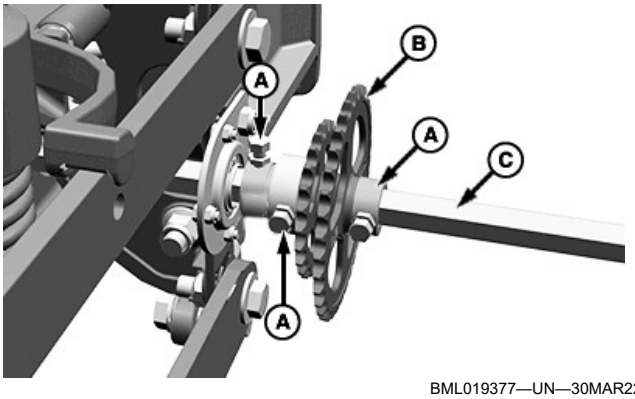
1. Fit the gear case (A) into the support edges (B).
2. Slide the shaft (C) through the gear case and bearings.

Sprocket

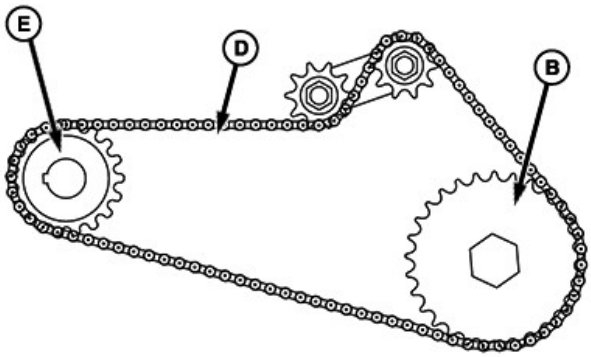
IMPORTANT: Avoid system malfunction: the range selected on the SeedStar™ 2 monitor must be the same as the range configured on the planter.

IMPORTANT: Always perform the range drive adjustment on the planter transmission before selecting the range on the SeedStar™ 2 monitor.

SeedStar is a trademark of Deere & Company



BML019377—UN—30MAR22



BML032087—UN—28JAN22

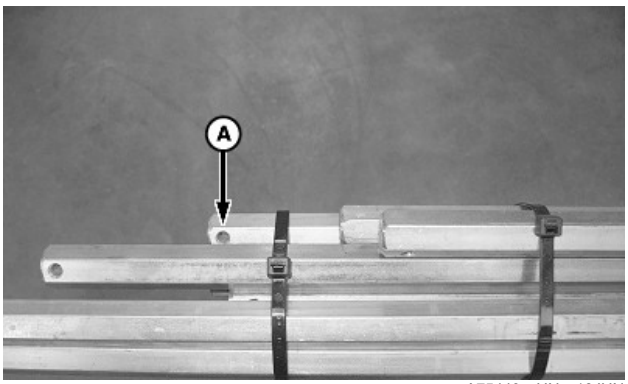
NOTE: Tighten clamps (A) after variable rate drive (VRD) motor and chain have been installed.

1. Define the number of teeth of the sprocket (B).

NOTE: For information about how to configure on the SeedStar™ 2 monitor the same gear ratio physically set on the machine, see SeedStar™ 2—Setting Up Drive Sections in the SeedStar™ section.

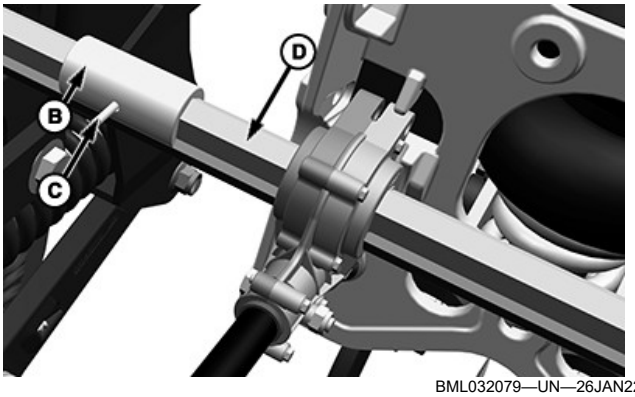
2. Position the desired sprocket (B) on shaft (C).
3. Install clamps (A).
4. Slide shaft (C) through the bearings.
5. Align the desired sprocket (B) with the VRD sprocket (E).
6. Install chain (D).
7. Tighten clamps (A).

Hex Drive Coupler



A75449—UN—18JUN12

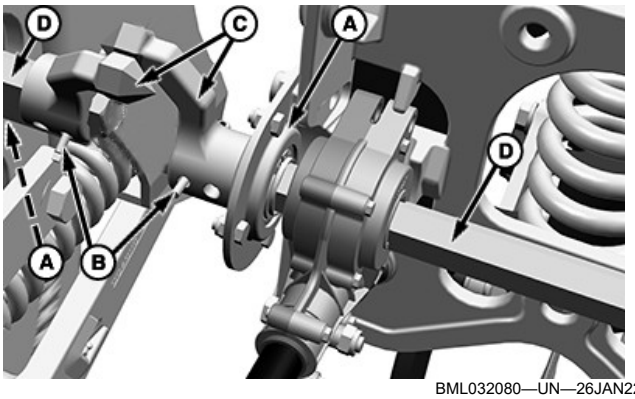
NOTE: Some row unit driveshafts have holes (A).



BML032079—UN—26JAN22

1. Center the hex drive coupler (B) over the ends of the shaft (D). Align the drive coupler hole with the shaft hole (A).
2. Install the pin (C) in the hex drive coupler hole.

Drive Coupler



BML032080—UN—26JAN22

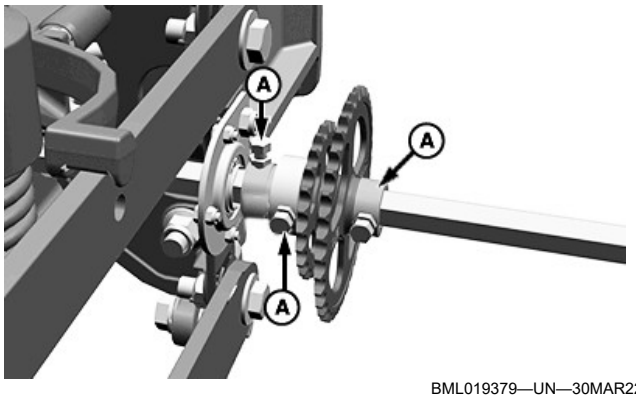
IMPORTANT: Avoid damage to the machine. The shaft end cannot pass the bearing (A).

1. Align the holes between the drive couplers (C) and the shafts (D). Install the cotter pins (B).
2. Slide the end without hole of the shaft (D) through the bearings (A).

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Final Verification of the Drive System Installation

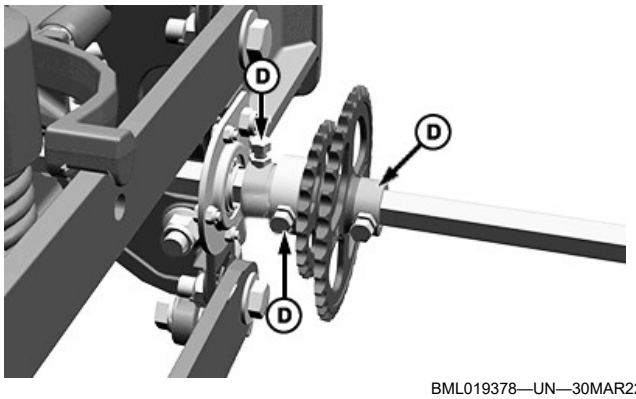
1. Unfold the machine after installation of the components.
2. Align the drive couplers. (See Mechanical Drive System—Align Drillshaft Couplers—Only for MaxEmerge™ 5 in this section.)



BML019379—UN—30MAR22

3. Check if all clamps (A) are tight to hold shafts in position.

N8XR12J,00006C4-19-07APR22



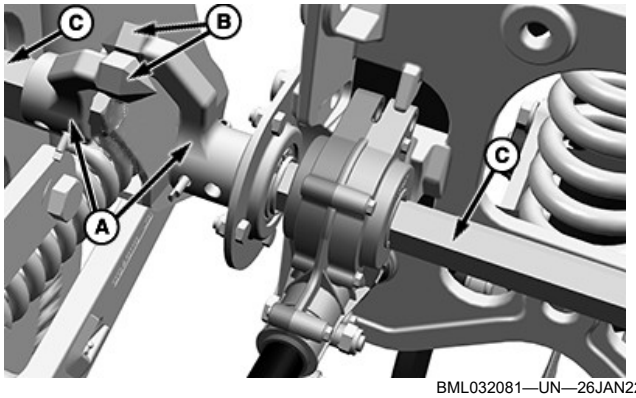
BML019378—UN—30MAR22

Align the couplers (A) and the flat surfaces (B) as necessary. Flat surfaces (B) on the sides of couplers must be in touch and aligned. To align the couplers, proceed as follows:

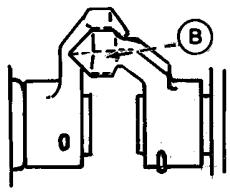
1. Ensure lateral alignment of flat surfaces (B) is correct by positioning the shafts (C).
2. After surfaces and shafts (C) have been aligned, lock the shaft movement with clamps (D).

N8XR12J,00006C5-19-31MAR22

Hydraulic Drive System (VRD)—Align Drillshaft Couplers—Only for MaxEmerge™ 5

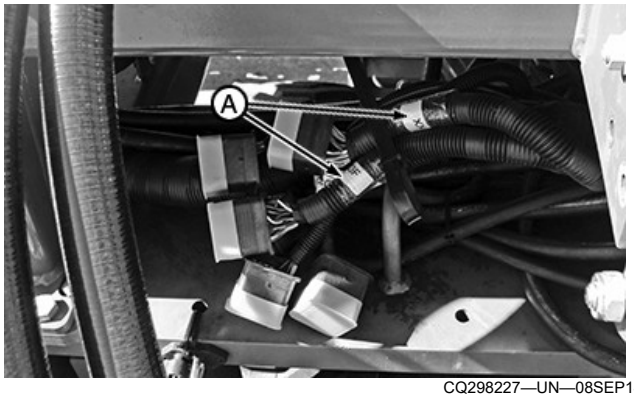


BML032081—UN—26JAN22



A39747—UN—23APR96

Install Backbone Harnesses—Only for MaxEmerge™ 5

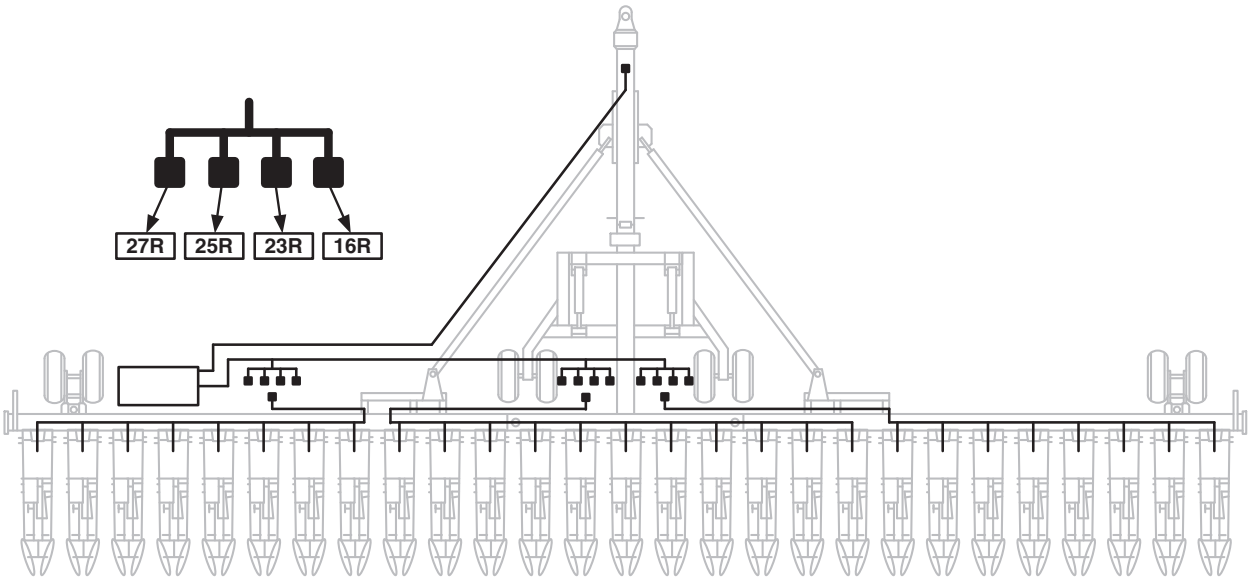


CQ298227—UN—08SEP14

To determine which set of harnesses is used for each row unit setup, locate the harness tag (A).

Check the code shown on the harness tag and connect according to the row unit configuration. Check the following layouts and tables according to the machine configuration.

DB40



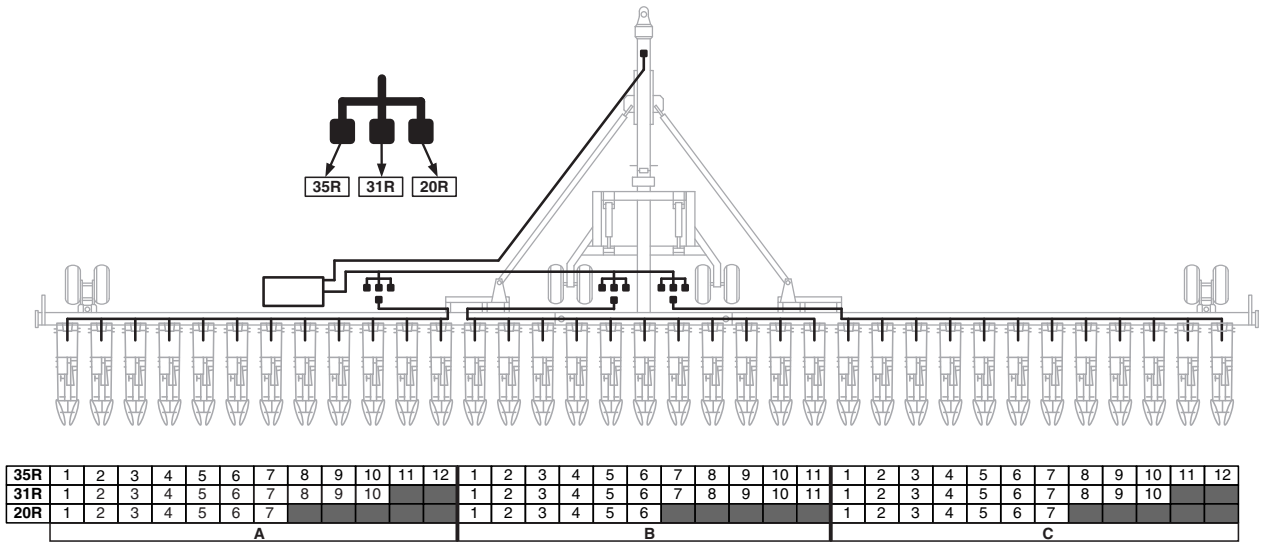
27R	A1	A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	C1	C2	C3	C4	C5	C6	C7	C8
25R		A2	A3	A4	A5	A6	A7	A8	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	C1	C2	C3	C4	C5	C6	C7	
23R	A1	A2	A3	A4	A5	A6			B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	C1	C2	C3	C4	C5	C6		
16R	A1	A2	A3	A4	A5				B1	B2	B3	B4	B5	B6						C1	C2	C3	C4	C5			

CQ298226—UN—08SEP14

27R—Connector for 27 Row Units with 45 cm (17.71 in) Spacing Configuration
25R—Connector for 25 Row Units with 45 cm (17.71 in) Spacing Configuration
23R—Connector for 23 Row Units with 50 cm (19.68 in) Spacing Configuration
16R—Connector for 16 Row Units with 76 cm (29.92 in) Spacing Configuration
A—Left-Hand Side Section
B—Center Section
C—Right-Hand Side Section

	Left-Hand Side Section Backbone Harness (A)	Center Section Backbone Harness (B)	Right-Hand Side Section Backbone Harness (C)
27 Row Units—45 cm (17.71 in) Spacing	27R Connector	27R Connector	27R Connector
25 Row Units—45 cm (17.71 in) Spacing	25R Connector	25R Connector	25R Connector
23 Row Units—50 cm (19.68 in) Spacing	23R Connector	23R Connector	23R Connector
16 Row Units—76 cm (29.92 in) Spacing	16R Connector	16R Connector	16R Connector

DB50

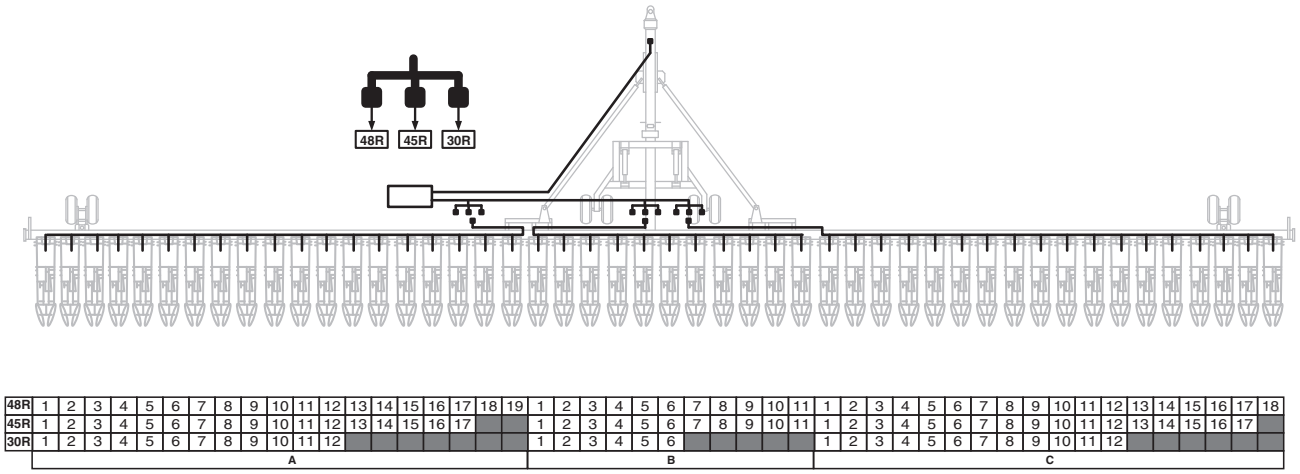


BM017736—UN—02MAY18

35R—Connector for 35 Row Units with 45 cm (17.71 in) Spacing Configuration
31R—Connector for 31 Row Units with 50 cm (19.68 in) Spacing Configuration
20R—Connector for 20 Row Units with 76 cm (29.92 in) Spacing Configuration
A—Left-Hand Side Section
B—Center Section
C—Right-Hand Side Section

	Left-Hand Side Section Backbone Harness (A)	Center Section Backbone Harness (B)	Right-Hand Side Section Backbone Harness (C)
35 Row Units—45 cm (17.71 in) Spacing	35R Connector	35R Connector	35R Connector
31 Row Units—50 cm (19.68 in) Spacing	31R Connector	31R Connector	31R Connector
20 Row Units—76 cm (29.92 in) Spacing	20R Connector	20R Connector	20R Connector

DB74

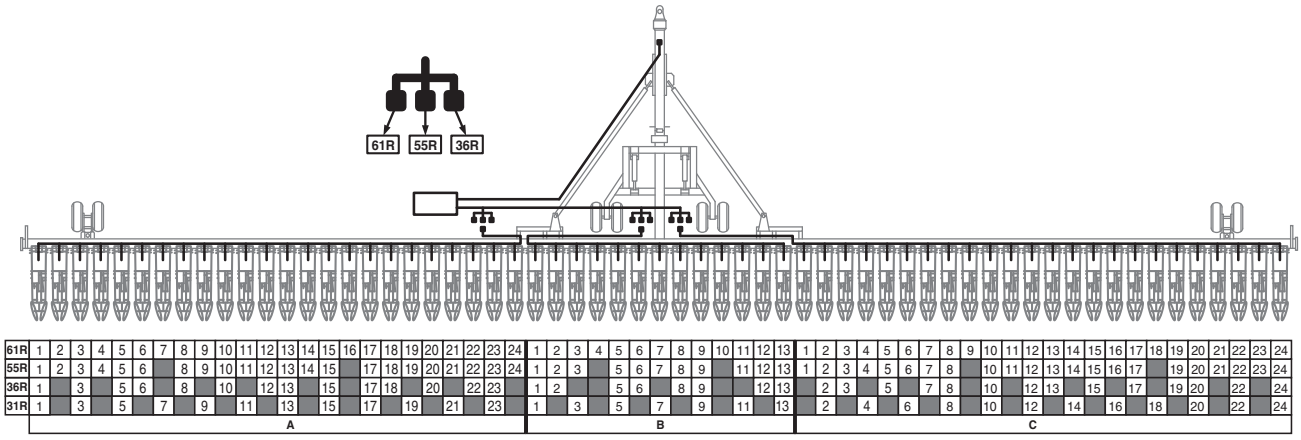


BML013629—UN—14JUN22

48R—Connector for 48 Row Units with 45 cm (17.71 in) Spacing Configuration
45R—Connector for 45 Row Units with 50 cm (19.68 in) Spacing Configuration
30R—Connector for 30 Row Units with 76 cm (29.92 in) Spacing Configuration
A—Left-Hand Side Section
B—Center Section
C—Right-Hand Side Section

	Left-Hand Side Section Backbone Harness (A)	Center Section Backbone Harness (B)	Right-Hand Side Section Backbone Harness (C)
48 Row Units - 45 cm (17.71 in) Spacing	48R Connector	48R Connector	48R Connector
45 Row Units - 50 cm (19.68 in) Spacing	45R Connector	45R Connector	45R Connector
30 Row Units - 76 cm (29.92 in) Spacing	30R Connector	30R Connector	30R Connector

DB90



BM058054—UN—07FEB23

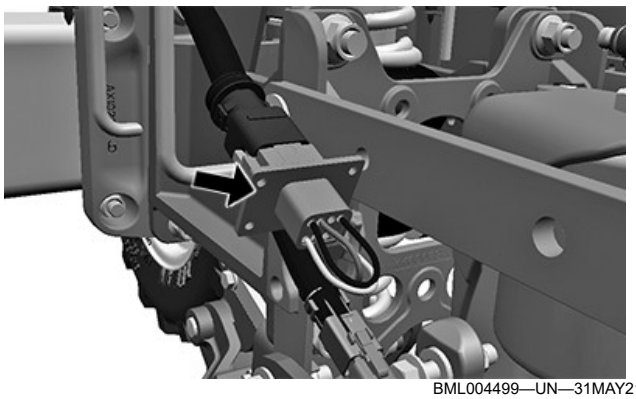
61R—Connector for 61 Row Units with 45 cm (17.71 in) Spacing Configuration and for 31 Row Units with 90 cm (35.43 in) Spacing Configuration
55R—Connector for 55 Row Units with 50 cm (19.68 in) Spacing Configuration
36R—Connector for 36 Row Units with 76 cm (29.92 in) Spacing Configuration
A—Left-Hand Side Section
B—Center Section
C—Right-Hand Side Section

	Left-Hand Side Section Backbone Harness (A)	Center Section Backbone Harness (B)	Right-Hand Side Section Backbone Harness (C)
61 Row Units - 45 cm (17.71 in) Spacing	Connector 61R	Connector 61R	Connector 61R
55 Row Units - 50 cm (19.68 in) Spacing	Connector 55R	Connector 55R	Connector 55R
36 Row Units - 76 cm (29.92 in) Spacing	Connector 36R	Connector 36R	Connector 36R
31 Row Units - 90 cm (35.43 in) Spacing	Connector 61R (only half of the row unit connectors is used)	Connector 61R (only half of the row unit connectors is used)	Connector 61R (only half of the row unit connectors is used)

k2f379y,1655224818656-19-07FEB23

Install Jumpers on Inactive Row Units—Only for MaxEmerge™ 5e and ExactEmarge™

The planters equipped with MaxEmerge™ 5e and ExactEmerge™ have their own control unit at each row unit. This way, when the number of row units is changed and some of them are removed, it is necessary to install a jumper at the open connectors in order to maintain the continuity on the CAN network.



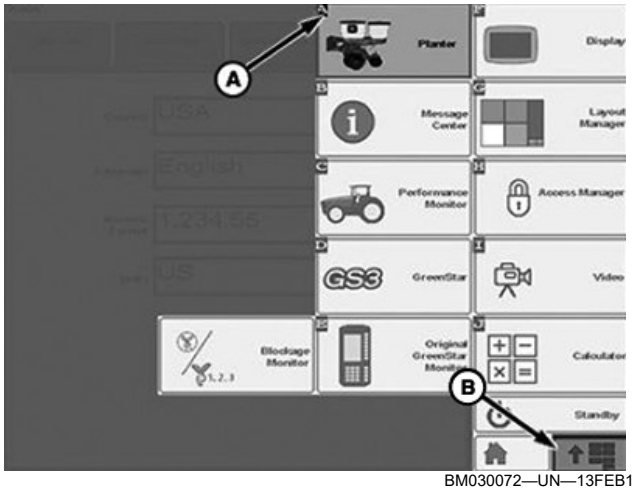
BML004499—UN—31MAY21

Jumper

If the planter stays with an odd number of row units, there must be one more in the right-hand side. If the planter stays with an even number, the row units must be distributed evenly.

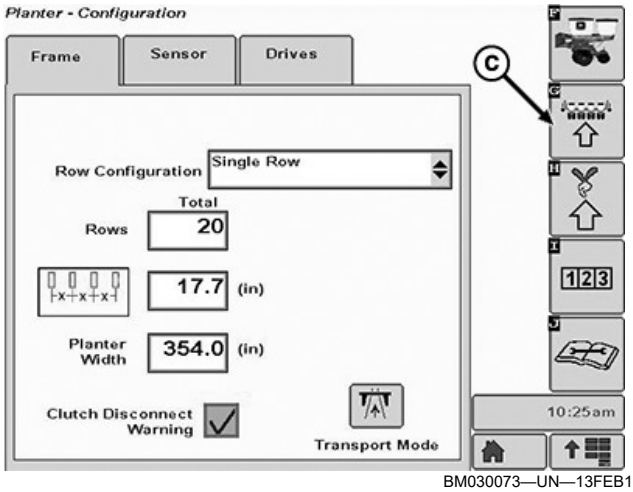
TS95756,00001A6-19-24MAY21

Configure the Row Units—MaxEmerge™ 5



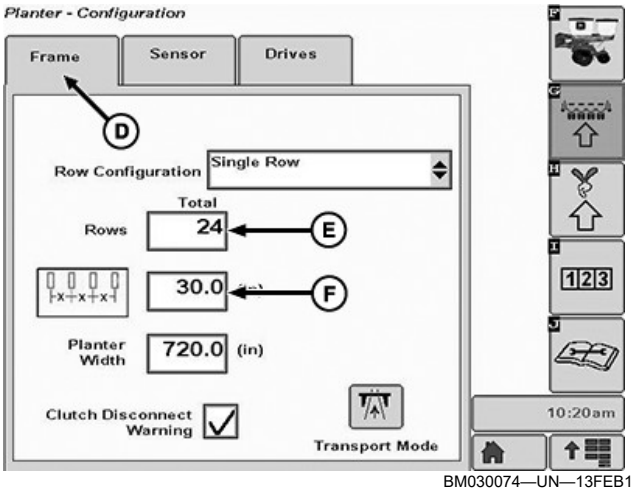
BM030072—UN—13FEB19

1. Select the **Menu** button (B) and the **Planter Setup** button (A).



BM030073—UN—13FEB19

2. Select the **Planter Configuration** button (C).



BM030074—UN—13FEB19

3. Select the **Frame** tab (D).
4. Select box (E) to define the number of row units, and select box (F) to define the spacing configuration adopted.
5. Configure the RowCommand™, if equipped. (See SeedStar™ 2 section.)

CR84017,0000853-19-27APR21

Configure the Row Units—ExactEmerge™ e MaxEmerge™ 5e

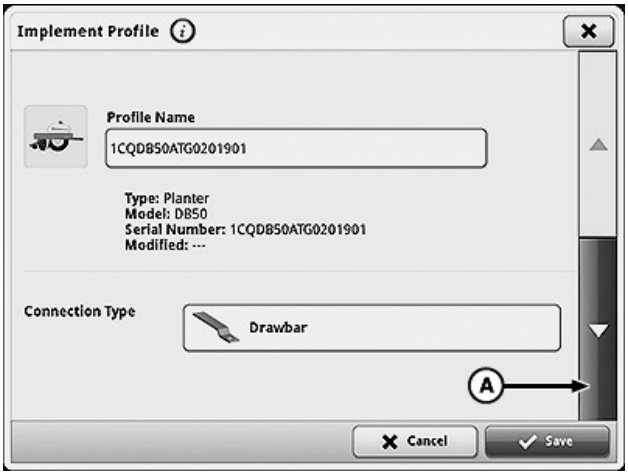


BM030122—UN—14MAR19

Menu Button > Applications Tab > Equipment Manager Button

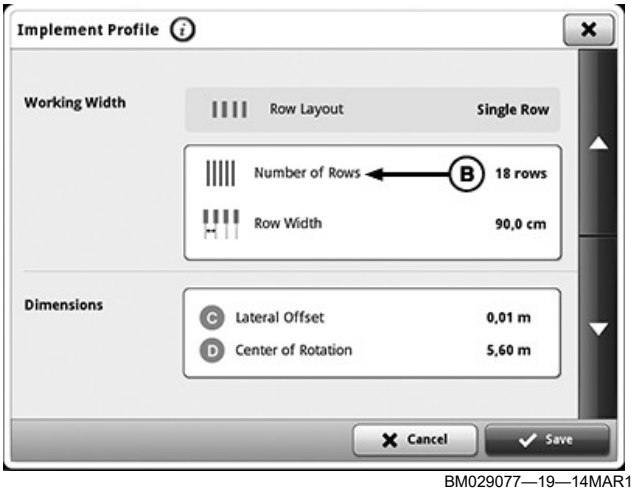
MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company

RowCommand is a trademark of Deere & Company
SeedStar is a trademark of Deere & Company



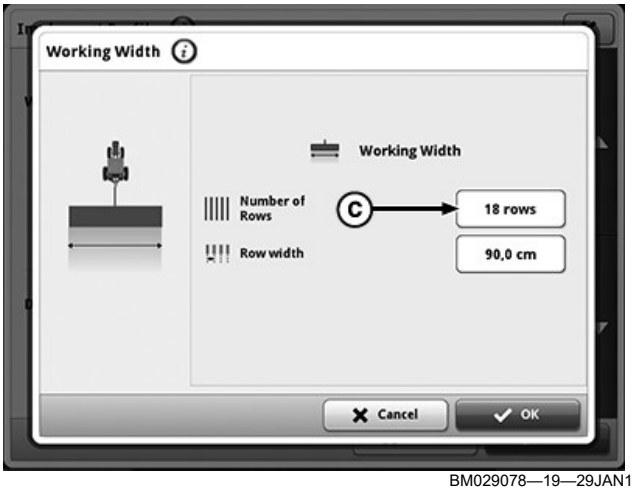
BM029202—19—14MAR19

1. Select button (A) to lower the page.



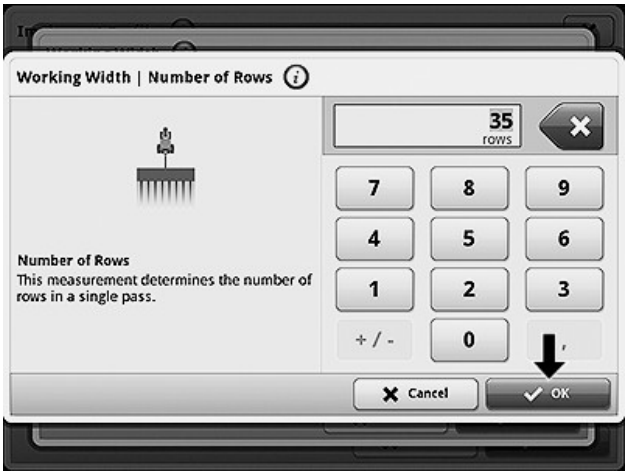
BM029077—19—14MAR19

2. Select **Number of Rows** (B).



BM029078—19—29JAN19

3. Select the input box (C).

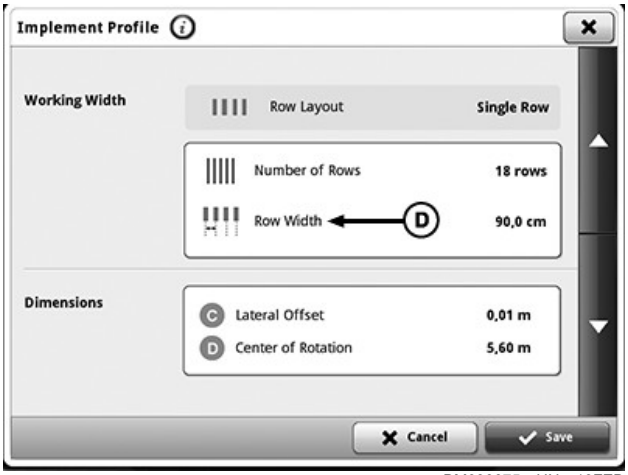


BM029079—19—14MAR19

4. Configure the numbers of the rows through the keyboard.

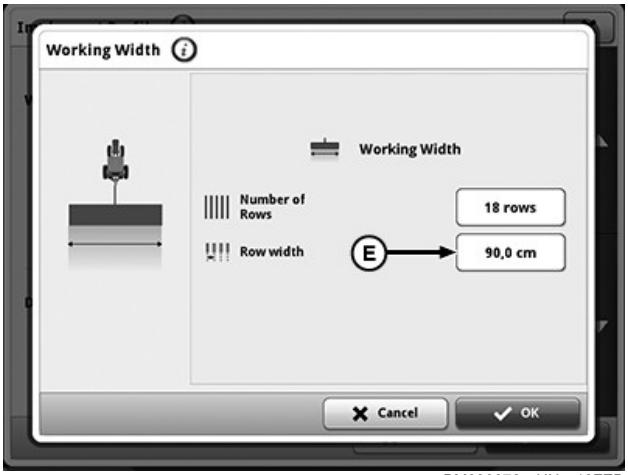
NOTE: The number of rows configured in this box is for a single pass.

5. Select the **OK** button.



BM030075—UN—13FEB19

6. Select **Row Width** (D).



BM030076—UN—13FEB19

7. Select the input box (E).



BM029083—19—29JAN19

8. Configure the width of the rows through the keyboard.

NOTE: This number determines the distance between the row crops.

9. Select the **OK** button.

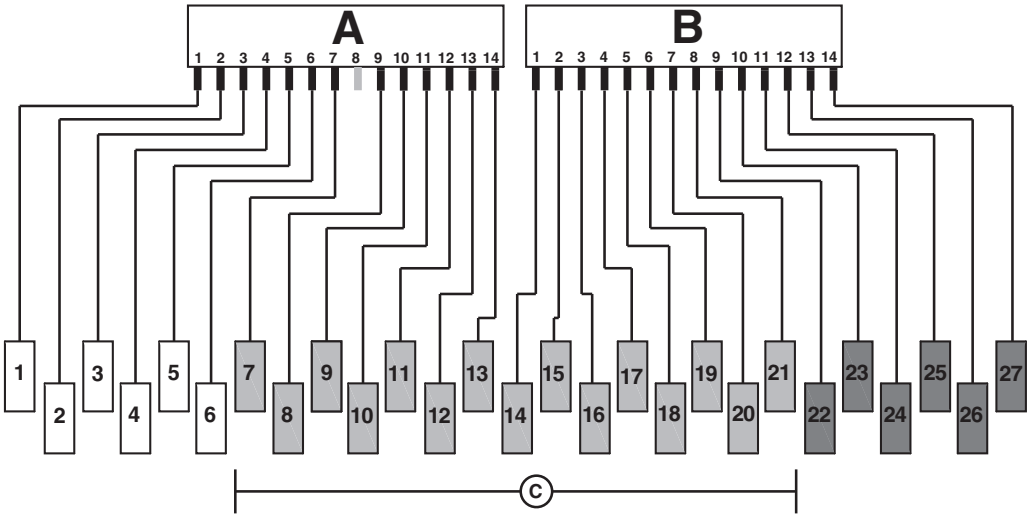
CR84017,0000854-19-27MAY21

Schematics— 14 Seed Distribution Connections

Diagrams illustrated show:

- **For DB40**: The hose connections from the central commodity system (CCS) tanks (A and B) to the row units.
- **For DB50 and DB74**: The hose connections from the CCS tanks (A, B, and C) to the steel seed delivery tubes and hoses that run directly from the tanks to the row units.
- **For DB90**: The hose connections from the CCS tanks (A, B, C, and D) to steel seed delivery tubes and hoses that run directly from the tanks to the row units.

DB40—27-Row Units with 45 cm (17.71 in) Spacing

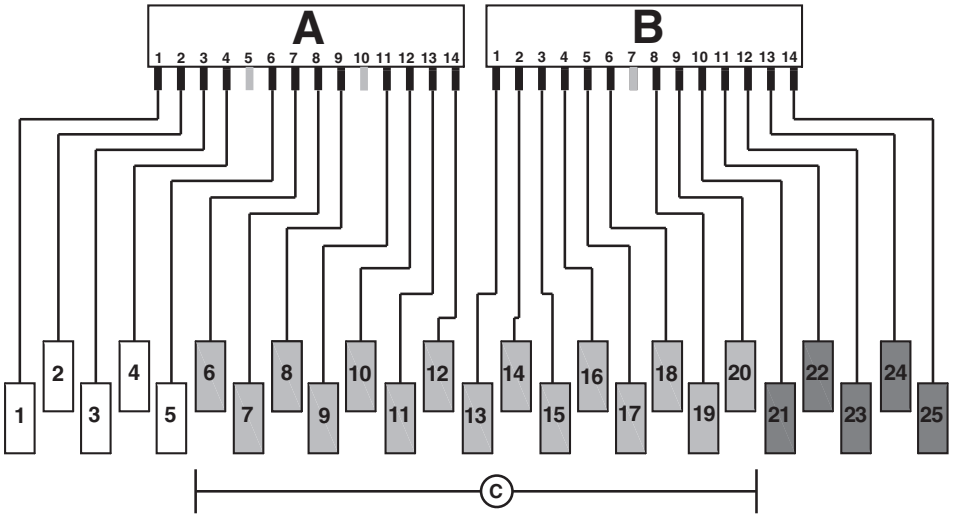


CQ298217—UN—01SEP14

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

NOTE: To equip the planters with 90 cm (35.43 in) spacing, remove all long row units.

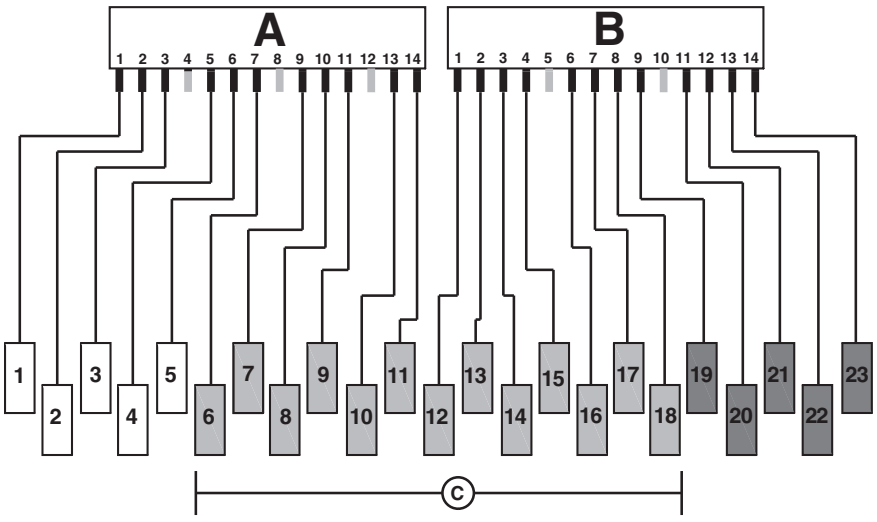
DB40—25-Row Units with 45 cm (17.71 in) Spacing



CQ298218—UN—01SEP14

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

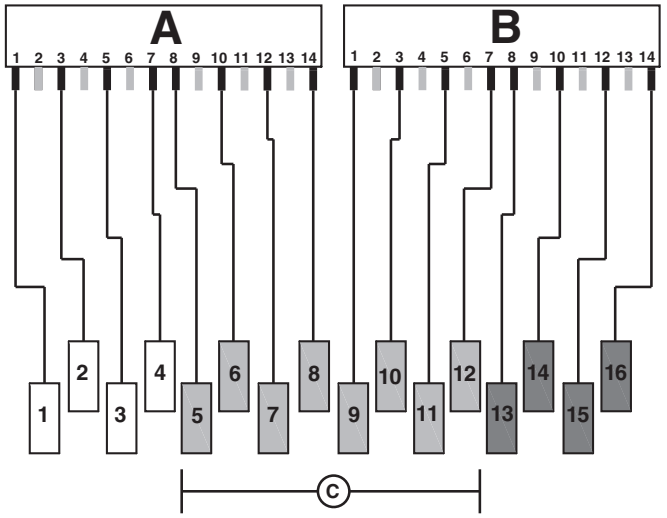
DB40—23-Row Units with 50 cm (19.68 in) Spacing



CQ298219—UN—01SEP14

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

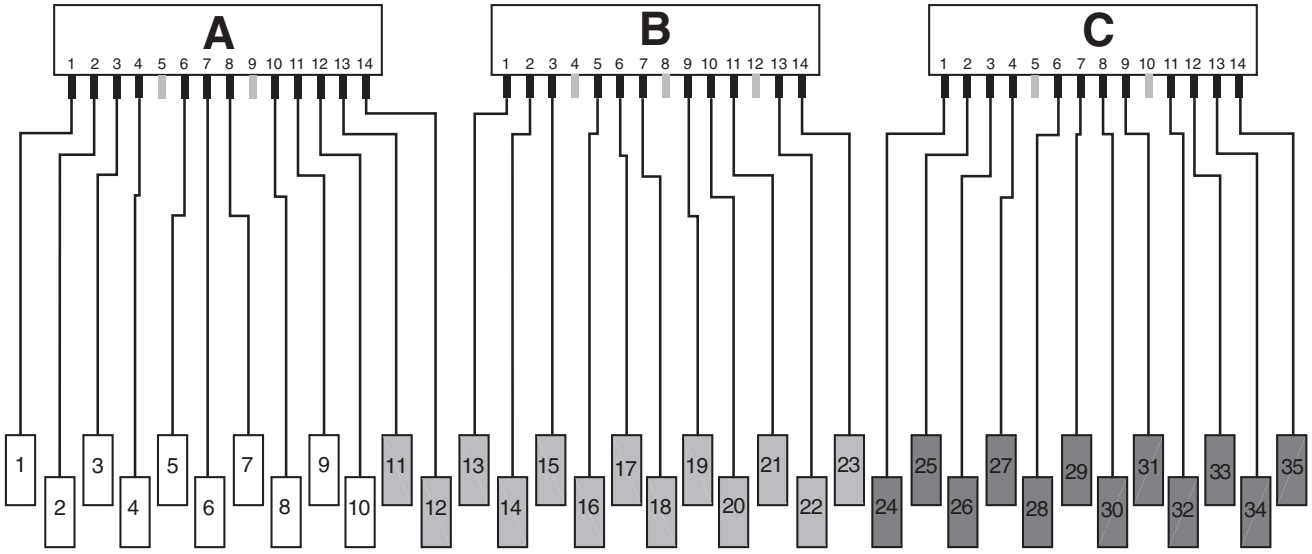
DB40—16-Row Units with 76 cm (29.92 in) Spacing



CQ298220—UN—25SEP14

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

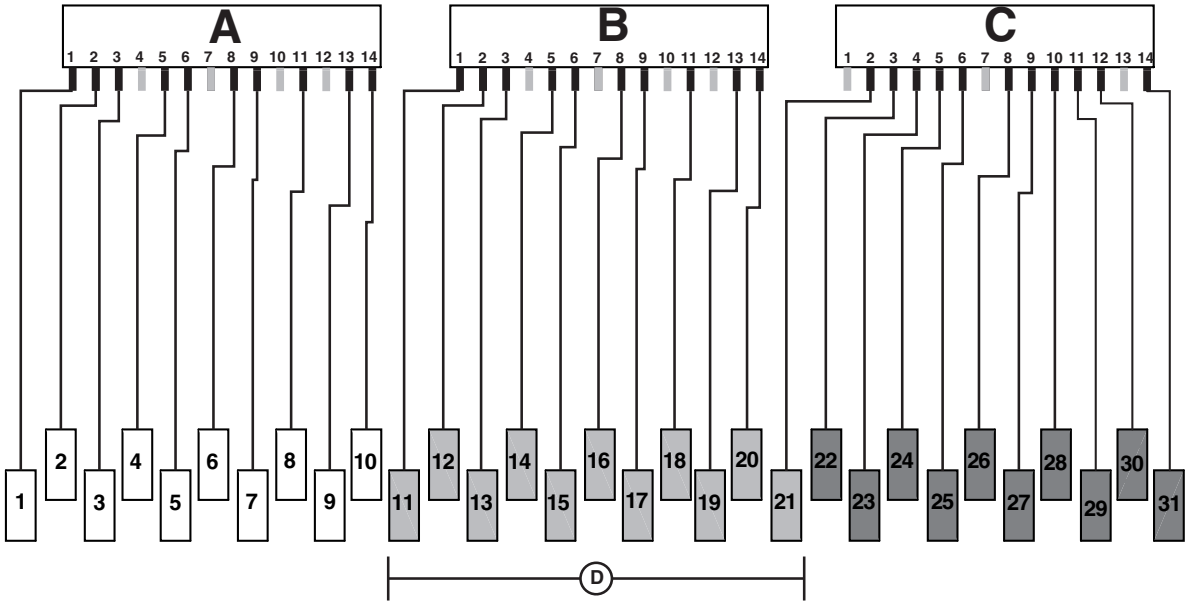
DB50—35-Row Units with 45 cm (17.71 in) Spacing



BM058055—UN—09FEB23

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank

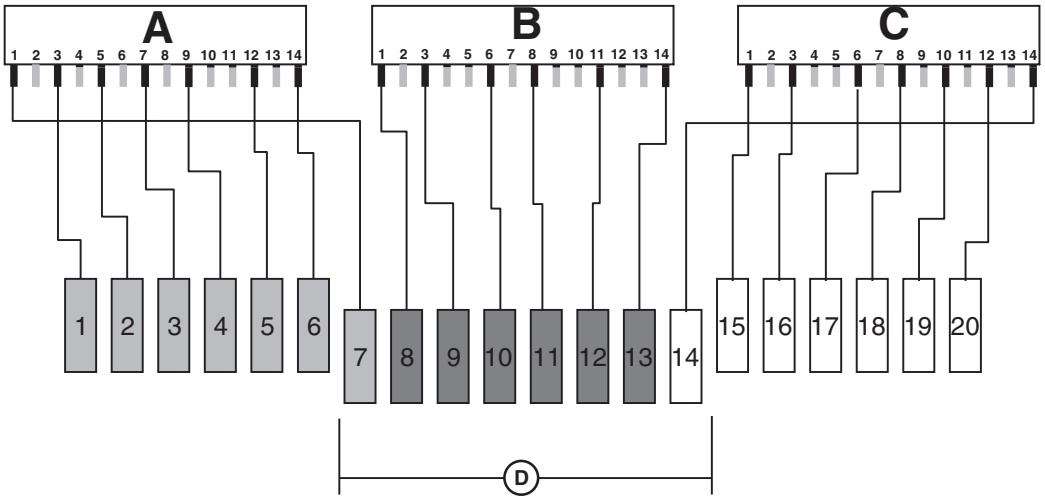
DB50—31-Row Units with 50 cm (19.68 in) Spacing



CQ296556—UN—18APR13

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units

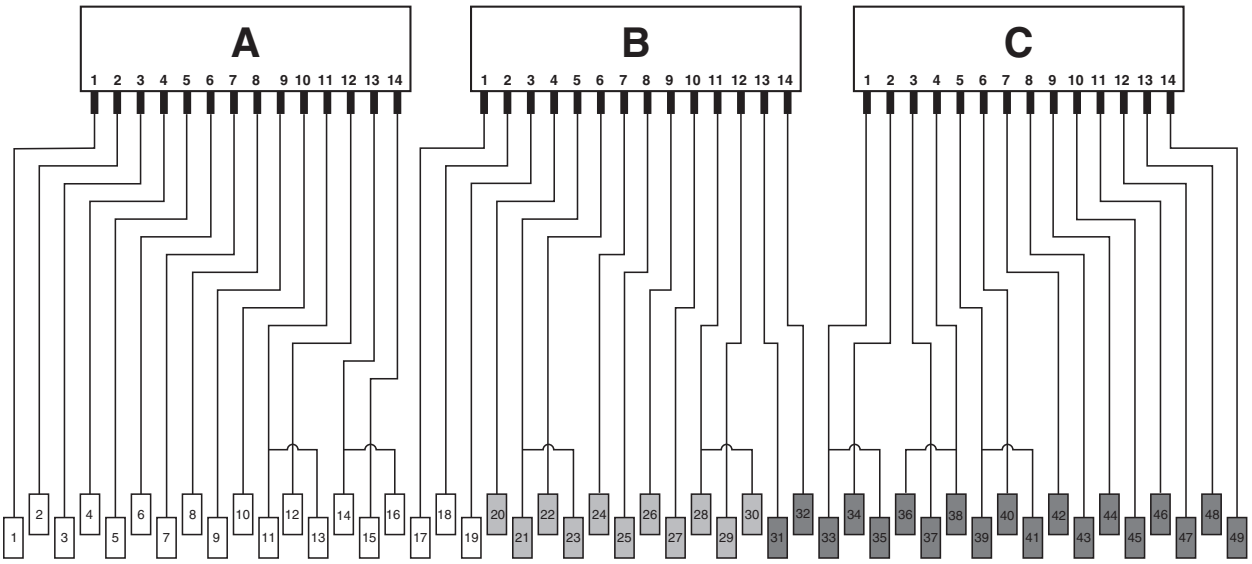
DB50—20-Row Units with 76 cm (29.92 in) Spacing



CQ297962—UN—03FEB14

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units

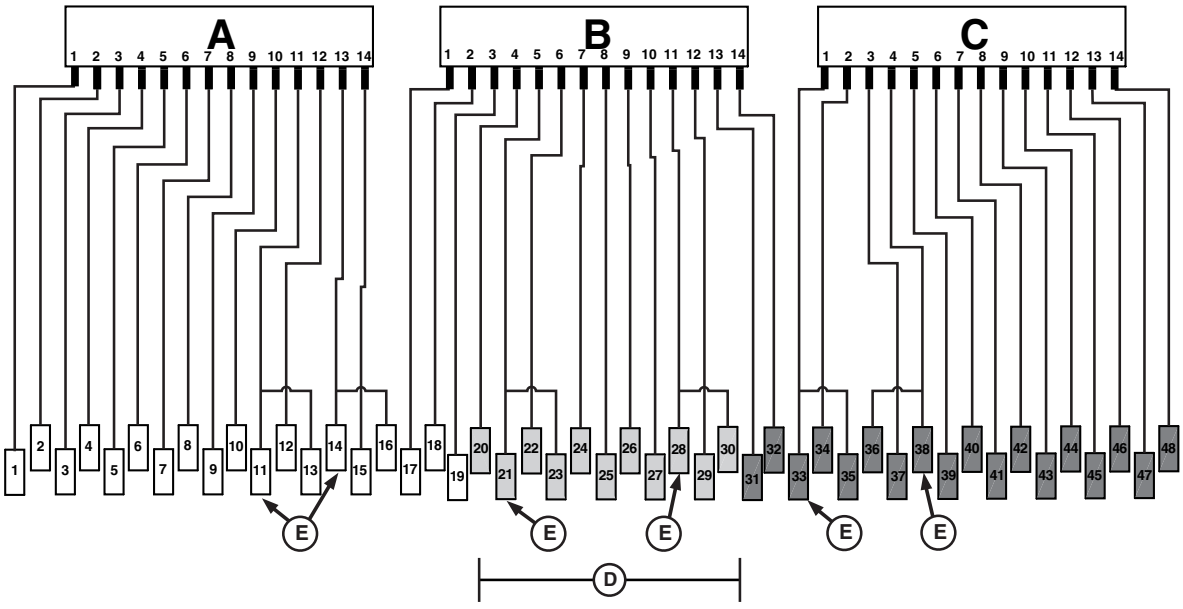
DB74—49-Row Units with 45 cm (17.71 in) Spacing



BM029351—UN—04MAY18

A—Left-Hand Side CCS Tank
B—Center CCS Tank
C—Right-Hand Side CCS Tank

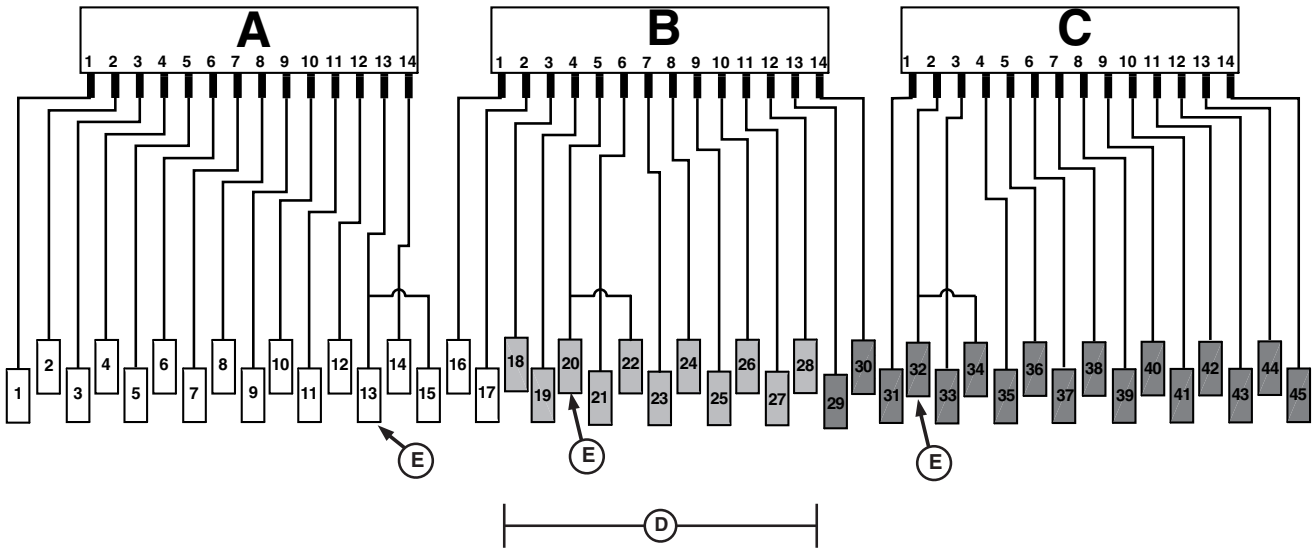
DB74—48-Row Units with 90/45 cm (17.71 in) Spacing



CQ296559—UN—18APR13

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units
E—Splitter Row Units

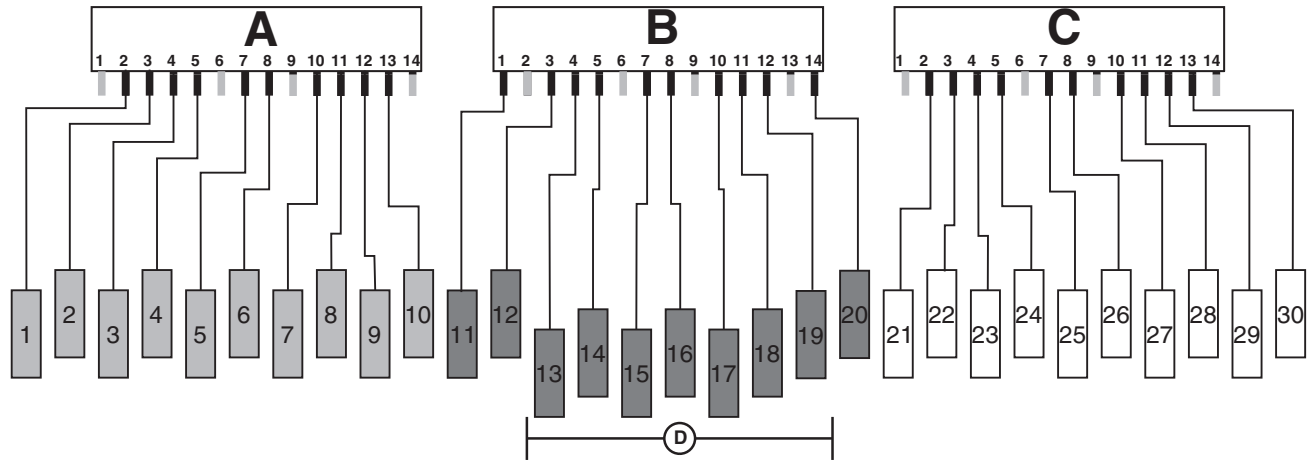
DB74—45-Row Units with 50 cm (19.68 in) Spacing



CQ296558—UN—18APR13

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Central CCS Tank
D—Center Frame Row Units
E—Splitter Row Units

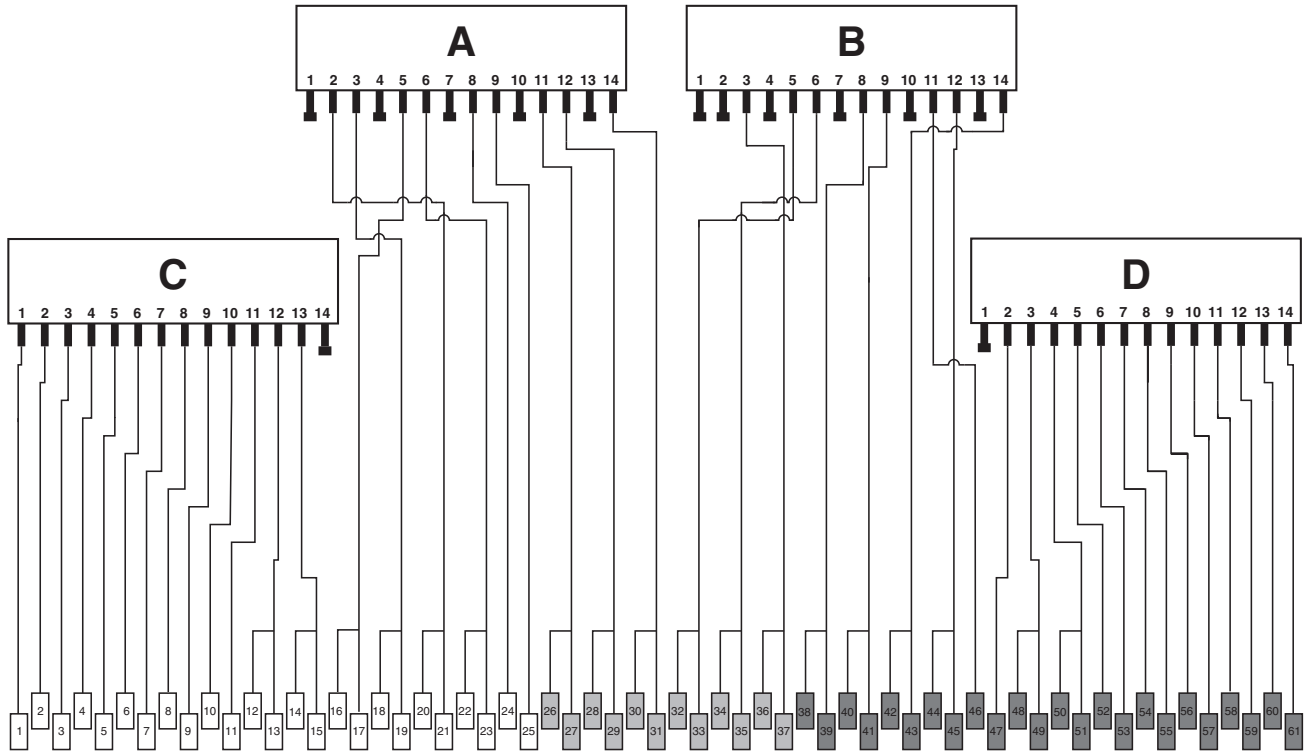
DB74—30-Row Units with 76 cm (29.92 in) Spacing



CQ297963—UN—03FEB14

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units

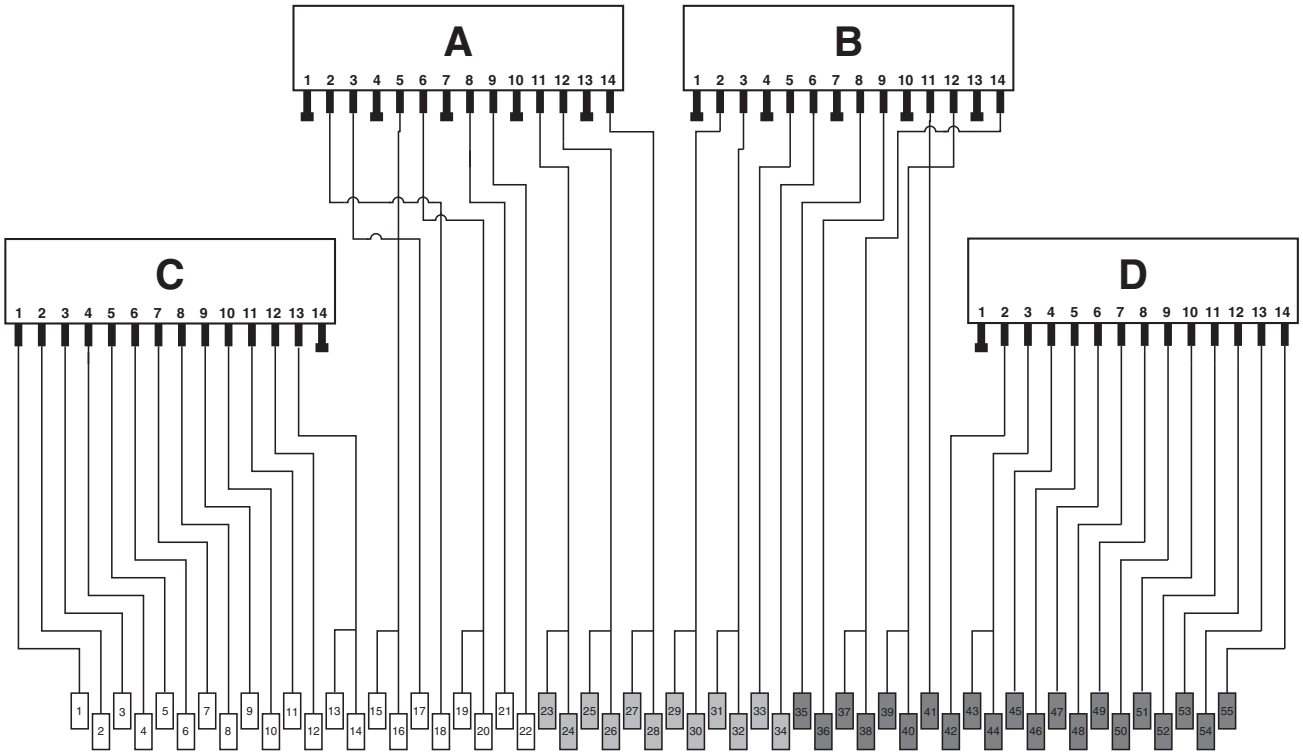
DB90—61-Row Units with 45 cm (17.71 in) Spacing



BM023318—UN—12NOV19

A—Left-Hand Side Front CCS Tank
B—Right-Hand Side Front CCS Tank
C—Left-Hand Side Rear CCS Tank
D—Right-Hand Side Rear CCS Tank

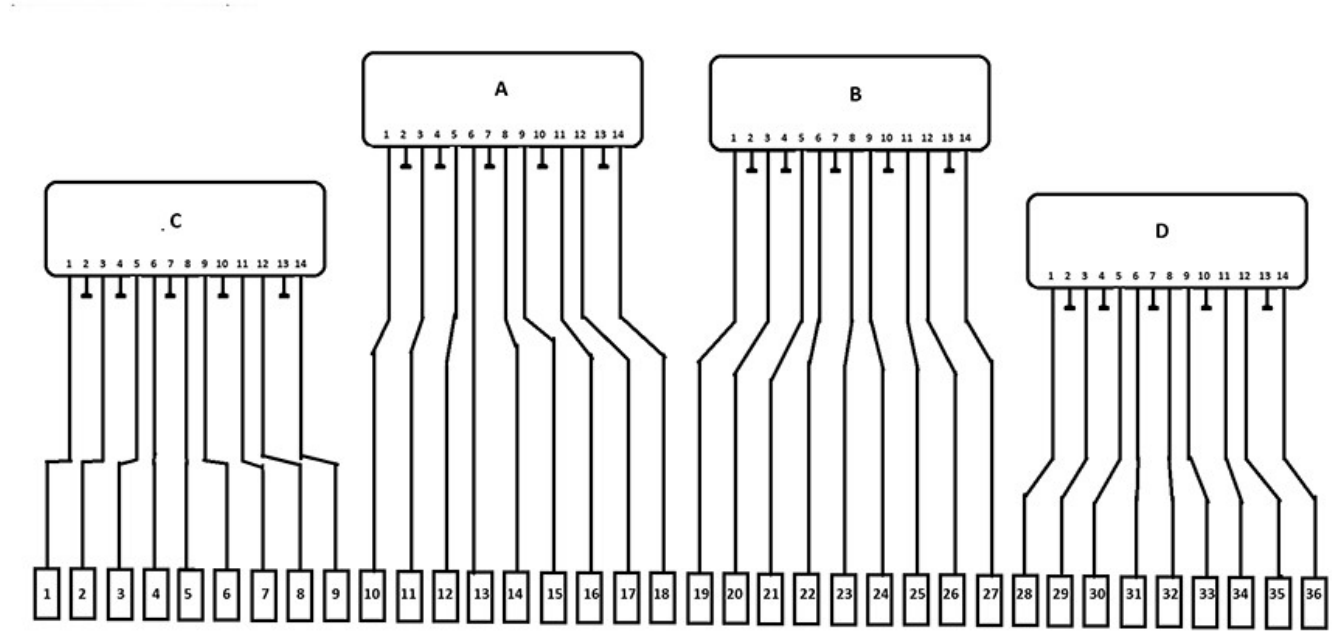
DB90—55-Row Units with 50 cm (19.68 in) Spacing



BM023319—UN—11DEC19

A—Left-Hand Side Front CCS Tank
B—Right-Hand Side Front CCS Tank
C—Left-Hand Side Rear CCS Tank
D—Right-Hand Side Rear CCS Tank

DB90—36-Row Units with 76 cm (29.92 in) Spacing



BML016007—UN—23JAN20

A—Left-Hand Side Front CCS Tank
B—Right-Hand Side Front CCS Tank
C—Left-Hand Side Rear CCS Tank
D—Right-Hand Side Rear CCS Tank

DB90—31 Row Units with 90 cm (35.43 in) Spacing

NOTE: To prepare the planter for 31 rows, it is necessary to remove all short rows from the diagram of the DB90 seed delivery hose with 61 rows and close unused outlets. (See DB90—45 cm (17.71 in) Spacing 61 Row Units in this procedure.)

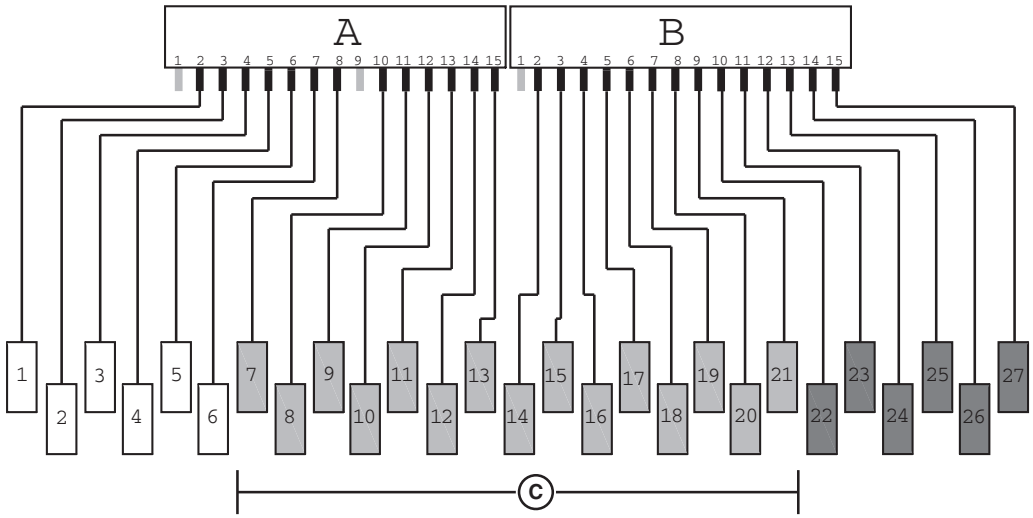
h3ymaet,1674150273181-19-09FEB23

Schematics—15 Seed Distribution Connections

Diagrams illustrated show:

- **For DB40**: The hose connections from the central commodity system (CCS) tanks (A and B) to the row units.
- **For DB50 and DB74**: The hose connections from the CCS tanks (A), (B), and (C) to the steel seed delivery tubes and hoses that run directly from the tanks to the row units.
- **For DB90**: The hose connections from the CCS tanks (A), (B), (C), and (D) to steel seed delivery tubes and hoses that run directly from the tanks to the row units.

DB40—45 cm (17.71 in) Spacing 27 Row Units

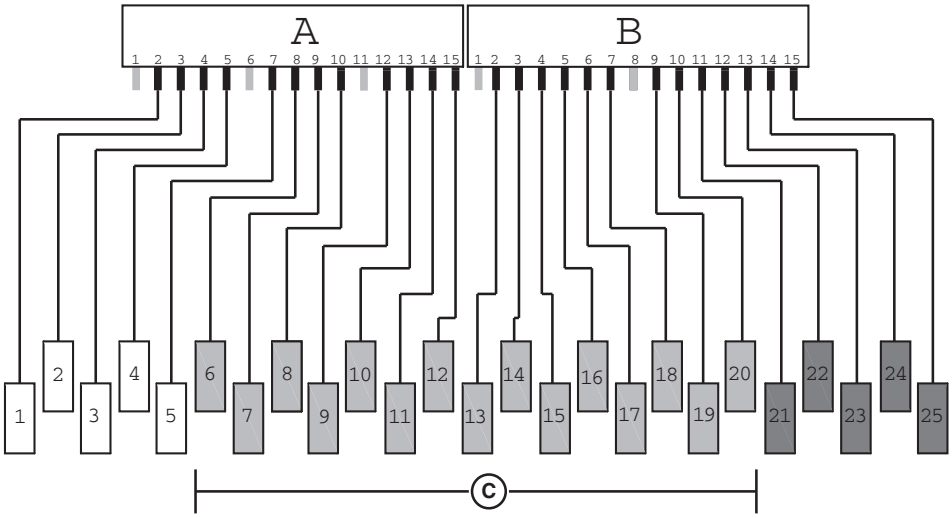


BML004468—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

NOTE: To prepare the planter for a spacing of 90 cm (35.43 in), remove all the long row units.

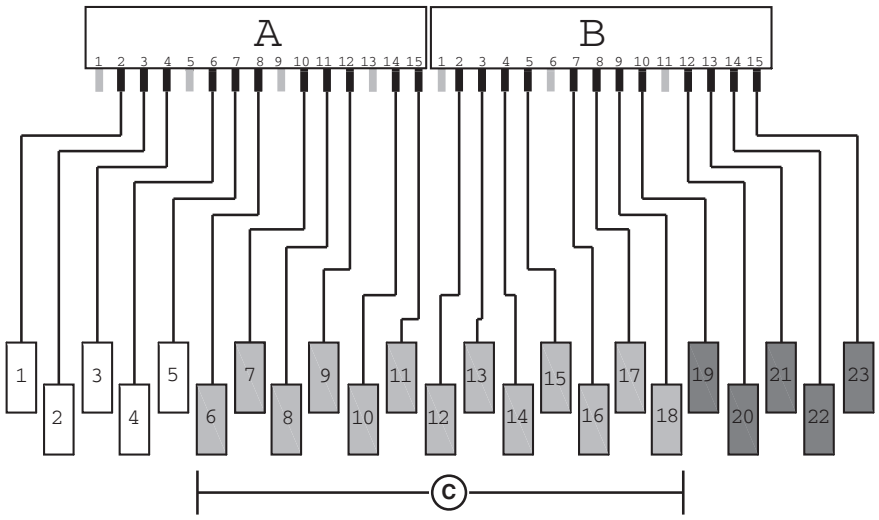
DB40—45 cm Spacing (17.71 in) 25 Row Units



BML004469—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

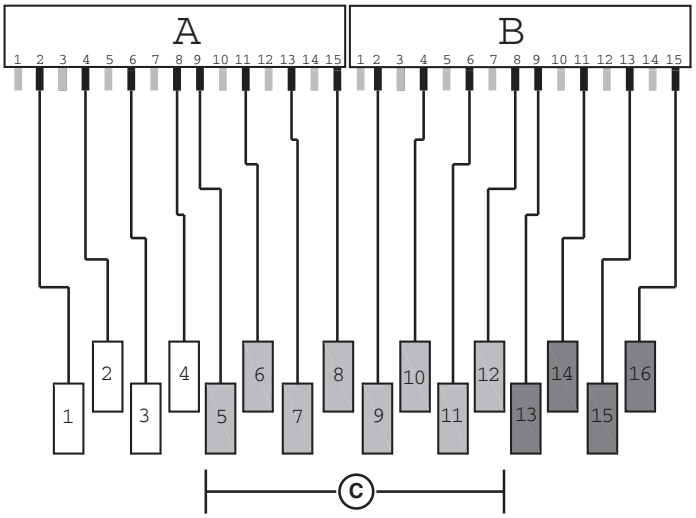
DB40—23 Row Units with 50 cm (19.68 in) Spacing



BML004470—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

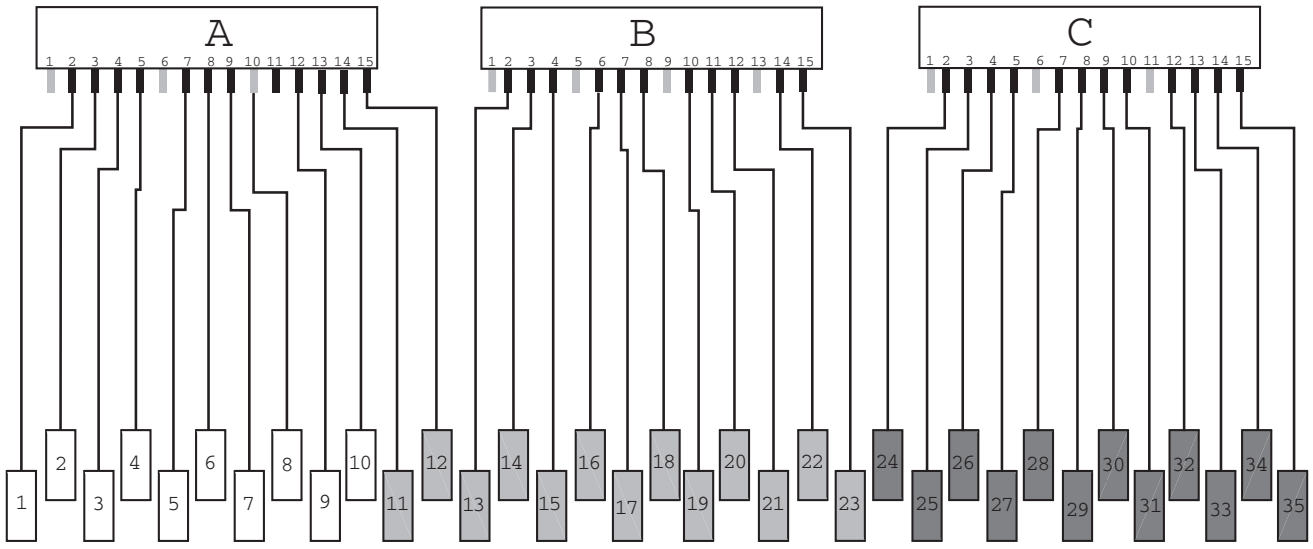
DB40—16 Row Units with 76 cm (29.92 in) Spacing



BML004471—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Center Frame Row Units

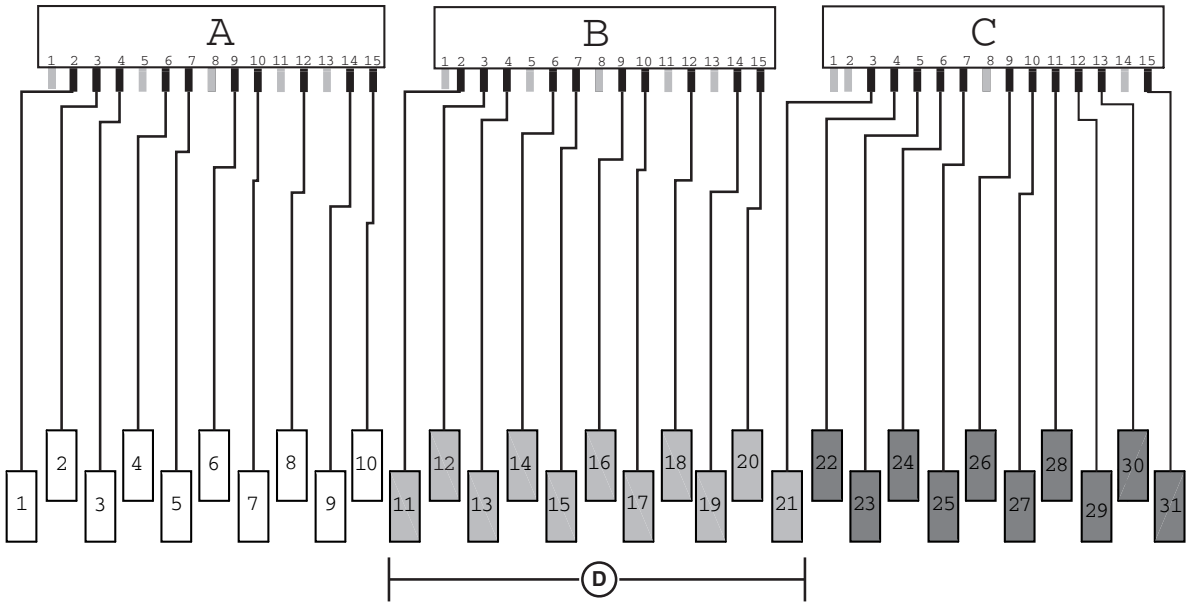
DB50—35 Row Units with 45 cm (17.71 in) Spacing



BML004472—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank

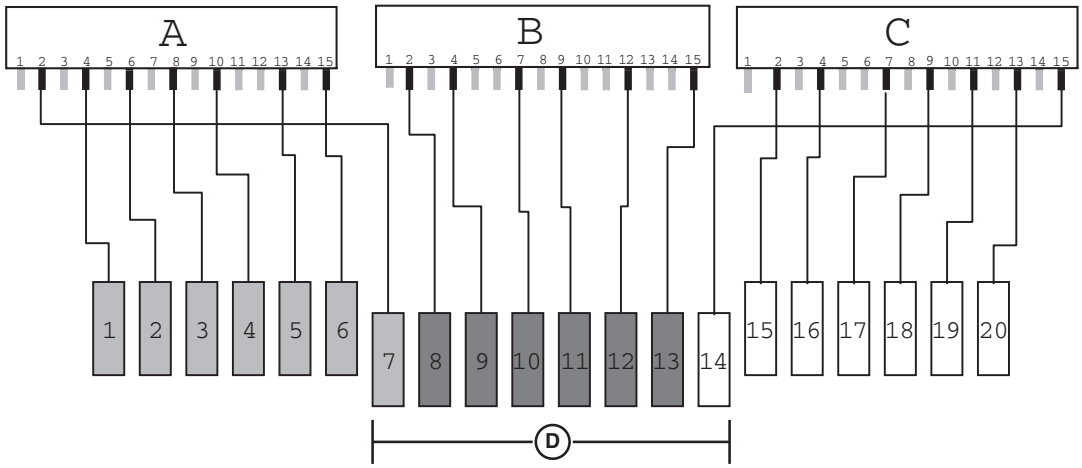
DB50—31 Row Units with 50 cm (19.68 in) Spacing



BML004473—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units

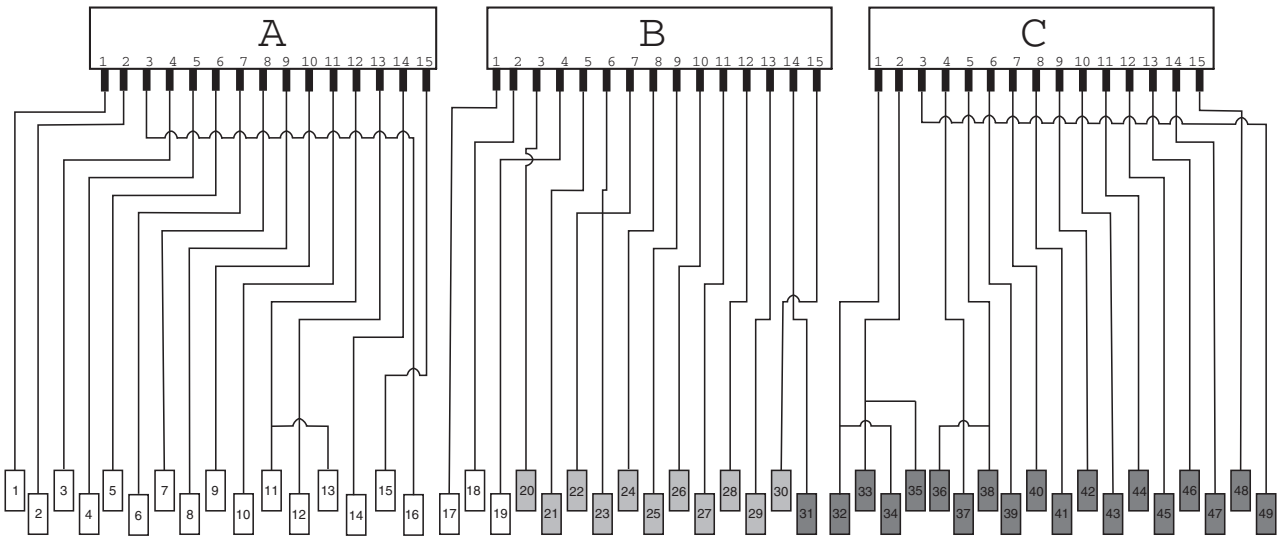
DB50—20 Row Units with 76 cm (29.92 in) Spacing



BML004474—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units

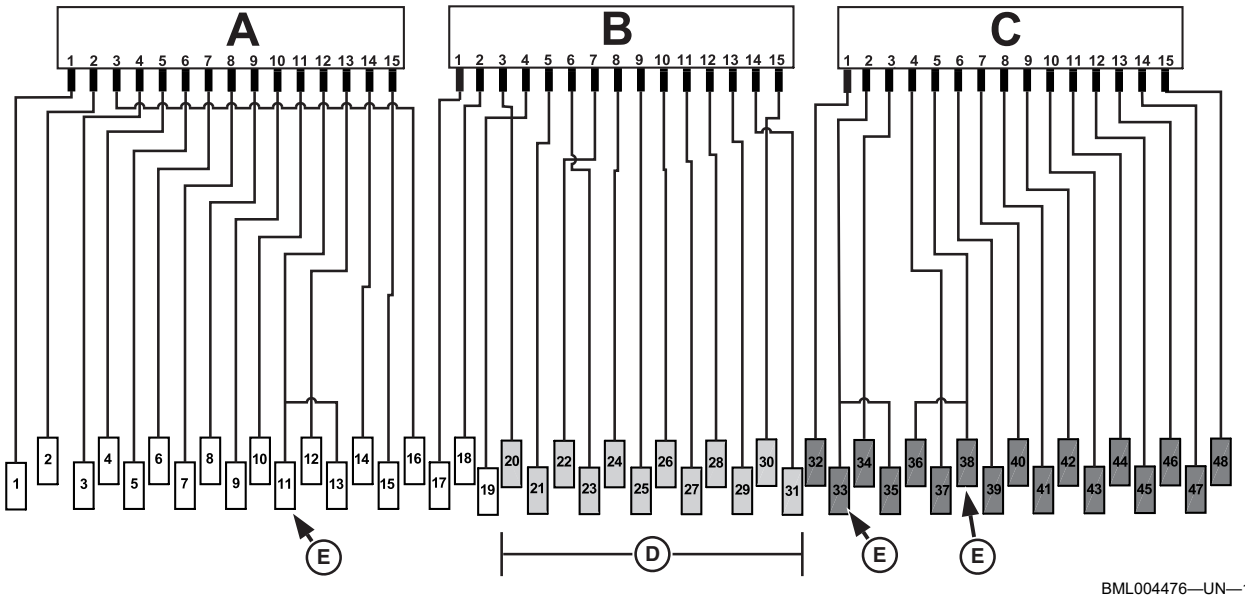
DB74—49 Row Units with 45 cm (17.71 in) Spacing



BML004475—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Center CCS Tank
C—Right-Hand Side CCS Tank

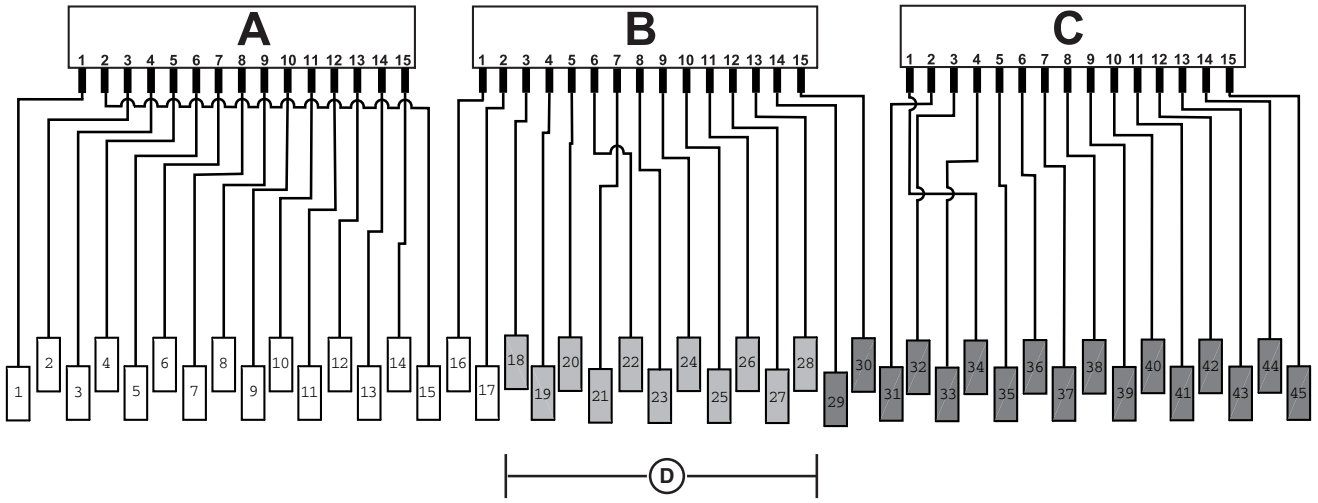
DB74—48 Row Units with 45 cm (17.71 in) Spacing



BML004476—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units
E—Splitter Row Units

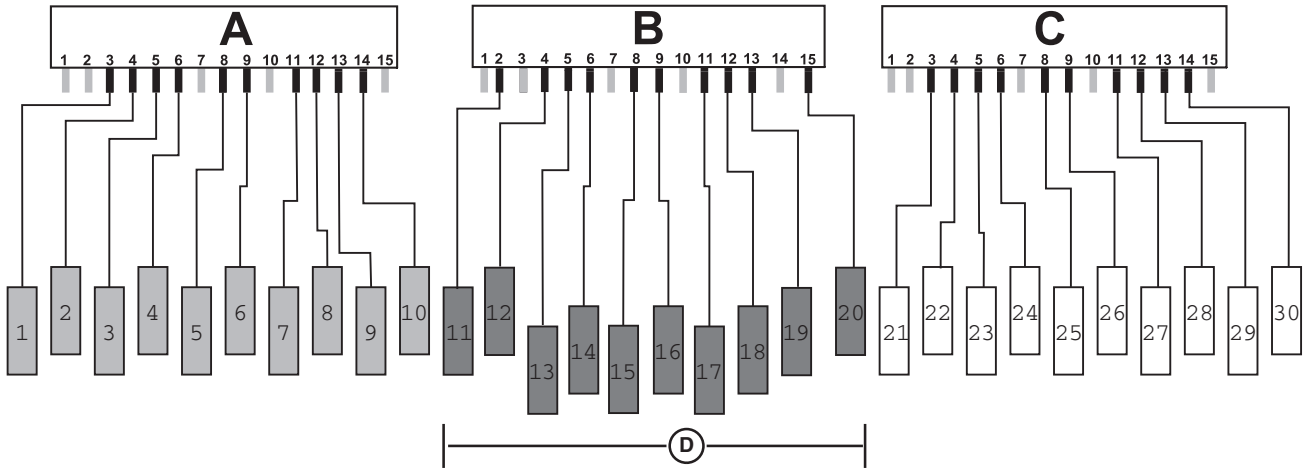
DB74—45 Row Units with 50 cm (19.68 in) Spacing



BML004477—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Right-Hand Side CCS Tank
C—Central CCS Tank
D—Center Frame Row Units

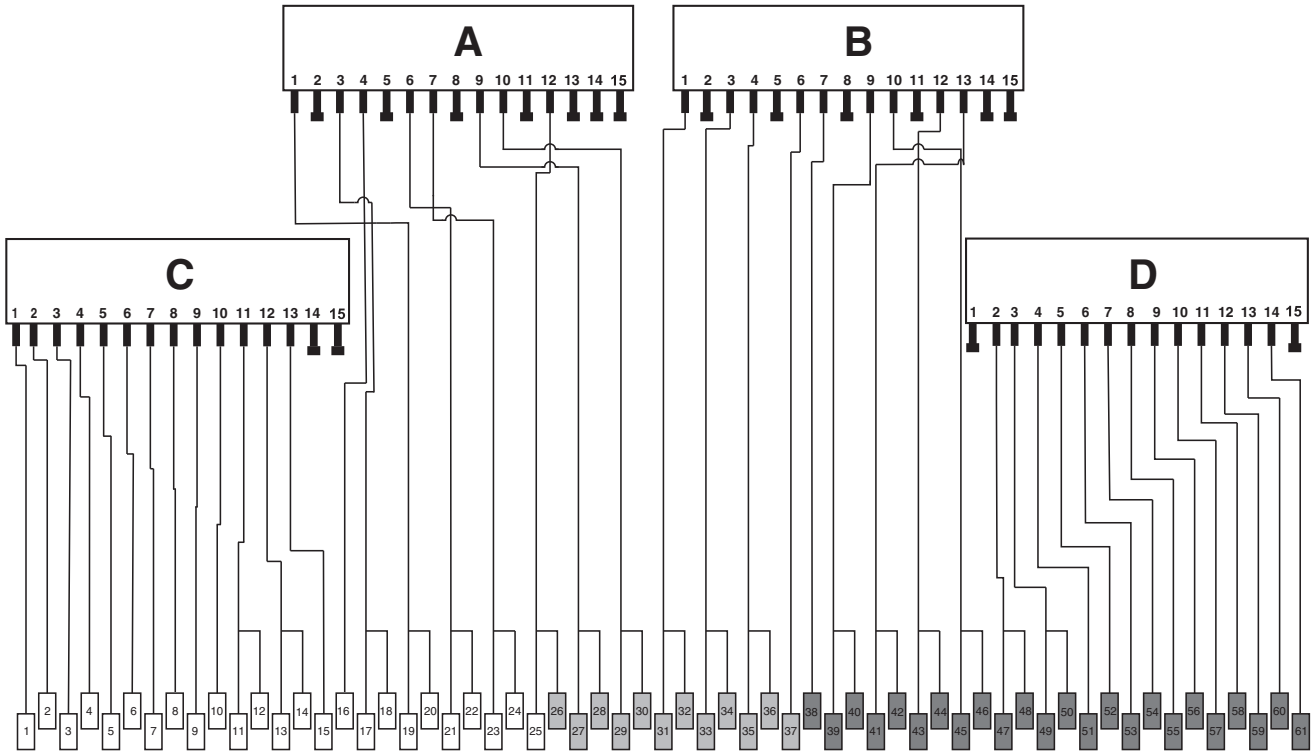
DB74—30 Row Units with 76 cm (29.92 in) Spacing



BML004478—UN—11MAY21

A—Left-Hand Side CCS Tank
B—Central CCS Tank
C—Right-Hand Side CCS Tank
D—Center Frame Row Units

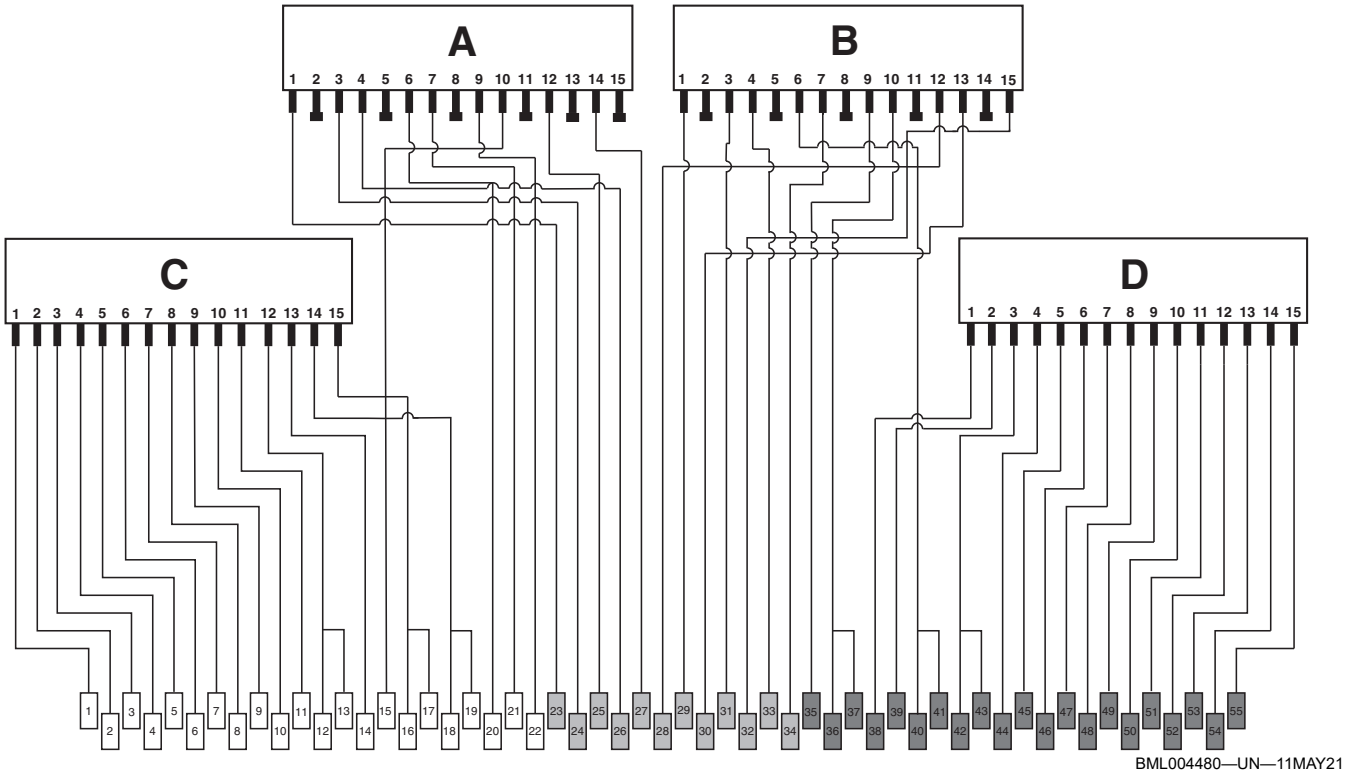
DB90—61 Row Units with 45 cm (17.71 in) Spacing



BML004479—UN—11MAY21

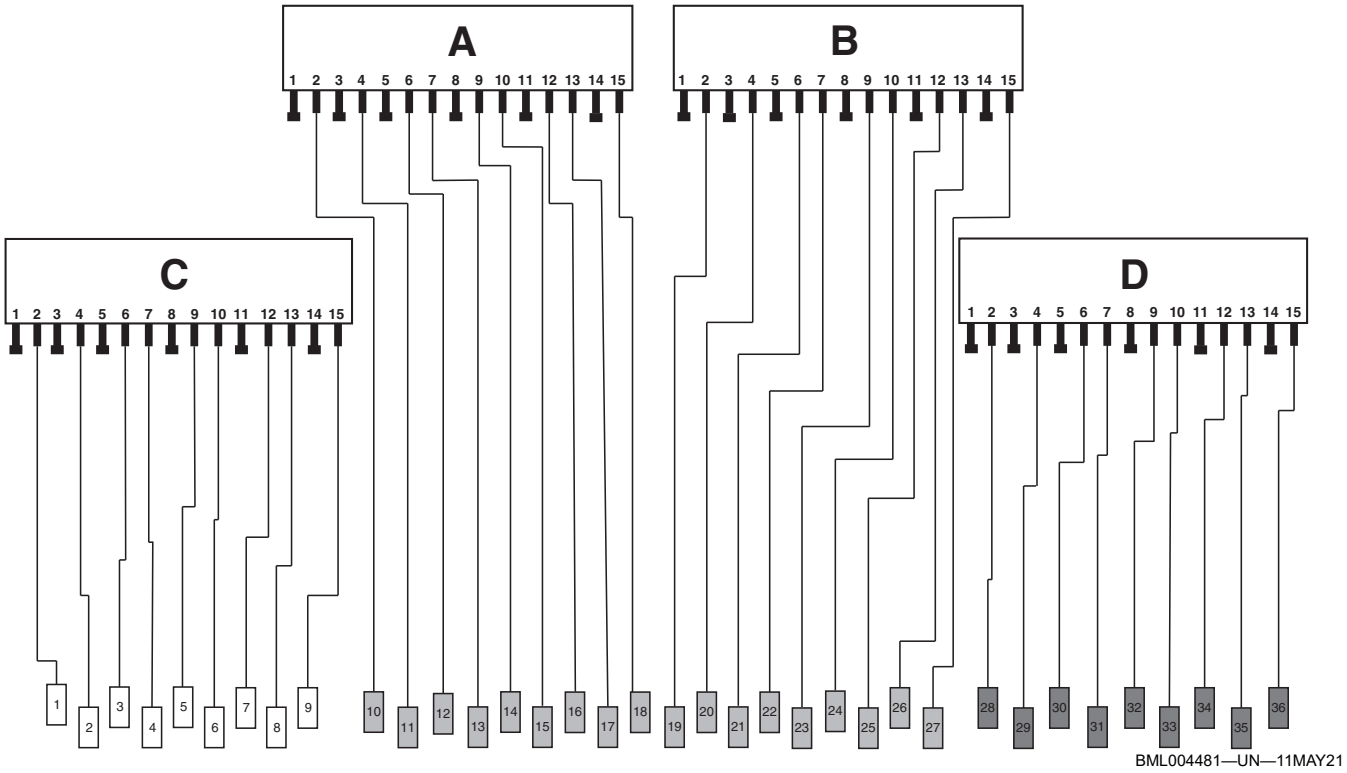
A—Left-Hand Side Front CCS Tank
B—Right-Hand Side Front CCS Tank
C—Left-Hand Side Rear CCS Tank
D—Right-Hand Side Rear CCS Tank

DB90—55 Row Units with 50 cm (19.68 in) Spacing



A—Left-Hand Side Front CCS Tank
B—Right-Hand Side Front CCS Tank
C—Left-Hand Side Rear CCS Tank
D—Right-Hand Side Rear CCS Tank

DB90—36 Row Units with 76 cm (29.92 in) Spacing



A—Left-Hand Side Front CCS Tank
B—Right-Hand Side Front CCS Tank
C—Left-Hand Side Rear CCS Tank
D—Right-Hand Side Rear CCS Tank

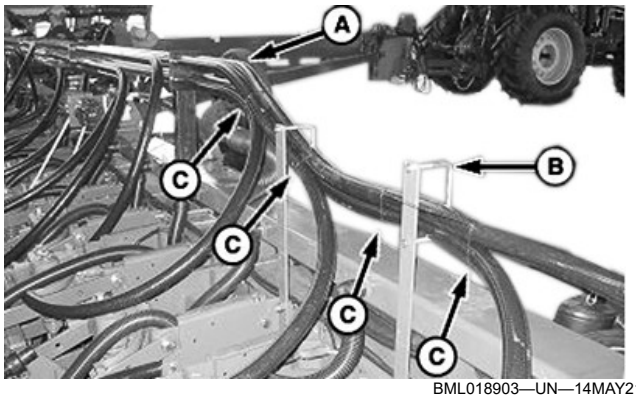
DB90—31 Row Units with 90 cm (35.43 in) Spacing

NOTE: To prepare the planter for 31 rows, it is necessary to remove all the short rows from the diagram of the DB90 seed delivery hose with 61 rows and close unused outlets. (See DB90—61 Row Units with 45 cm (17.71 in) Spacing in this procedure.)

h3ymaet,1674150361944-19-27JAN23

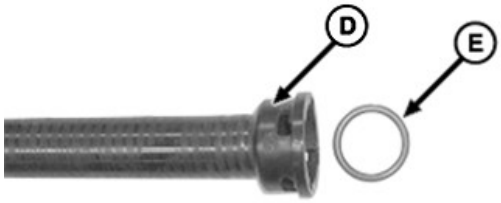
Install Seed Delivery Hoses

IMPORTANT: Machine must be folded before measuring, cutting, and installing seed delivery hoses from the central commodity system (CCS™) tanks to row units and steel seed delivery tubes.



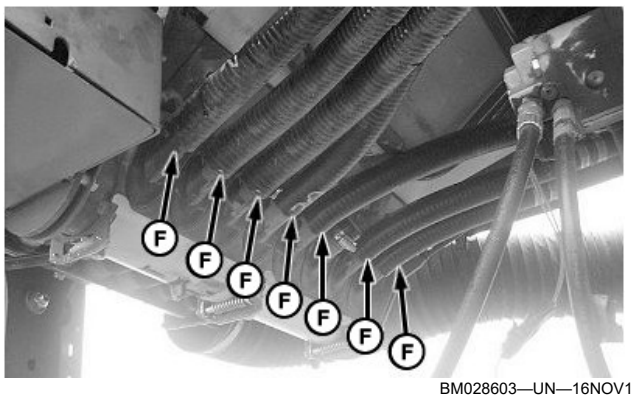
BML018903—UN—14MAY21

1. Lubricate the inside of hose (A) with soapy water and slide hose through the steel seed tube until hose contacts the tube stop.
2. Route the seed delivery hoses (A) through hose supports (B) to correct row.
3. Secure the hoses using tie bands (C).



BM028602—UN—13FEB19

4. Lubricate the inside of the hose with soapy water and install the female coupler (D) with O-ring (E).



BM028603—UN—16NOV17

NOTE: The schematics of the seeds distribution connections (F) show rows connected to CCS™ tank.

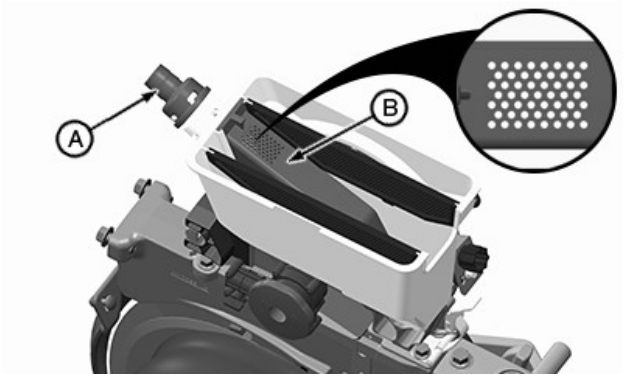
The hoses from the CCS™ tank run directly to row units.

5. Measure from the CCS™ tank to the row unit feeds. Cut hoses to length from bulk hose.
6. Install yellow caps on seed delivery hoses not used in this application. Secure hose to frame with a tie band to prevent damage.

Splitter Row Units—DB74 and DB90

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

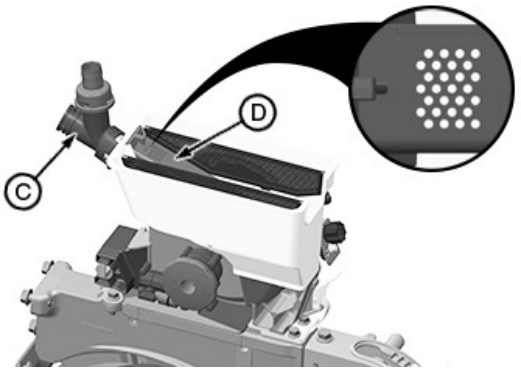
1. Remove the standard discharge elbow (B).
2. Remove the single inlet connector (A).



CQ297961—UN—28JAN14

3. Install the splitter inlet connector (C).

CCS is a trademark of Deere & Company



CQ297960—UN—28JAN14

4. Install the discharge elbow on the double feeder (D) that has smaller holes.

CR84017,0000856-19-12MAY21

Row Unit Sensor Position

NOTE: Never disconnect or connect the row unit with the power generation system connected.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
					V																	
					S						S						S					

DB40/23 Row Units 50 cm Spacing

- **1—23**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
					V																	
					S						S						S					

DB40/23 Row Units 52.5 cm Spacing

- **1—23**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

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
				V																				
				S								S								S				

DB40/25 Row Units 45 cm Spacing

- **1—25**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

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
					V																					
					S								S								S					

DB40/27 Row Units 45 cm Spacing

- **1—27**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
				V											
				S				S						S	
17	18	19	20	21	22	23	24	25	26	27	28	29			
				S				S							

DB50/29 Row Units 52.5 cm Spacing

- **1—29**: Row Units
- **V**: Vacuum Sensor

- **S**: Pneumatic Downforce Sensor

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
					V										
					S				S						S
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
					S				S						

DB50/31 Row Units 50 cm Spacing

- **1—31**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
					V												
					S						S						
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
S					S						S						

DB50/35 Row Units 45 cm Spacing

- **1—35**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
						V																
						S								S								S
24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
							S								S							

DB74/45 Row Units 50 cm Spacing

- **1—45**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

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
								V																
								S								S								S
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	
							S								S									

DB74/49 Row Units 45 cm Spacing

- **1—49**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor

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
					V																			
					S								S								S			
26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43							
				S								S												

DB74/43 Row Units 52.5 cm Spacing

- **1—43**: Row Units
- **V**: Vacuum Sensor

- **S**: Pneumatic Downforce Sensor
- **H**: Row Switch

Row Unit Sensor Position—Only for DB90 (If Equipped)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
							V								
		S					S			S					S
															H
			H2											H2	
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
				S			S					S			
											H2				

DB90/31 Row Units 90 cm Spacing

- **1—31**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor, MaxEmerge 5E only
- **H**: Row Switch
- **H2**: Height Switch (RowCommand), MaxEmerge 5 only

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
							V										
		S					S					S				S	
																	H
				H2													H2
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
				S					S					S			
													H2				

DB90/36 Row Units 76 cm Spacing

- **1—36**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor, MaxEmerge 5E only
- **H**: Row Switch
- **H2**: Height Switch (RowCommand), MaxEmerge 5 only

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
									V									
			S						S								S	
					H2													
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
						S								S				
								H										
						H2												
39	40	41	42	43	44	45	46	47	48	49	50	51						
	S						S											
											H2							

DB90/51 Row Units 52.5 cm Spacing

- **1—51**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor, MaxEmerge 5E only
- **H**: Row Switch
- **H2**: Height Switch (RowCommand), MaxEmerge 5 only

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
											V							
				S							S							
					H2													
20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
S								S								S		
								H										
						H2												
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55		
					S								S					
											H2							

DB90/55 Row Units 50 cm Spacing

- **1—55**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor, MaxEmerge 5E only
- **H**: Row Switch
- **H2**: Height Switch (RowCommand), MaxEmerge 5 only

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
												V								
				S								S								S
						H2														
22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
									S										S	
									H											
							H2													
43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61		
						S								S						
												H2								

DB90/61 Row Units 45 cm Spacing

- **1—61**: Row Units
- **V**: Vacuum Sensor
- **S**: Pneumatic Downforce Sensor, MaxEmerge 5E only
- **H**: Row Switch
- **H2**: Height Switch (RowCommand), MaxEmerge 5 only

h3ymaet,1696333175118-19-11JUN24

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 (only for ExactEmerge™ and MaxEmerge™ 5e), see the SeedStar™ 4 Monitor Operator's Manual.



BM028505—UN—15NOV18

1. Attach a short chain from the indicated anchor points (A) to one or more sets of closing wheels so that seed furrow remains open.

NOTE: The tension in the spring must be relieved to carry out the check. (See Adjust Closing Wheel Downforce in Operating the Planter section.)

2. Adjust the depth handle (B) two positions from minimum.
3. Plant over a short distance and check if the seeds are visible in the furrow. Adjust the depth handle (B), 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 the markers (C).
6. Count the 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.

NN32476,00003B9-19-12MAY21

ExactEmerge is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company
SeedStar is a trademark of Deere & Company

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 frame ballast when the conditions require.
4. This is important when the frame-mounted coulter is being used.

ER40675,00004E6-19-09MAR20

SeedStar™ Variable Rate Drive System

The variable rate drive system uses hydraulic motors to drive the seed meters. The speed of each motor can be changed by using the SeedStar™ monitor in the tractor cab.

- The operator can match the seed population to different soil types or match irrigated versus dry soils.
- Multiple rate selections can be programmed and applied as required.

For more information, see SeedStar™ Monitor Operator's Manual.

NN32476,0000080-19-09MAR20

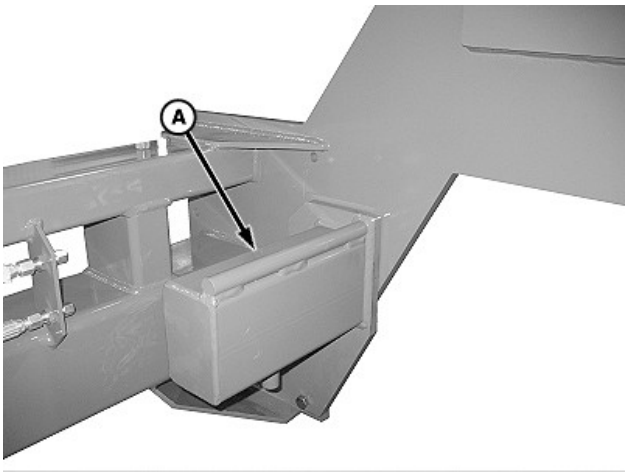
RowCommand™

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. Contact your John Deere dealer or other service provider.

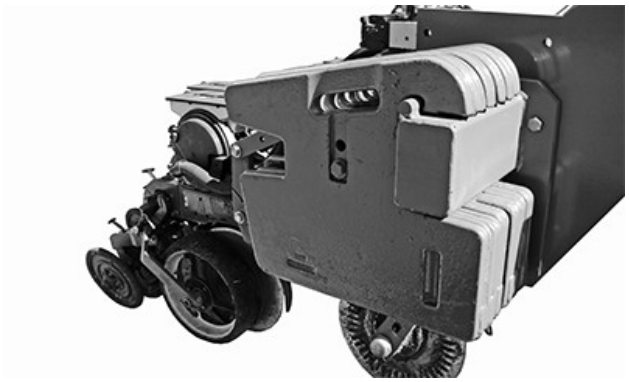
WP29706,00007A6-19-22JAN25

SeedStar is a trademark of Deere & Company
RowCommand is a trademark of Deere & Company

Attach the Ballast



A68036—UN—02JUL10



CQ298221—UN—01SEP14

DB40—45 cm (17.71 in) Spacing

Ballast bracket (A), located in place of markers, accepts tractor weights.

Place weights on the bracket as required for proper row unit penetration in hard ground conditions.

IMPORTANT: For the DB40 with 45 cm (17.71 in) spacing, use the ballast bracket at the outside of the wing frame on both sides of machine.

NOTE: A full set of weights on the ballast bracket is equal to marker weight in raised position.

ER40675,0000350-19-09MAR20

SeedStar™ Integrated Pneumatic Downforce System (If Equipped)

The SeedStar™ integrated pneumatic downforce (PDF) system provides “on-the-go” downforce pressure changes to the planting 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.

NN32476,0000380-19-28APR21

SeedStar™ Electric Drive System

The seed meter ExactEmerge™ 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.

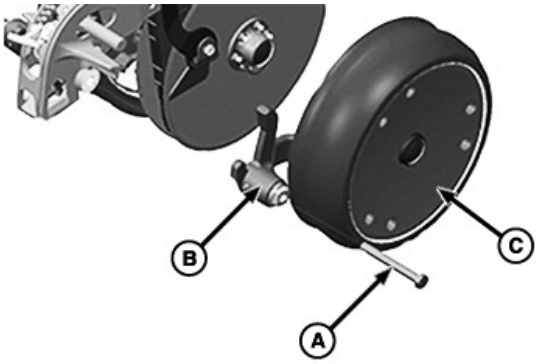
For more information, see SeedStar™ Application Help.

NN32476,0000381-19-18MAY21

Depth Gauge Wheel Spacer Bushing

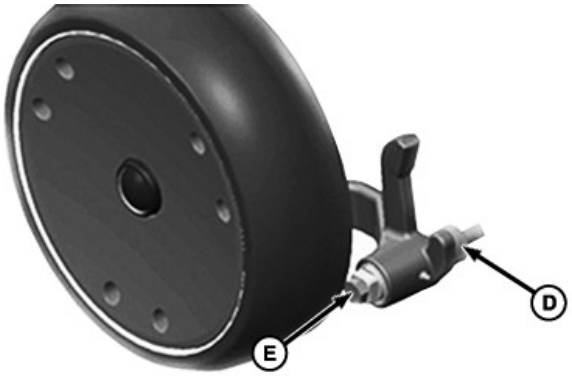
NOTE: In situations of humid soil or difficult handing, it is possible to install a kit, which allows a greater distance from the calibrating wheels of the seed disk. Consult your John Deere dealer for more information.

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).



BM028528—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

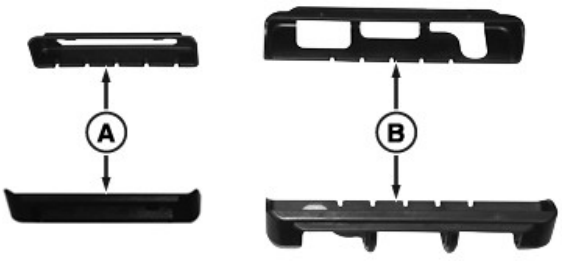
Depth Gauge Wheel Screw—Torque	280 N·m (206 lb·ft)

*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.*

K2F379Y,00000D0-19-18MAY21

Assemble Tablet Support

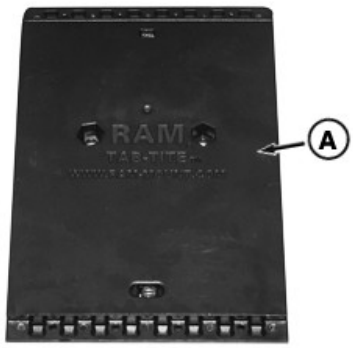
Assemble Tablet Support



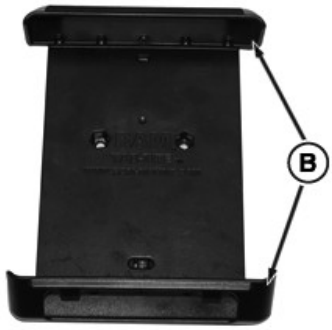
RXA0147500—UN—04MAR15

1. Select proper end caps. End caps (A) fit Motorola™ Xoom™ and similar. End caps (B) fit iPad™ and similar.

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ExactEmerge is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company



RXA0147501—UN—02MAR15



RXA0147502—UN—02MAR15

2. Install the end caps (B) into the tablet holder (A) with supplied screws.

NOTE: Top end cap is spring loaded for tablet installation.

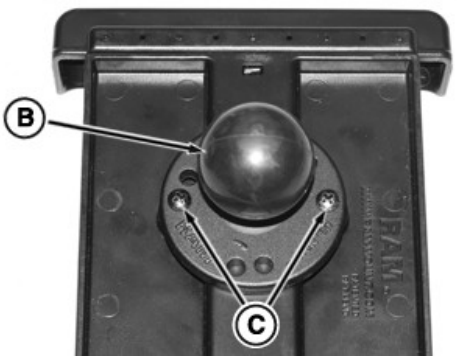


RXA0147503—UN—02MAR15

3. Install two lock nuts (A) with nylon towards face of tablet holder.

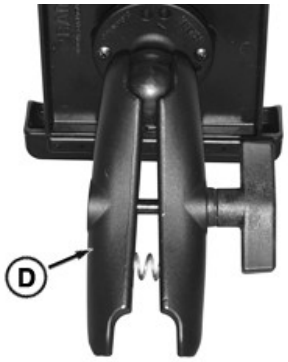


RXA0147503—UN—02MAR15



RXA0147504—UN—02MAR15

4. Install the mounting ball (B) with two screws (C). Hold the lock nuts (A) in place while installing screws.



RXA0147505—UN—02MAR15

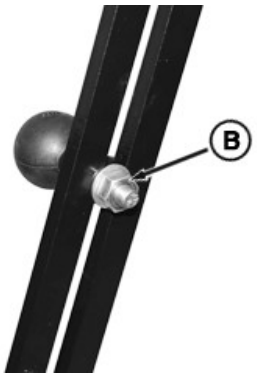
5. Install the double socket arm (D) to mounting ball with spring away from mounting ball.

Install Tablet Holder Assembly onto Accessory Rail



RXA0147506—UN—06MAR15

1. Position the mounting ball with stud (A) with a flat washer in desired location of the accessory rail.



RXA0147507—UN—02MAR15

2. Install the flat washer, lock washer, and hex nut (B). Tighten the hex nut (B).

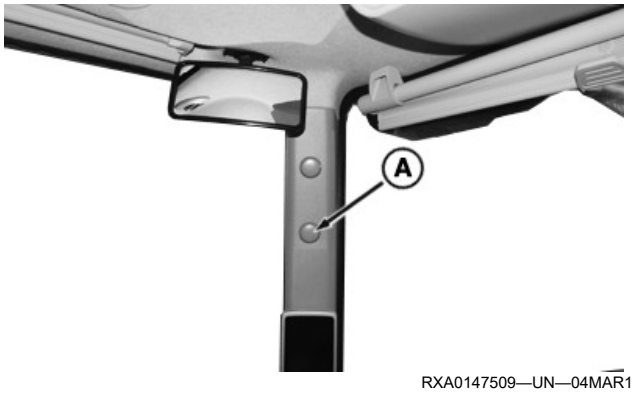


RXA0147508—UN—06MAR15

3. Loosen the T-handle on the double socket arm and install the tablet assembly (C) onto the mounting ball. Place tablet holder in desired position and tighten the T-handle.

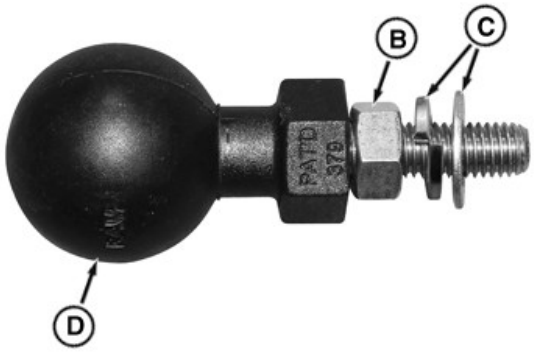
*NOTE: Tablet holder top end cap is spring loaded. Install holder with spring loaded end cap in **up** position.*

Install Tablet Holder Assembly onto Corner Post



RXA0147509—UN—04MAR15

1. Select desired corner post position and unscrew the plug (A).



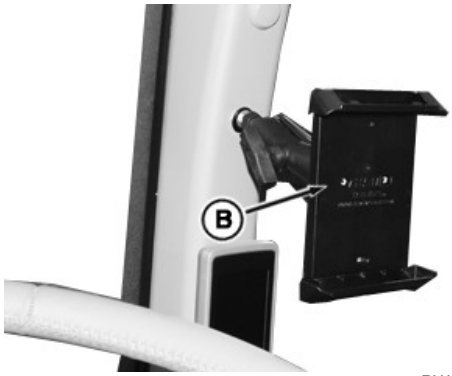
RXA0147510—UN—05MAR15

2. Install the hex nut (B), the flat and lock washers (C), onto mounting ball with stud (D).



RXA0147511—UN—04MAR15

3. Install the mounting ball with the stud (A) into the corner post fitting. Tighten mounting ball hex nut against the corner post fitting.



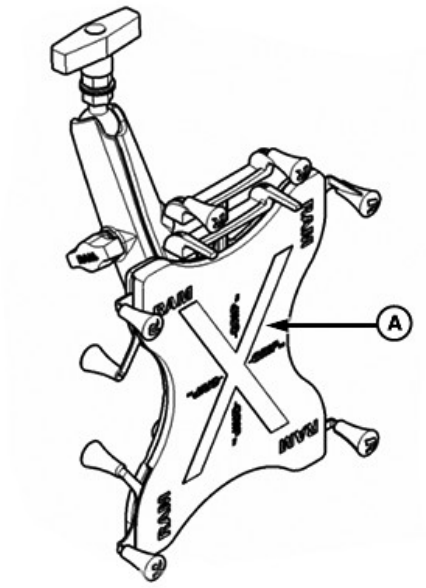
RXA0147512—UN—04MAR15

4. Loosen the T-handle on the double socket arm and install the tablet holder assembly (B) onto the mounting ball (A).
5. Place the tablet holder (B) in desired position and tighten the T-handle on the double socket arm.

*NOTE: Tablet holder top end cap is spring loaded. Install holder with spring loaded end cap in **up** position.*

ER40675,0000D03-19-09MAR20

Tablet Support (New)



BM030233—UN—10APR19

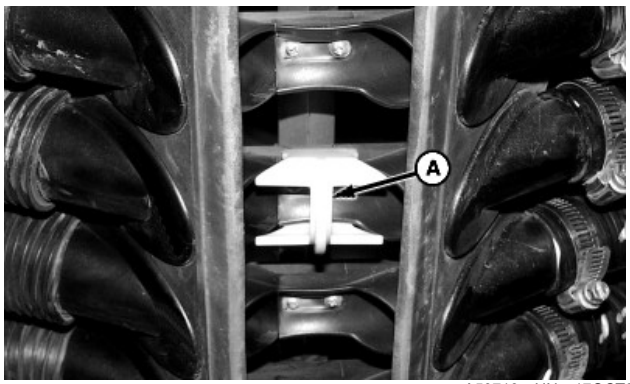
NOTE: It is possible to install this model of tablet support (A). For more information, see your John Deere dealer.

ER40675,0000D04-19-09MAR20

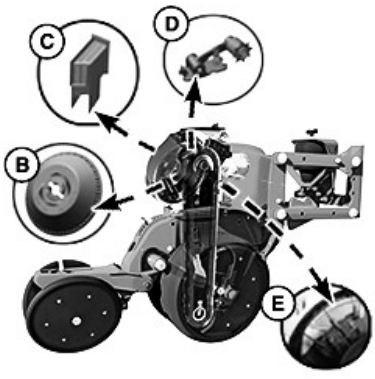
Sorghum Kit for ExactEmerge™

1. The sorghum kit consists of the following components:

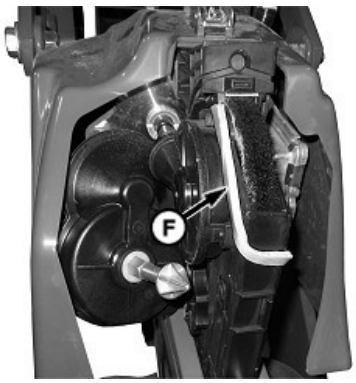
Sorghum Kit Components	
A	Nozzle Insert
B	Seed Disk
C	Elbow
D	Seed Knockout Wheel
E	Double Eliminator
F	Cartridge Seal



A50710—UN—17OCT02



BML020059—UN—03APR20



BML008044—UN—13AUG20

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 Sorghum and Small Popcorn in Preparing the Planter section.
   b. See Install the Seed Disk in Operating the Seed Meter—ExactEmerge™ section.
   c. See Operate Central Commodity System (CCS™) when Planting Sorghum and Small Popcorn in Operating the Central Commodity System (CCS™) section.
   d. See Install the Knockout Wheel Assembly in Operating the Seed Meter—ExactEmerge™ section.
   e. See Adjust the Double Eliminator in Operating the Seed Meter—ExactEmerge™ section.
   f. 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.

ExactEmerge is a trademark of Deere & Company
CCS is a trademark of Deere & Company
BrushBelt is a trademark of Deere & Company

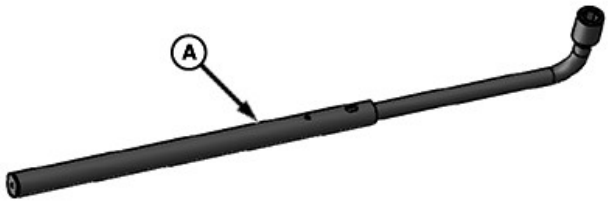
NOTE: All the components are part of the bundle for growing sorghum. Consult your John Deere dealer.

NN32476,0000093-19-12MAY21

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—Torque	280 N·m (206 lb·ft)



BML012202—UN—27JUL20

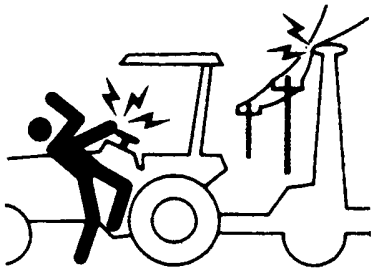
Store the tool (A) with the planter and use it whenever necessary.

K2F379Y,00000E0-19-18MAY21

Safe Transport



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. Check applicable legislation regarding the maximum permitted equipment widths.

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.

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.

ER40675,0001028-19-09MAR20

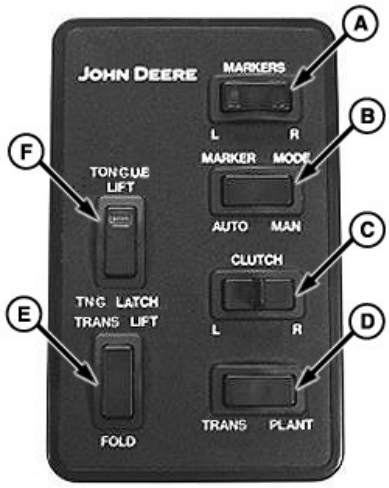
Unfold and Fold Planters—If Equipped with MaxEmerge™ 5

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: For the Easy Fold option, refer to SeedStar 4 manual for more information.

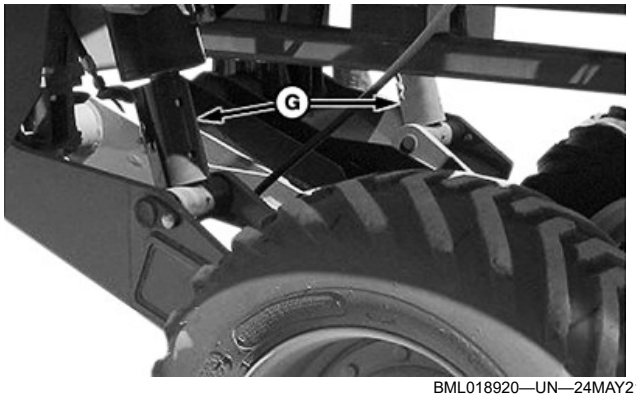
Manual Fold/Unfold

NOTE: These steps are based on the planter hydraulic system connected as recommended. (See Hydraulic Connection Recommendations in Attaching and Detaching section.)



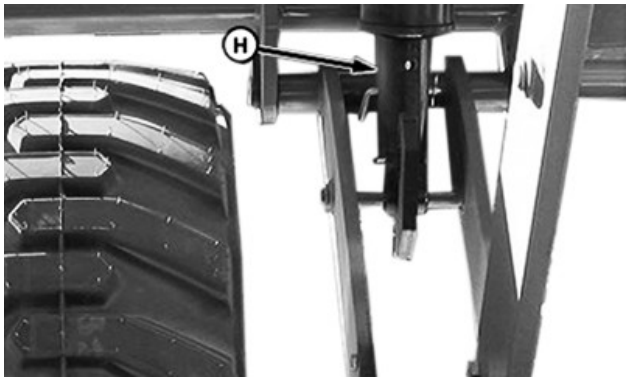
A50678—UN—15OCT02

Frame Control Box



BML018920—UN—24MAY21

Center Frame Wheels



BML018921—UN—24MAY21

Wing Wheels

A—MARKERS
B—MARKER/MODE
C—CLUTCH
D—TRANS/PLANT
E—TRANS LIFT/FOLD
F—TONGUE LIFT/TNG LATCH
G—SERVICE LOCK, CENTER FRAME
H—SERVICE LOCK, WING

Unfold Machine

Machine Unfold—DB40 and DB50	
Description	**Commands**
1. Remove the locking mechanism of wings and rear wheel cylinders.	-
2. Place the tractor transmission in neutral.	-
3. Lower the planter rear axle to the lowest position.	TRANS + TRANS LIFT + SCV II Extension
4. Lower the wing wheels.	TRANS + TRANS LIFT + SCV I Retraction
5. Lower the header until unlocking the wings.	TRANS + TONGUE LIFT + SCV II Extension
6. Open the wings.	TRANS + FOLD + SCV II Extension
7. Lock the lift lock.	TRANS + TNG LATCH + SCV II Extension
8. Lower the header until the machine is leveled: usually retracting all the cylinder.	TRANS + TONGUE LIFT + SCV II Extension
9. Lower the planter to the work (planting) position.	PLANT + SCV I Extension

Machine Unfold—DB74 and DB90	
Description	**Commands**
1. Remove the locking mechanism of wings and rear wheel cylinders.	-
2. Place the tractor transmission in neutral.	-
3. Lower the planter rear axle to the lowest position.	TRANS + TRANS LIFT + SCV II Extension
4. Unlock the wings.	TRANS + TONGUE LIFT + SCV II Retraction
5. Lower the wing wheels.	TRANS + TRANS LIFT + SCV I Retraction
6. Lower the header until unlocking the wings.	TRANS + TONGUE LIFT + SCV II Extension
7. Move the header until it locks the wings.	SCV III Extension for DB74 SCV IV Extension for DB90
8. Open the wings.	TRANS + FOLD + SCV II Extension
9. Lock the lift lock.	TRANS + TNG LATCH + SCV II Extension
10. Lower the header until the machine is leveled: usually retracting all the cylinder.	TRANS + TONGUE LIFT + SCV II Extension
11. Lower the planter to the work (planting) position.	PLANT + SCV I Extension

Fold Machine

Machine Fold—DB40 and DB50	
Description	**Commands**
1. Place the tractor transmission in neutral.	-
2. Raise the planter.	PLANT + SCV I Retraction
3. Release the lift lock.	TRANS + TNG LATCH + SCV II Retraction
4. Adjust the height of the header to the height of the planter's wings.	TRANS + TONGUE LIFT + SCV II Retraction
5. Close the wings. **IMPORTANT: Take care to not cross the header with a wing.**	TRANS + FOLD + SCV II Retraction
6. Lift the header up to prevent the wing from moving to the other side, however, be careful not to block the other wing from engaging.	TRANS + TONGUE LIFT + SCV II Retraction
7. Close the wings completely.	TRANS + FOLD + SCV II Retraction
8. Raise the header completely.	TRANS + TONGUE LIFT + SCV II Retraction
9. Raise the rear wheel.	TRANS + TRANS LIFT + SCV II Retraction
10. Move the wing wheels until they touch each other.	TRANS + TRANS LIFT + SCV I Extension

Machine Fold—DB40 and DB50	
Description	**Commands**
11. Use the locking mechanisms of the wing and cylinders of the rear wheel.	-

Machine Fold—DB74 and DB90	
Description	**Commands**
1. Place the tractor transmission in neutral.	-
2. Raise the planter.	PLANT + SCV I Retraction
3. Release the lift lock.	TRANS + TNG LATCH + SCV II Retraction
4. Adjust the height of the header to the height of the planter's wings.	TRANS + TONGUE LIFT + SCV II Retraction
5. Close the wings. **IMPORTANT: Take care to not cross the header with a wing.**	TRANS + FOLD + SCV II Retraction
6. Lift the header up to prevent the wing from moving to the other side, however, be careful not to block the other wing from engaging.	TRANS + TONGUE LIFT + SCV II Retraction
7. Close the wings completely.	TRANS + FOLD + SCV II Retraction
8. Raise the header completely.	TRANS + TONGUE LIFT + SCV II Retraction
9. Lock the wings.	TRANS + TONGUE LIFT + SCV II Extension
10. Move the planter tongue until it locks at the lift.	SCV III Retraction for DB74 SCV IV Retraction for DB90
11. Lift the rear wheel.	TRANS + TRANS LIFT + SCV II Retraction
12. Move the wing wheels until they touch each other.	TRANS + TRANS LIFT + SCV I Extension
13. Use the locking mechanisms of the wing and cylinders of the rear wheel.	-

TX8NN6G,000001B-19-02AUG22

Lifting Points



CQ1382865—UN—18NOV24

CAUTION: Avoid injury of death. Planter weight depends on model, be sure to use suitable lifting device when lifting each model. Listed bellow are the maximum weight of each empty planter by model.

- **DB40—14,144 kg (31,182 lb)**
- **DB50—15,980 kg (35,230 lb)**
- **DB74—21,279 kg (46,912 lb)**
- **DB90—29,500 kg (65,036 lb)**

Recommended straps for lifting all planter models in a U configuration:

- **Front Strap (A): 16,000 kg (35,274 lb)**
- **Rear Strap (B): 10,000 kg (22,046 lb)**

1. Ensure that machine is fully folded before installing lifting straps (A and B).
2. Position lifting straps (A and B) for front and rear lifting within the specified distance (C) from the center of gravity.

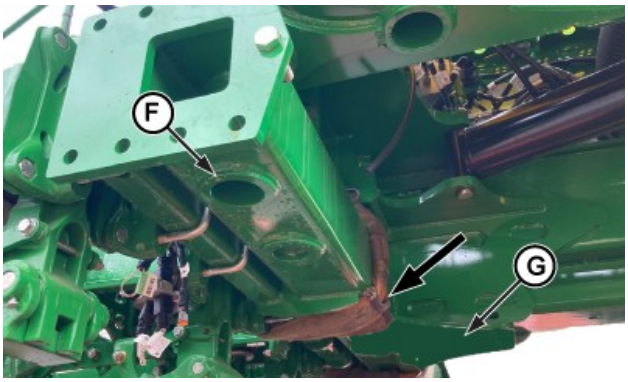
Specification

Gravity-Center-to-Lifting-Point (C)—Distance. . . . . 700 mm (27.6 in)

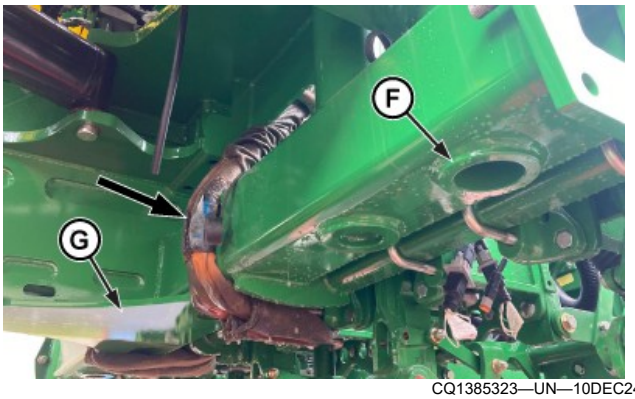
NOTE: If the available crane doesn't have the specified distance in its configuration, use a bar or spacer to achieve the recommendation.



CQ1385321—UN—10DEC24



CQ1385322—UN—10DEC24



CQ1385323—UN—10DEC24

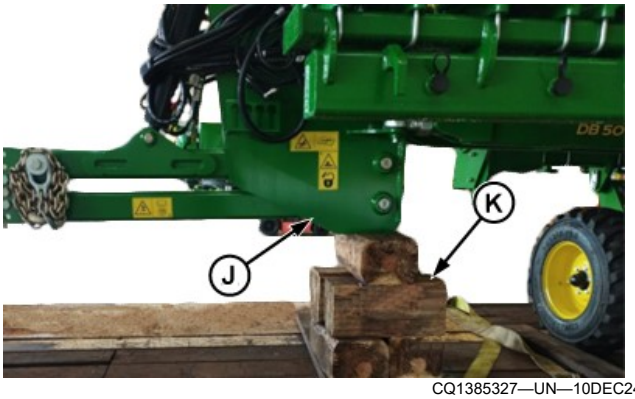
3. Wrap lifting device around hitch bar (D) near ballast bracket (E) at indicated position in image.
4. Wrap lifting device on both sides of swing arm bushing (F) near reinforcement plate (G) at indicated position in image.



CQ1385325—UN—10DEC24

5. Tension lifting devices slowly and gradually, ensure that path between lifting point and support surface is clear.

IMPORTANT: Avoid machine damage or malfunction. When routing the lifting strap (H) , avoid any hoses, harnesses, and electronic components (I). Compressing these components may damage them and cause the machine to require repair.



CQ1385327—UN—10DEC24

Front Supporting Block



CQ1385328—UN—10DEC24

Side Supporting Block

6. Support the planter front (J) and sides (L) on a flat, solid, and level surface. The use of solid support blocks (K) is recommended.

CAUTION: To help prevent personal injury caused by unexpected movement of machine, be sure that machine is stable. Do not support machine on cinder blocks, hollow tiles or props that may crumble under continuous load.

7. Remove lifting devices from lift points.

jgsjwxm,1733768966283-19-09DEC24

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 PT559, PT561, and PT562 detergents are highly recommended.

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.**

NN32476,000024A-19-17JAN22

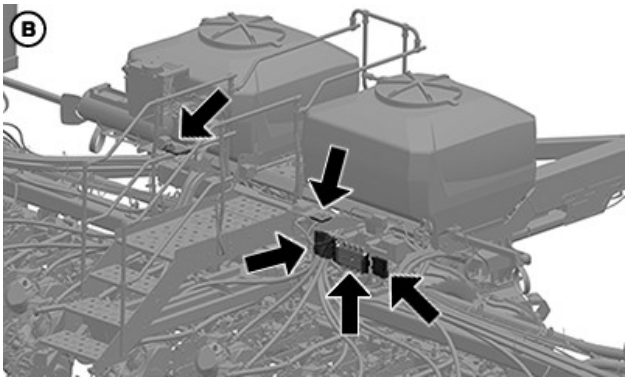
Cleaning the Electric Drive Components

For MaxEmerge™ 5e or ExactEmerge™ planters, avoid directing the pressure washer at the following electrical components shown.



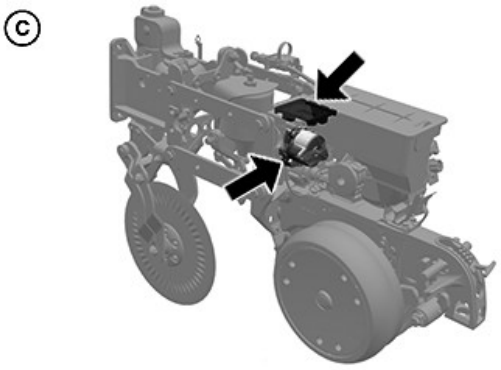
BML026017—UN—25MAY21

Electronic Power Take-Off (EPTO) Alternator



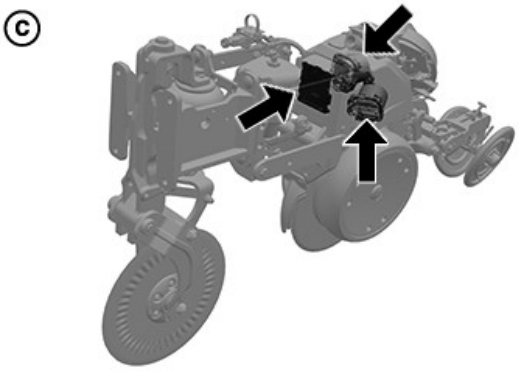
BML026014—UN—25MAY21

Electronic Control Units on Main Frame



BML026015—UN—25MAY21

Electronic Control Unit and Meter Motor—MaxEmerge



BML026016—UN—25MAY21

Electronic Control Unit, Meter Motor, and BrushBelt

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RowCommand is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company

A—Electronic Power Take-Off (EPTO) Alternator
B—Electronic Control Units on Main Frame
C—Row Unit Control Unit, Meter Motor, and BrushBelt™ Motor (for ExactEmerge™ planters)

TX8NN6G,000015B-19-26APR22

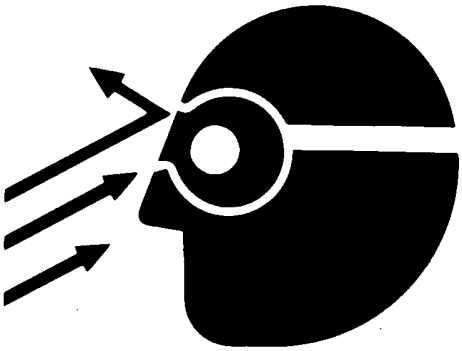
Prepare for Storage

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

1. Clean machine and store in a covered and dry area. Place a plank under the offset disks and/or hoes to prevent them from entering soil or floor.
2. Completely lubricate the machine. (See the Lubrication section.)

IMPORTANT: Avoid damage to the machine. It is recommended to clean the contacts of all the electrical connectors to prevent oxidation.

3. Check if there are loose or damaged components. Replace and/or tighten as required.
4. Cover the offset disks and/or the furrow openers with a layer of grease or oil and then lower onto a plank for storage.
5. If necessary, repaint the exposed metallic areas to prevent rust.
6. Apply grease to the exposed area of all the hydraulic cylinder rods.
7. Before disconnecting the hydraulic hoses, release the pressure in all lines.
8. If equipped with MaxEmerge™ 5, lower the planter completely with the tractor engine running, as follows:
   - Place **TRANS/PLANT** switch in **PLANT** position.
   - Place hydraulic lever in **FLOAT** position.
   - Depress all remaining switches in both directions.
   - Place **TRANS/PLANT** switch in **TRANS** position.
   - Depress all remaining switches in both directions.
   - Leave selective control valve (SCV) in **FLOAT** position and shut off the engine.
9. If equipped with MaxEmerge™ 5e or ExactEmerge™ with the Easy Fold option, refer to the SeedStar™ 4 manuals for more information.
10. Place the covers on the ends of the hydraulic hoses and in their supports on the planter.



TS266—UN—23AUG88

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.

11. Dry the seed tank using compressed air.
12. Lubricate all the machine chains and transmissions to prevent rusting by humid air. Rusting tends to stiffen chain links causing them to become less flexible and the machine as a whole to become less maneuverable.
13. Adjust the tires according to the adjustment table.

NN32476,0000383-19-06MAY21

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.

BrushBelt is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company
SeedStar is a trademark of Deere & Company

IMPORTANT: Thoroughly clean vacuum lines to prevent entry of impurities that may damage machine parts.

7. Lubricate all meter chains and transmission boxes.
8. Make sure all joints move freely, otherwise the machine will perform poorly.

ER40675,0000475-19-07MAR20

Store the Planter

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.

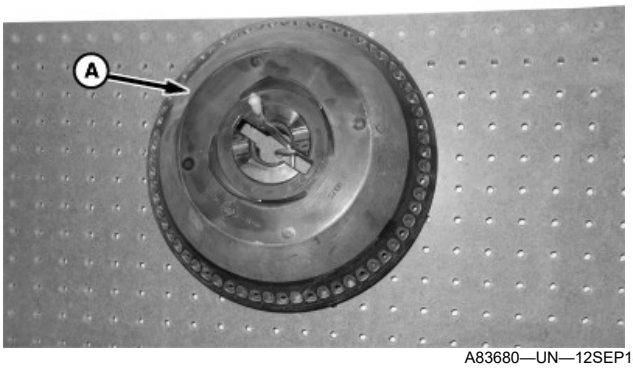
IMPORTANT: Avoid damage to electrical components, bearings, hoses, or hoppers. Avoid direct spray at sensitive components. Use caution, if power washing the planter.

NOTE: The air spring should keep a minimum pressure to avoid any damage.

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 installed.
3. Paint all parts which are chipped or worn.
4. Clean the planter thoroughly to remove dirt and residue that hold moisture on the planter components.
5. Lubricate the planter as outlined in the Lubrication section. Grease exposed cylinder rods.
6. Thoroughly lubricate the chains with John Deere Multipurpose Spray Lube, TY6350, at beginning of the idle period.
7. Empty and clean the hoppers.
8. Inspect the planter for worn or broken parts. See your John Deere dealer during the off-season to acquire parts or service when the planter is not needed in the field.
9. Store the planter in a clean, dry place with the depth gauge wheels and the closing wheels out of the sun.
10. Relieve the pressure from the closing wheels.
11. Relieve the row unit downforce.
12. Thoroughly flush liquid systems with clean water and winterize in cold climates. Follow the chemical manufacturer's label.
13. 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.

14. Clean the meter housing, meter chamber, and seed disk with mild detergent and a soft brush.
15. Spray the seed disk with a graphite lubricant.

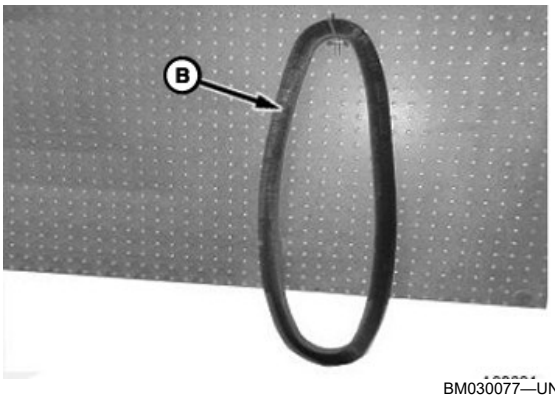


A83680—UN—12SEP14

16. 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.

17. Clean the vacuum system. (Clean the Vacuum System in Service—Vacuum System section.)
18. Check for hydraulic leaks.
19. Check and clean the seed meters.
20. Check and replace the necessary seed meter seals.



BM030077—UN—15FEB19

21. Ensure that the BrushBelt™ (B) is clean and purged of all remaining seed. (See the SeedStar™

SeedStar is a trademark of Deere & Company

Operator's Manual for additional information on the purge instructions.)

22. 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.

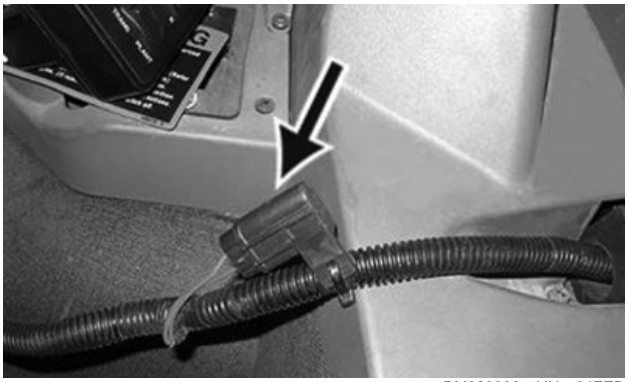
23. If BrushBelt™ is removed for storage, clean the belt (B) and hang as shown for best results.

NN32476,0000382-19-27MAY21

BrushBelt is a trademark of Deere & Company

Frame Control Fuse

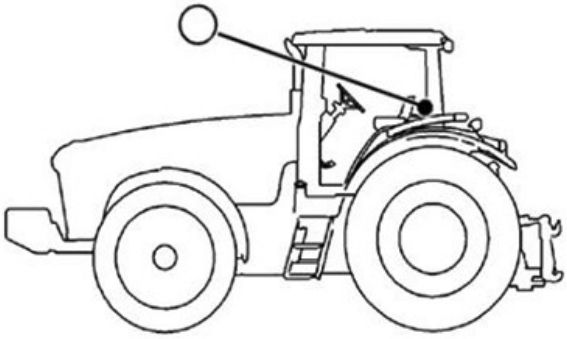
NOTE: Never disconnect or connect the row unit with the power generation system connected.



BM029993—UN—04FEB19

Frame Control Fuse—10 A

The power supply of the frame control fuse is provided by the tractor 9-pin connector.



BM029994—UN—04FEB19

Location of the Frame Control Fuse

This fuse is located inside the tractor cab.

NN32476,0000385-19-07MAY21

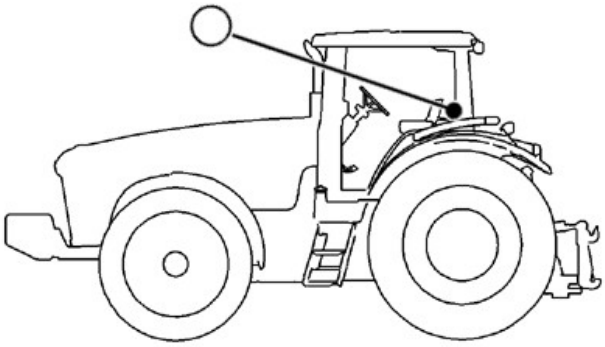
Console Disconnect Fuse



A76728—UN—12NOV12

Console Disconnect Fuse—10 A

This fuse is located on the connection of the planter with the tractor.

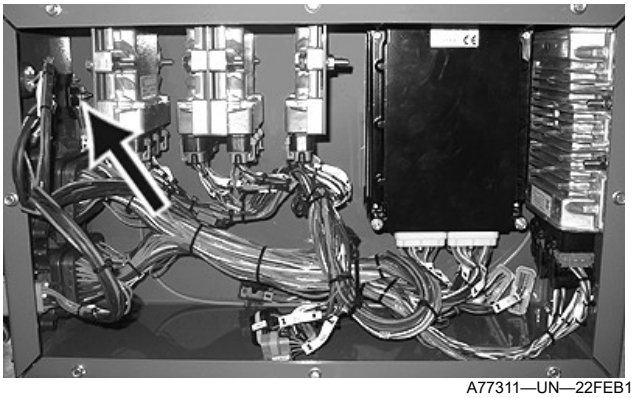


A76892—UN—28NOV12

Location of the Console Disconnect Fuse

KK69021,0000983-19-27MAY21

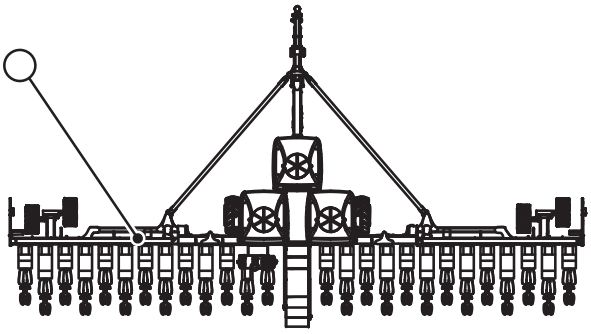
Circuit Breaker Fuse



A77311—UN—22FEB13

Circuit Breaker Fuse—40 A

This fuse is located in the box of the control units, at the left-hand side of the machine.

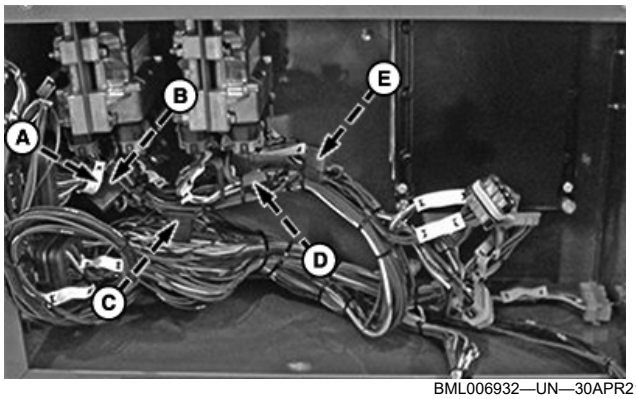


BML006930—UN—03MAY21

Location of the Box of the Control Units

KK69021,0000990-19-29APR21

Electric Power Module (EPM) Fuses

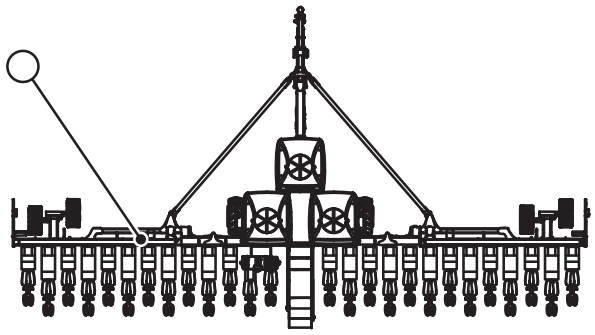


BML006932—UN—30APR21

Electric Power Module (EPM) Fuses—Box of the Control Units

A—Electric Power Module 1 (EPM 1) Fuse—10 A
B—Electric Power Module 2 (EPM 2) Fuse—10 A
C—Electric Power Module 3 (EPM 3) Fuse—10 A
D—Electric Power Module 4 (EPM 4) Fuse—10 A
E—Electric Power Module 5 (EPM 5) Fuse—10 A

These fuses are located in the box of the control units, at the left-hand side of the machine.

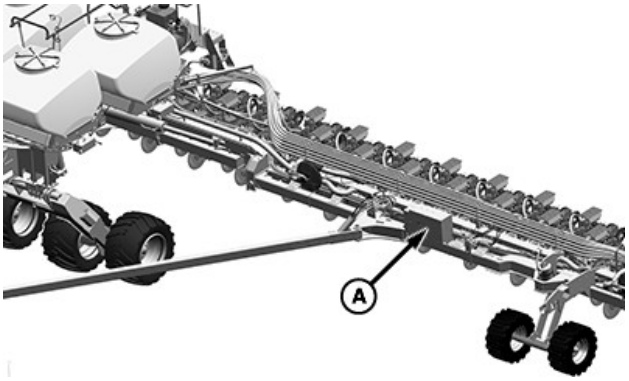


BML006930—UN—03MAY21

Location of the Box of the Control Units

KK69021,000098E-19-07MAY21

Fuse and Relay Box (DB90 with MaxEmerge™ 5 Only)

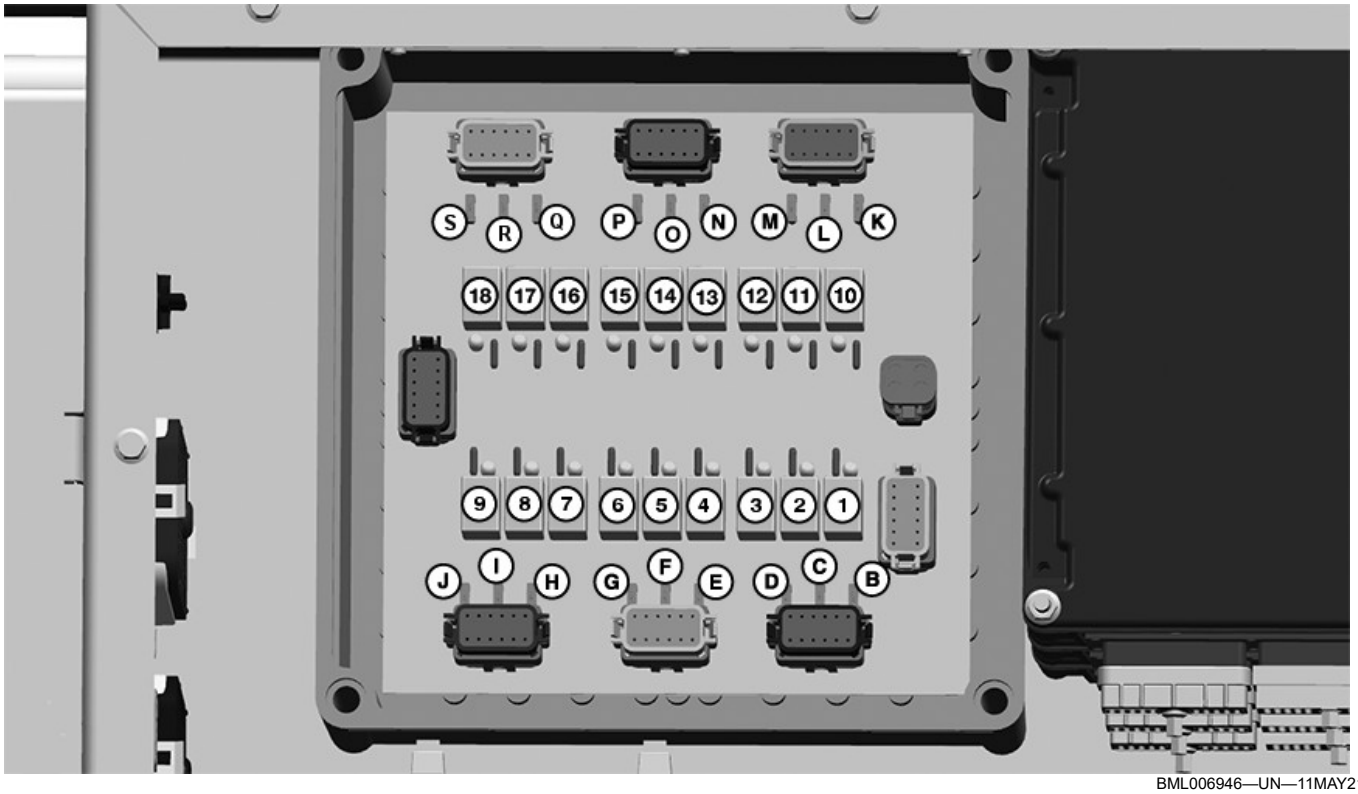


BML006970—UN—31MAY21

Fuse and Relay Box

The fuse and relay box (A) is located at the left-hand side of the machine.

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, consult your John Deere dealer.



BML006946—UN—11MAY21

RowCommand™ Fuses and Relays

A—Fuse and Relay Box
B—Fuse F1 (F201) (5 A)
C—Fuse F2 (F202) (5 A)
D—Fuse F3 (F203) (5 A)
E—Fuse F4 (F204) (5 A)
F—Fuse F5 (F205) (5 A)
G—Fuse F6 (F206) (5 A)
H—Fuse F7 (F207) (5 A)
I—Fuse F8 (F208) (5 A)
J—Fuse F9 (F209) (5 A)
K—Fuse F10 (F210) (5 A)
L—Fuse F11 (F211) (5 A)
M—Fuse F12 (F212) (5 A)
N—Fuse F13 (F213) (5 A)
O—Fuse F14 (F214) (5 A)
P—Fuse F15 (F215) (5 A)
Q—Fuse F16 (F216) (5 A)
R—F17 (Spare Fuse) (5 A)
S—F18 (Spare Fuse) (5 A)
1—Relay K1 (K101)
2—Relay K2 (K102)
3—Relay K3 (K103)
4—Relay K4 (K104)
5—Relay K5 (K105)
6—Relay K6 (K106)
7—Relay K7 (K107)
8—Relay K8 (K108)
9—Relay K9 (K109)
10—Relay K10 (110)
11—Relay K11 (K111)
12—Relay K12 (K112)
13—Relay K13 (K113)

14—Relay K14 (K114)
15—Relay K15 (K115)
16—Relay K16 (K116)
17—K17 (Spare Relay)
18—K18 (Spare Relay)

NOTE: Some components are not shown on the image for clarity purposes.

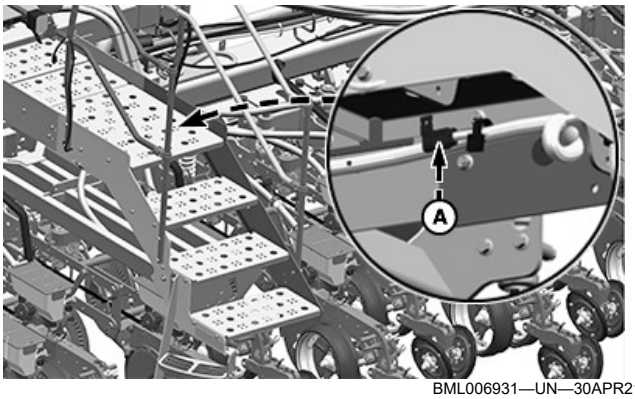
To check which RowCommand™ clutch of the row units is related to each fuse and relay, see the following chart:

Fuses (5 A)	DB90 36 Rows 76 cm (29.92 in) Spacing	DB 90 55 Rows 50 cm (19.69 in) Spacing	DB90 61 Rows 45 cm (17.72 in) Spacing	Relays
F1 (F201)	Row Clutches 01 and 02	Row Clutches 01, 02, and 03	Row Clutches 01, 02, and 03	**K1 (K101)**
F2 (F202)	Row Clutches 03 and 04	Row Clutches 04, 05, and 06	Row Clutches 04, 05, and 06	**K2 (K102)**
F3 (F203)	Row Clutch 5	Row Clutches 07 and 08	Row Clutches 07, 08, and 09	**K3 (K103)**
F4 (F204)	Row Clutches 06 and 07	Row Clutches 09, 10, and 11	Row Clutches 10, 11, and 12	**K4 (K104)**
F5 (F205)	Row Clutches 08 and 09	Row Clutches 12, 13, and 14	Row Clutches 13, 14, 15, and 16	**K5 (K105)**
F6 (F206)	Row Clutches 10, 11, and 12	Row Clutches 15, 16, 17, and 18	Row Clutches 17, 18, 19, and 20	**K6 (K106)**
F7 (F207)	Row Clutches 13, 14, and 15	Row Clutches 19, 20, 21, 22, and 23	Row Clutches 21, 22, 23, 24, and 25	**K7 (K107)**
F8 (F208)	Row Clutches 16, 17, and 18	Row Clutches 24, 25, 26, and 27	Row Clutches 26, 27, 28, 29, and 30	**K8 (K108)**
F9 (F209)	Row Clutches 19, 20, and 21	Row Clutches 28, 29, 30, 31, and 32	Row Clutches 31, 32, 33, 34, 35, and 36	**K9 (K109)**
F10 (F210)	Row Clutches 22, 23, and 24	Row Clutches 33, 34, 35, 36, and 37	Row Clutches 37, 38, 39, 40, and 41	**K10 (K110)**
F11 (F211)	Row Clutches 25, 26, and 27	Row Clutches 38, 39, 40, and 41	Row Clutches 42, 43, 44, and 45	**K11 (K111)**
F12 (F212)	Row Clutches 28 and 29	Row Clutches 42, 43, and 44	Row Clutches 46, 47, 48, and 49	**K12 (K112)**
F13 (F213)	Row Clutches 30 and 31	Row Clutches 45, 46, and 47	Row Clutches 50, 51, and 52	**K13 (K113)**
F14 (F214)	Row Clutch 32	Row Clutches 48 and 49	Row Clutches 53, 54, and 55	**K14 (K114)**
F15 (F215)	Row Clutches 33 and 34	Row Clutches 50, 51, and 52	Row Clutches 56, 57, and 58	**K15 (K115)**
F16 (F216)	Row Clutches 35 and 36	Row Clutches 53, 54, and 55	Row Clutches 59, 60, and 61	**K16 (K116)**
F17	Spare Fuse and Relay	Spare Fuse and Relay	Spare Fuse and Relay	**K17**
F18	Spare Fuse and Relay	Spare Fuse and Relay	Spare Fuse and Relay	**K18**

KK69021,000099D-19-12MAY21

RowCommand is a trademark of Deere & Company

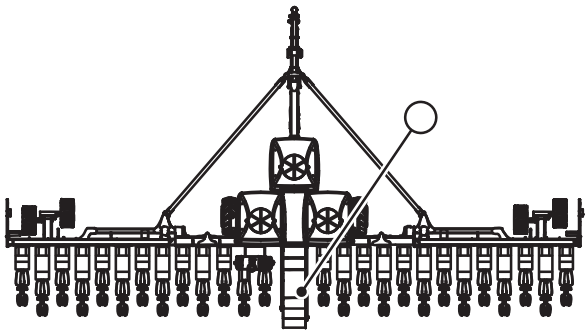
Fuse for Worklights



BML006931—UN—30APR21

Fuse for Worklights—10 A

The fuse for worklights (A) is located under the platform, at the center of the machine.



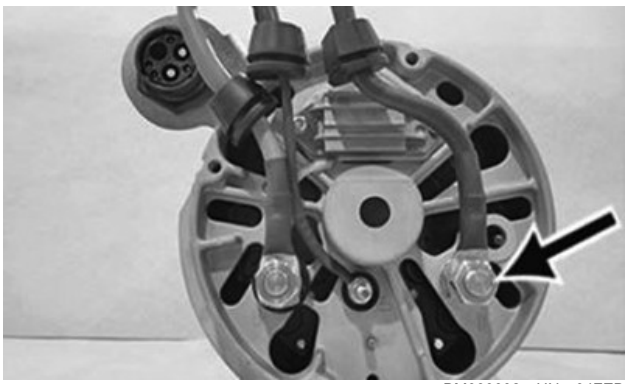
BML006933—UN—30APR21

Location of the Fuse

KK69021,000098F-19-27MAY21

Access to Service Points—ExactEmerge™ and MaxEmerge™ 5e

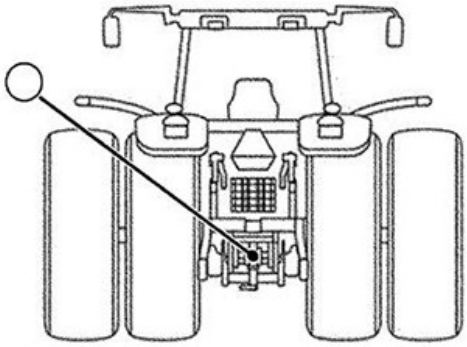
Tractor Alternator Negative Connector



BM030002—UN—04FEB19

Tractor Alternator Negative Connector

The alternator negative connector is a ground point for the power generator.



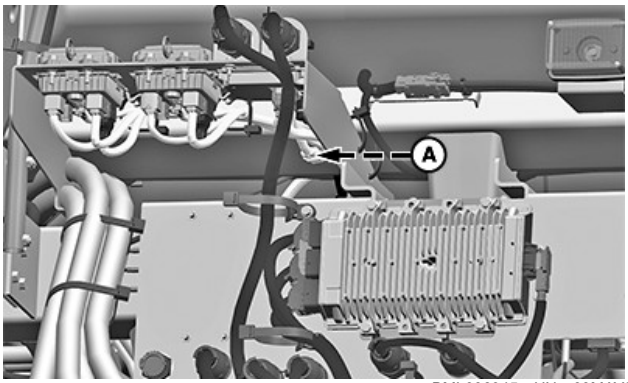
BM029992—UN—04FEB19

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

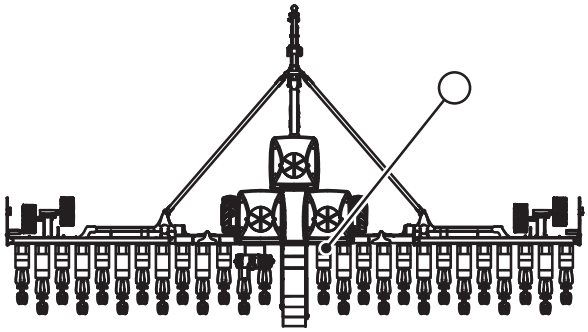


BML006945—UN—03MAY21

Tractor Power Generation Fuse—10 A

NOTE: The image shows the location of the tractor power generation fuse (A) for a DB90 planter. The location for the other DB models is similar.

Power protection fuse of the 9-pin tractor connection.



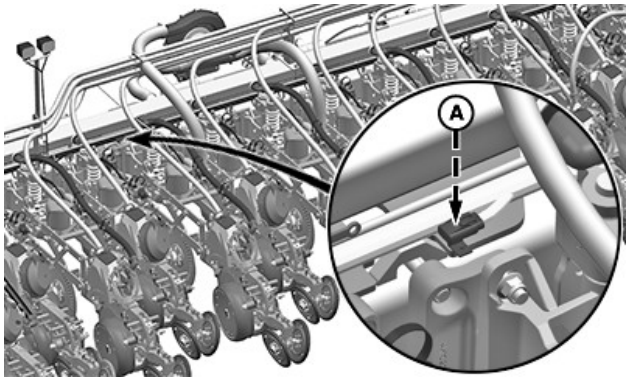
BM024730—UN—07FEB18

Location of the Tractor Power Generation Fuse

The power generation fuse (A) is located near the fuse boxes.

NN32476,0000386-19-07MAY21

Fuse for the Left Rows

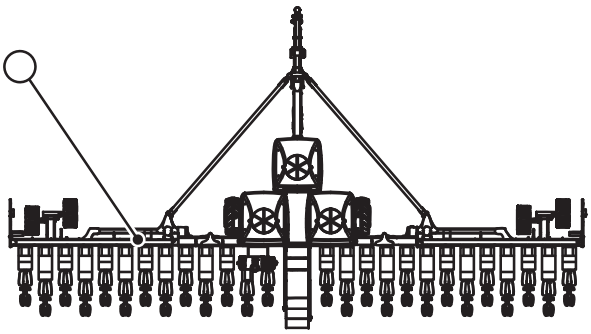


BML006941—UN—03MAY21

Fuse for the Left Rows—20 A

NOTE: The image shows the location of the fuse for the left rows (A) in a DB74 planter. The location for the other DB models is similar.

Power protection of the RUC control units for the rows of the left-hand side.



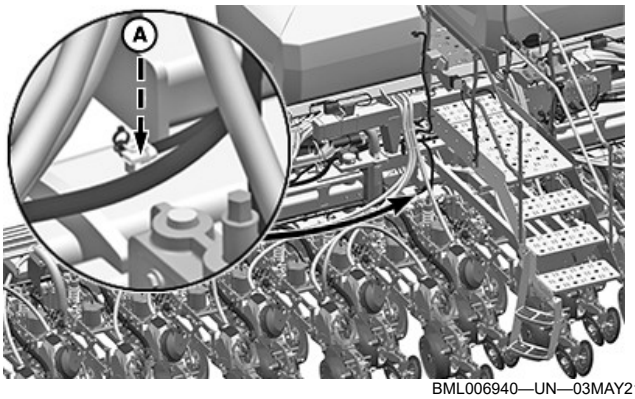
BML006930—UN—03MAY21

Location of the Fuse

The fuse for the left rows (A) is located at the left-hand side of the machine, near to the worklights.

KK69021,000099A-19-27MAY21

Fuse for the Center Rows

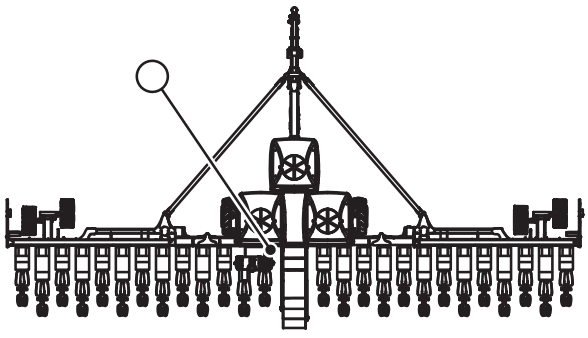


BML006940—UN—03MAY21

Fuse for the Center Rows—20 A

NOTE: The image shows the location of the fuse for the center rows (A) in a DB74 planter. The location for the other DB models is similar.

Power protection of the RUC control units for the rows of the center of the planter.



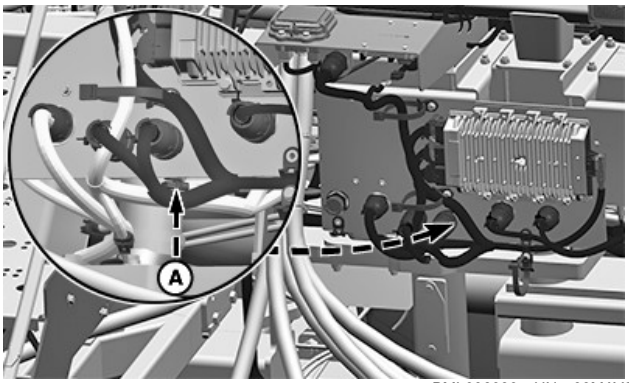
BML006942—UN—03MAY21

Location of the Fuse

The fuse for the center rows (A) is located near the platform.

KK69021,000099B-19-27MAY21

Fuse for the Right Rows

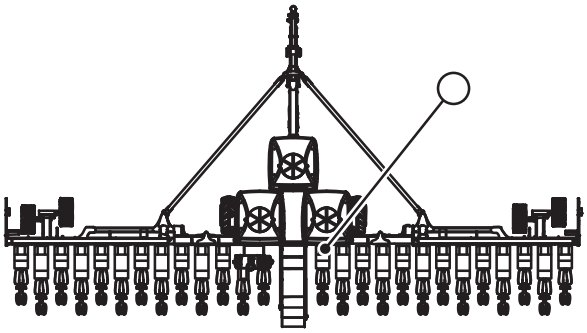


BML006939—UN—03MAY21

Fuse for the Right Rows—20 A

NOTE: The image shows the location of the fuse for the right rows (A) in a DB74 planter. The location for the other DB models is similar.

Power protection of the RUC control units for the rows of the right-hand side.



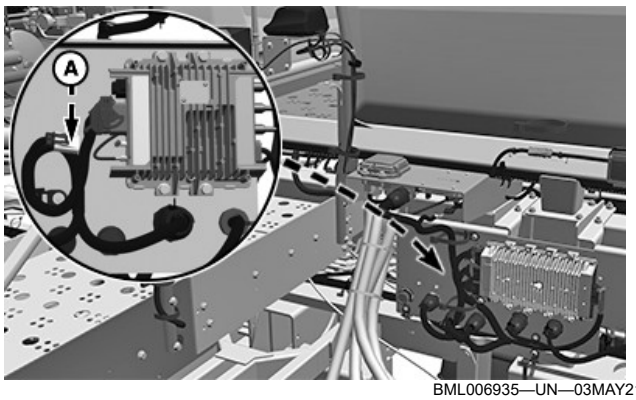
BM024730—UN—07FEB18

Location of the Fuse

The fuse for the right rows (A) is located near the planter main control unit (PMC).

KK69021,000099C-19-27MAY21

MTG Fuse

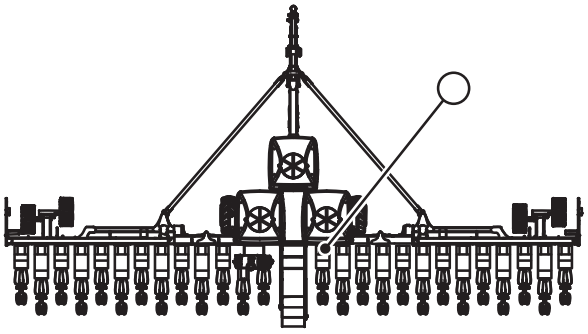


BML006935—UN—03MAY21

MTG Fuse—10 A

Fuse of the electronic control unit (ECU) power protection from the 9-pin tractor connection.

The MTG fuse (A) is located near the modular telematics gateway (MTG) controller.

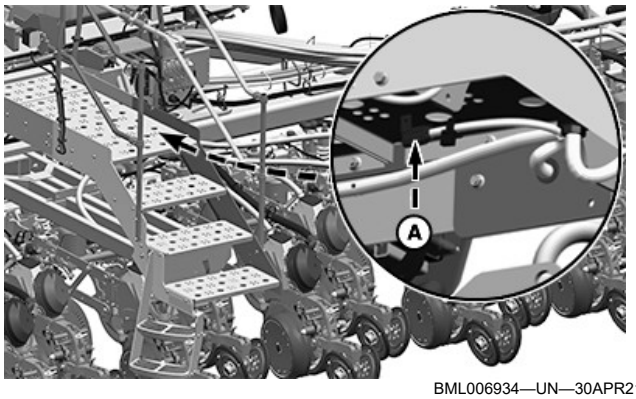


BM024730—UN—07FEB18

Location of the MTG Fuse

KK69021,0000994-19-07MAY21

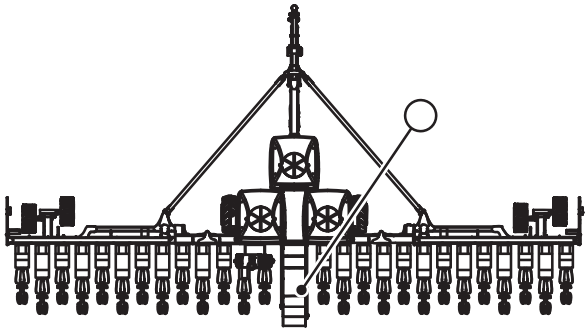
Fuse for Worklights



BML006934—UN—30APR21

Fuse for Worklights—10 A

The fuse for worklights (A) is located under the platform, at the center of the machine.

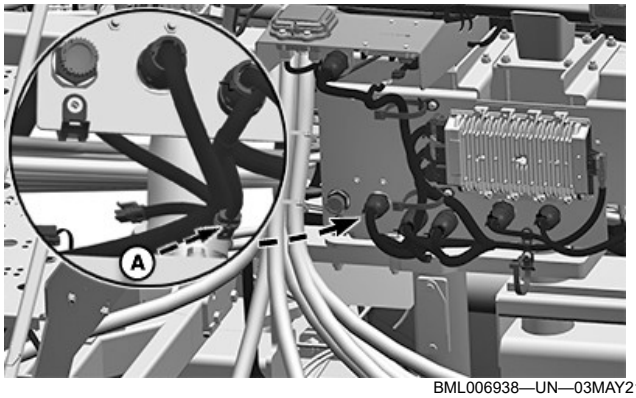


BML006933—UN—30APR21

Location of the Fuse for Worklights

KK69021,0000997-19-27MAY21

PMC ECU Fuse

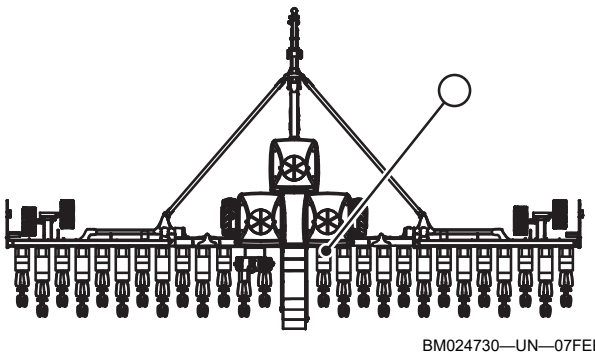


BML006938—UN—03MAY21

PMC ECU Fuse—20 A

NOTE: The image shows the location of the PMC ECU fuse (A) for a DB74 planter. The location for the other DB models is similar.

The PMC ECU fuse (A) is located near to the planter main control unit (PMC).

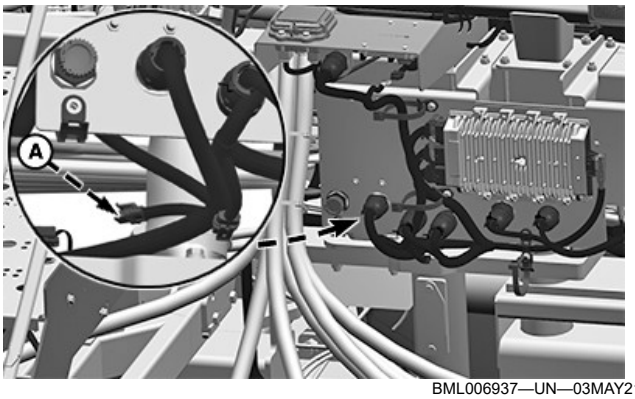


BM024730—UN—07FEB18

Location of the PMC ECU Fuse

KK69021,0000998-19-07MAY21

PMC Hi-Current Fuse

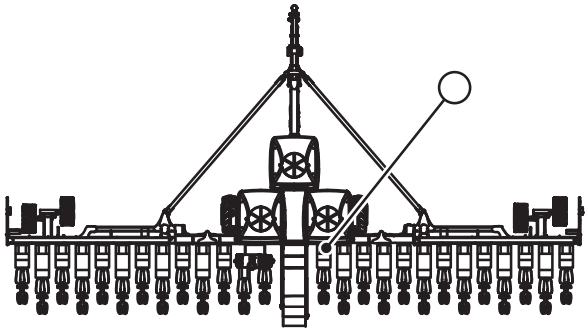


BML006937—UN—03MAY21

PMC Hi-Current Fuse—20 A

NOTE: The image shows the location of the PMC hi-current fuse (A) for a DB74 planter. The location for the other DB models is similar.

The PMC hi-current fuse (A) is located near to the planter main control unit (PMC).

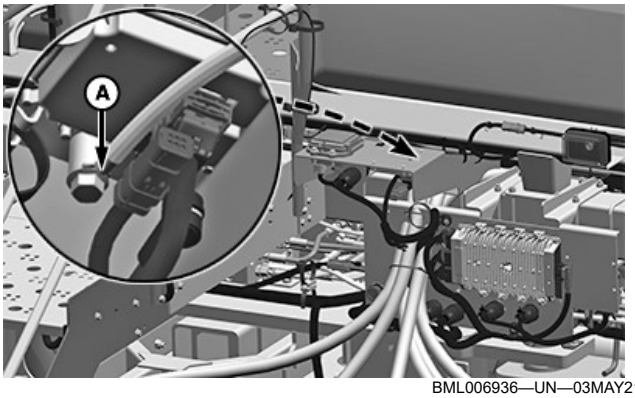


BM024730—UN—07FEB18

Location of the PMC Hi-Current Fuse

KK69021,0000999-19-07MAY21

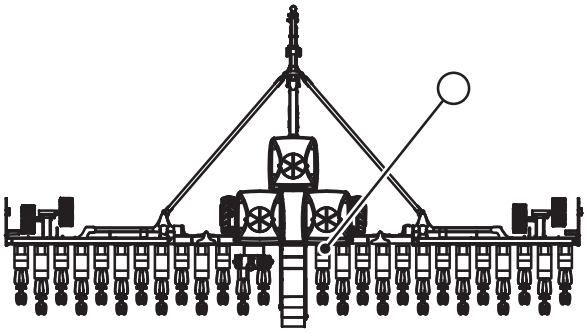
Ground Distribution Connector



BML006936—UN—03MAY21

Ground Distribution Connector

The function of the ground distribution connector (A) is to be a ground point for the power generator.



BM024730—UN—07FEB18

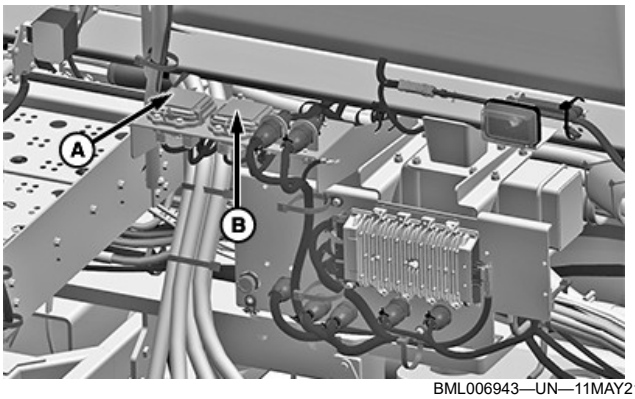
Ground Distribution connector location

This connector is located below the fuse box.

KK69021,0000996-19-27MAY21

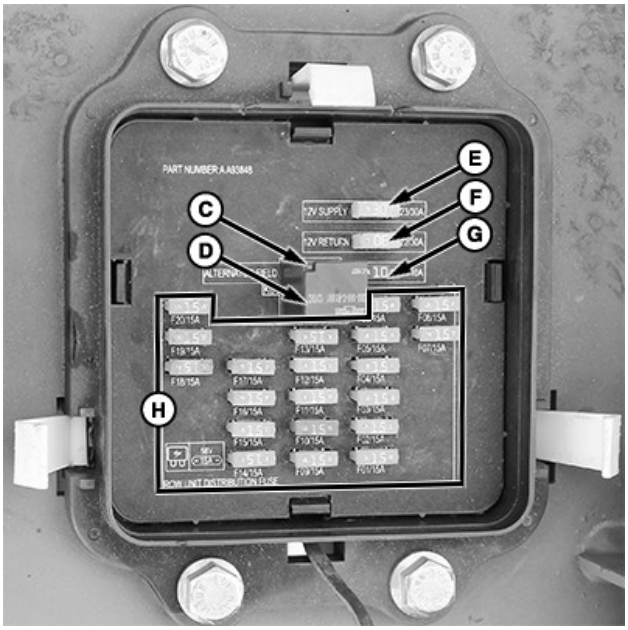
Fuse Boxes

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, consult your John Deere dealer.



BML006943—UN—11MAY21

Fuse Boxes 1 and 2



BML006944—UN—11MAY21

Fuse Box 1

A—Fuse Box 1
B—Fuse Box 2
C—Corner
D—Alternator Field Relay
E—12 V Supply Fuse (30 A)
F—12 V Return Fuse (30 A)
G—Pre Relay Monitor Fuse (10 A)
H—Fuses of the Row Units

The fuse box 1 (A) and the fuse box 2 (B) (if equipped) are on the right-hand side of the machine.

IMPORTANT: Avoid damage to the machine electrical system. When replacing the alternator field relay (D), always install it in the same position as shown in the image, with the corner (C) at the upper left-hand side.

NOTE: The fuse box 2 (B) is only available for the DB90 planter. Other planter models have only the fuse box 1 (A).

NOTE: The fuse box 2 (B) has the same internal components in comparison to the fuse box 1 (A), however, the row units related to each fuse vary.

To check which row unit is related to each fuse of the row units (H), see the following charts:

Fuses of the Row Units—Fuse Box 1

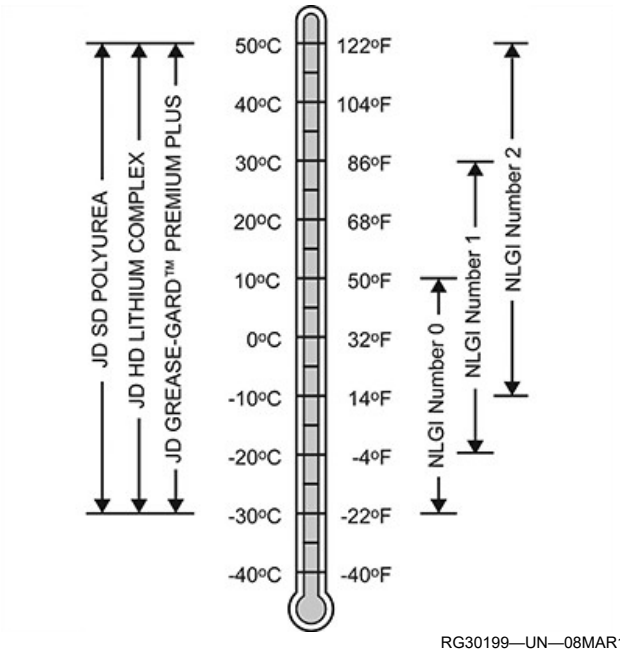
Row Unit Fuses	Fuse Box 1				Fuse Box 2
Fuses (15 A)	DB40	DB50	DB74	DB90	DB90
F01	Rows 01 and 02	Rows 01 and 02	Rows 01, 02, and 03	Rows 01 and 02	Rows 41 and 42
F02	Rows 03 and 04	Rows 03 and 04	Rows 04, 05, and 06	Rows 03 and 04	Rows 43 and 44
F03	Rows 05 and 06	Rows 05 and 06	Rows 07, 08, and 09	Rows 05 and 06	Rows 45 and 46
F04	Rows 07 and 08	Rows 07 and 08	Rows 10, 11, and 12	Rows 07 and 08	Rows 47 and 48
F05	Rows 09 and 10	Rows 09 and 10	Rows 13, 14, and 15	Rows 09 and 10	Rows 49 and 50
F06	Rows 11 and 12	Rows 11 and 12	Rows 16, 17, and 18	Rows 11 and 12	Rows 51 and 52
F07	Rows 13 and 14	Rows 13 and 14	Rows 19, 20, and 21	Rows 13 and 14	Rows 53 and 54
F08	Rows 15 and 16	Rows 15 and 16	Rows 22, 23, and 24	Rows 15 and 16	Rows 55 and 56
F09	Rows 17 and 18	Rows 17 and 18	Rows 25, 26, and 27	Rows 17 and 18	Rows 57 and 58
F10	Rows 19 and 20	Rows 19 and 20	Rows 28, 29, and 30	Rows 19 and 20	Rows 59 and 60
F11	Rows 21 and 22	Rows 21 and 22	Rows 31, 32, and 33	Rows 21 and 22	Row 61
F12	Rows 23 and 24	Rows 23 and 24	Rows 34, 35, and 36	Rows 23 and 24	Spare Fuse
F13	Rows 25 and 26	Rows 25 and 26	Rows 37, 38, and 39	Rows 25 and 26	Spare Fuse
F14	Row 27	Rows 27 and 28	Rows 40, 41, and 42	Rows 27 and 28	Spare Fuse
F15	Spare Fuse	Rows 29 and 30	Rows 43, 44, and 45	Rows 29 and 30	Spare Fuse
F16	Spare Fuse	Rows 31 and 32	Rows 46, 47, and 48	Rows 31 and 32	Spare Fuse
F17	Spare Fuse	Rows 33 and 34	Row 49	Rows 33 and 34	Spare Fuse
F18	Spare Fuse	Row 35	Spare Fuse	Rows 35 and 36	Spare Fuse
F19	Spare Fuse	Spare Fuse	Spare Fuse	Rows 37 and 38	Spare Fuse
F20	Spare Fuse	Spare Fuse	Spare Fuse	Rows 39 and 40	Spare Fuse

NOTE: Depending on the machine configuration, not all the fuses of the row units shown at the chart are used.

N8XR12J,00006C8-19-16MAR22

Multipurpose Extreme Pressure (EP) Grease

IMPORTANT: For automated lubrication systems different ambient air temperatures need to 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

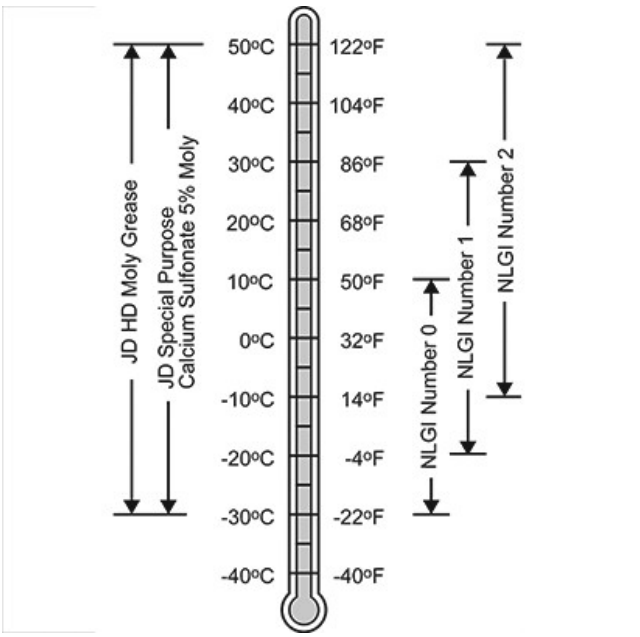
Other greases may be used if they meet the following:

- 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,GREA1-19-13JAN18

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:

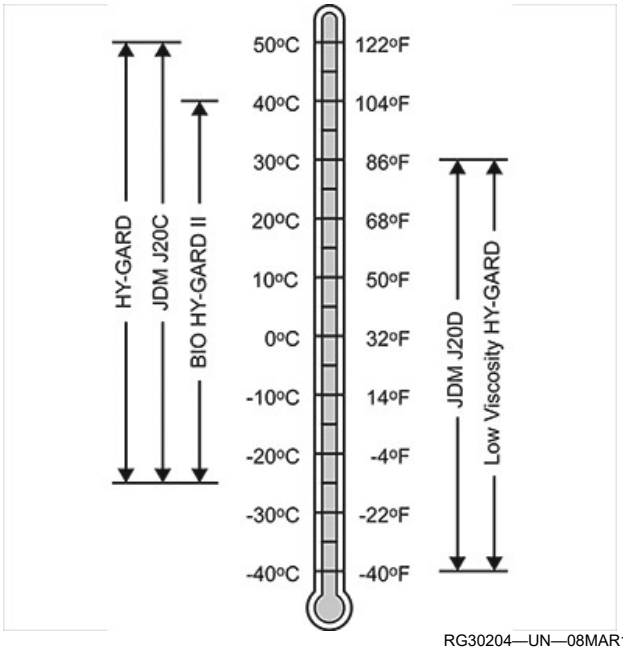
- NLGI Performance Classification GC-LB with 3% to 5% molybdenum disulfide
- ISO-L-X-BDHB 2 (per ISO 6743-9) or DIN KPF 2 N-10 (per DIN 51825) Lithium Complex, Non-Synthetic Base Oil (100 to 220 mm²/s @40°C) with 3% to 5% molybdenum disulfide

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

Grease-Gard is a trademark of Deere & Company

Transmission, Steering, Brake, Hydraulic, and Gear Case Oil



RG30204—UN—08MAR18

Oils for Air Temperature Ranges

Use 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

Use John Deere Bio Hy-Gard™ II oil when a biodegradable fluid is required.[1]

DX,OIL1-19-13JAN18

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Hy-Gard is a trademark of Deere & Company
Bio Hy-Gard is a trademark of Deere & Company

[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.*

Consult your John Deere dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to John Deere branded fluids or fluids that have been tested and/or approved for use in John Deere equipment.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

DX,ALTER-19-13JAN18

Oil of the Pneumatic Downforce (PDF) Compressor

IMPORTANT: Consult your John Deere dealer for more information.

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.

NN32476,00003B8-19-04MAY21

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.

Consult your John Deere dealer to obtain specific information and recommendations.

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

Use Safe Service Procedures



N40000—UN—28SEP88

CAUTION: To help prevent serious injury or death to you or others caused by unexpected movement, service the machine on a level surface. Lower the machine to the ground or sufficiently lock or block the raised machine before servicing. If the machine is connected to a tractor, engage the park brake and/or place the transmission in PARK, shut off the engine and remove the key. If the machine is detached from the tractor, block the wheels and use shop stands to prevent movement.

ER40675,00002E4-19-07MAR20

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.

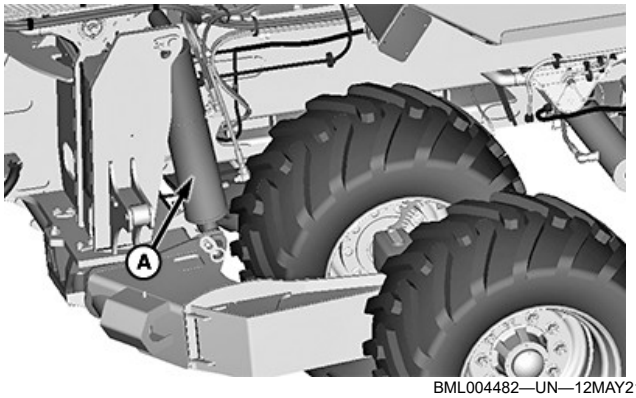
1. Keep terminals clean and free of foreign debris. Moisture, dirt, and other contaminants may cause the terminals to erode over time and not make a good electrical connection.
2. If a connector is not in use, put on the proper dust cap or an appropriate seal to protect it from foreign debris and moisture.
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. (See your John Deere dealer.)
5. The wiring harness terminals and connectors for electronic control units are repairable.

DX,WW,ECU04-19-11JUN09

Install the Service Locks

CAUTION: Avoid personal injury or death. Always install the service locks when working around or near the machine.

NOTE: Service locks provide safety when performing normal maintenance and adjustments with the machine raised.

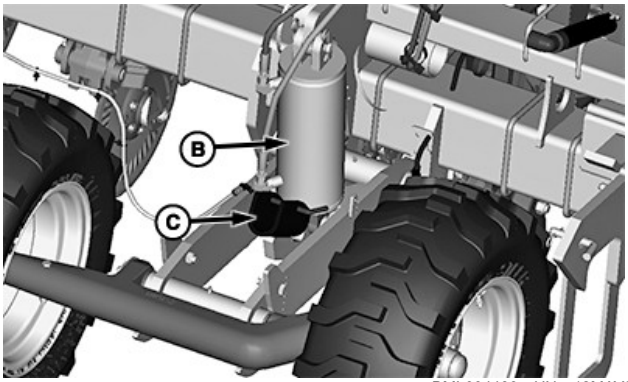


BML004482—UN—12MAY21

Center Frame Wheels

1. Install a service lock on both cylinders (A) of the center frame wheels.

NOTE: There is one cylinder (A) at each side of the center frame.



BML004483—UN—12MAY21

Wing Wheels

2. Install the service locks (C) on the cylinders (B) of the wing wheels.

NOTE: There is one cylinder (B) at each wing wheel.

KK69021,00009AF-19-11MAY21

Maintenance Intervals Chart

Periodicity	System	Service
First 10 Hours	Wheels and Hardware	Check Torque of the Wheel Screws
		Check Torque of the U-Bolt
		Check Torque of the Parallel Arm Screws
	Planting Unit—Coulter	Check the Torque of the Screws of the Coulter Support
		Check Torque of the Coulter Cast Bracket
	Planting Unit—Depth Gauge Wheels	Check Torque of the Depth Gauge Wheel Pivot Arm
First 20 Hours	Planting Unit—Pneumatic Downforce (PDF) System	Change the Oil of the Pneumatic Downforce (PDF) Compressor—If Equipped
Start of the Season	Electrical	Check the Electrical Routing
		Clean the Electronic Power Take-Off (EPTO) Alternator—Only for 5 and MaxEmerge™ 5e
	Drives	Lubricate the Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for and MaxEmerge™ 5e
		Change the Gear Case Oil of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
	Hydraulics	Check the Filter of the Variable Rate Drive System—Only for MaxEmerge™ 5
	Wheels and Hardware	Check Torque of the Wheel Screws
		Check Torque of the U-Bolt
		Check Torque of the Parallel Arm Screws
		Lubricate the Variable Rate Drive Roller Chain—Only for MaxEmerge™ 5
	Planting Unit—Coulter	Check the Torque of the Screws of the Coulter Support
		Check Torque of the Coulter Cast Bracket
		Lubricate the Coulter Pivot Arms
		Lubricate the Coulter Adjustment Spring—Only for Mechanical Springs Downforce
	Planting Unit—Double Disk Blade	Inspect the Scrapers of the Double Disk Blade
	Planting Unit—Depth Gauge Wheels	Check Scraper Rings (If Equipped)
	Planting Unit—Seed Meter and Hopper	Clean Seed Manifold
		Clean Seed Tube—Only for MaxEmerge™ 5 and MaxEmerge™ 5e
		Adjust the Meter Latch—Only for ExactEmerge™
		Check Cartridge Guard—Only for ExactEmerge™
	Planting Unit—Pneumatic Downforce (PDF) System	Drain the Tank of the Pneumatic Downforce (PDF) System—If Equipped
		Change the Oil of the Pneumatic Downforce (PDF) Compressor—If Equipped
		Check the Pressure Sensors of the Pneumatic Downforce (PDF) System—If Equipped
		Replace the Filter of the Pneumatic Downforce (PDF) Compressor—If Equipped
		Check for Leaks on Connectors of the Pneumatic Downforce (PDF) System—If Equipped
		Check for Leaks on the Air Springs of the Pneumatic Downforce (PDF) System—If Equipped
	Vacuum System	Clean the Hose of the Vacuum Pressure Sensor
	Central Commodity System	Check Central Commodity System (CCS™) Sensor
		Check Routing of Central Commodity System (CCS™) Hoses
		Clean Central Commodity System (CCS™) Manifold
Every 10 Hours or Daily	Drives	Check the Filter of the Variable Rate Drive System—Only for MaxEmerge™ 5
	Wheels and Hardware	Check Torque of the Center Wheel Bracket
		Lubricate the Wing Wheel Pivots

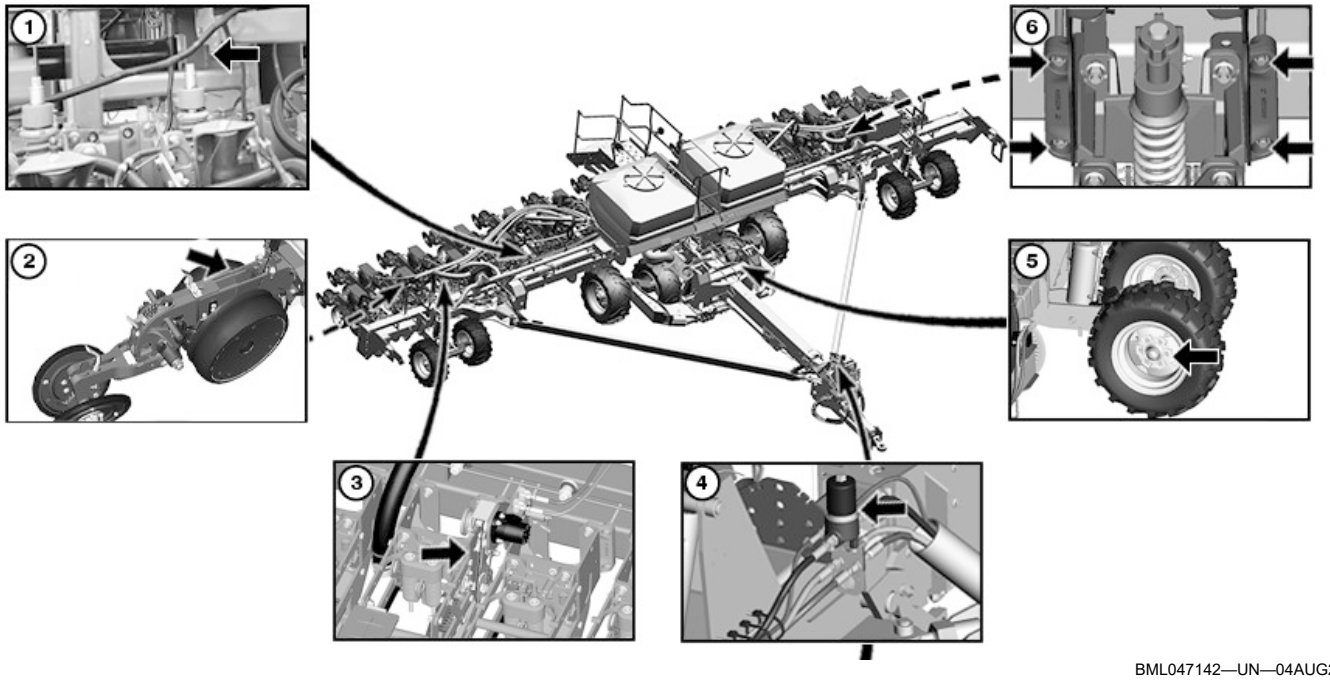
Periodicity	System	Service
		Lubricate the Frame Bearing
		Lubricate the Wing Fold Pivots
		Lubricate the Wing Flex Pivots
	Planting Unit—Pneumatic Downforce (PDF) System	Drain the Tank of the Pneumatic Downforce (PDF) System—If Equipped
		Check the Oil Level of the Pneumatic Downforce (PDF) Compressor—If Equipped
	Vacuum System	Inspect Vacuum Motor
Every 50 Hours	Hydraulics	Lubricate the Lift Cylinders
		Lubricate the Fold Cylinders
	Wheels and Hardware	Lubricate the Hitch Link
		Lubricate the Front Hitch Pivots
		Lubricate the Rear Hitch Pivots
		Lubricate the Wishbone Pivot
		Lubricate the Rear Center Hitch Roller
	Planting Unit—Seed Meter and Hopper	Lubricate Vacuum Seal and Seed Disk
	Planting Unit—Pneumatic Downforce (PDF) System	Clean the Filter of the Pneumatic Downforce (PDF) Compressor—If Equipped
	Planting Unit — Gauge Wheel	Checking Gauge Wheel Pivot Arm Torque
	Vacuum System	Clean the Vacuum System
Every 100 Hours	Drives	Lubricate the Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
		Clean the Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
		Check the Gear Case Oil Level of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
	Wheels and Hardware	Check Torque of the Wheel Screws
	Planting Unit—Seed Meter and Hopper	Clean BrushBelt™ Cartridge—Only for ExactEmerge™
	Planting Unit—Pneumatic Downforce (PDF) System	Replace the Filter of the Pneumatic Downforce (PDF) Compressor—If Equipped
	Planting Unit—Depth Gauge Wheels	Lubricate the Depth Gauge Wheel Arms[a]
Every 200 Hours	Drives	Change the Gear Case Oil of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
	Wheels and Hardware	Check Torque of Bearing Support Structure
		Check Torque of the Pillow Block Central Support Nuts
	Planting Unit—Pneumatic Downforce (PDF) System	Change the Oil of the Pneumatic Downforce (PDF) Compressor—If Equipped
Middle of the Season	Hydraulics	Check the Filter of the Variable Rate Drive System—Only for MaxEmerge™ 5
	Wheels and Hardware	Check Torque of the U-Bolt
		Check Torque of the Parallel Arm Screws
	Planting Unit—Coulter	Check the Torque of the Screws of the Coulter Support
		Check Torque of the Coulter Cast Bracket
	Planting Unit—Pneumatic Downforce (PDF) System	Check for Leaks on Connectors of the Pneumatic Downforce (PDF) System—If Equipped
		Check for Leaks on the Air Springs of the Pneumatic Downforce (PDF) System—If Equipped
Every 400 Hours (End of Season)	Wheels and Hardware	Lubricate the Variable Rate Drive Roller Chain—Only for MaxEmerge™ 5
		Lubricate the Center Wheel Hub
	Planting Unit—Double Disk Blade	Check Double Disk Blade Bearings

Periodicity	System	Service
		Inspect and Adjust the Double Disk Blade
		Inspect the Scrapers of the Double Disk Blade
	Planting Unit—Depth Gauge Wheels	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 Meter
		Inspect and Service the Seed Meter—Only for MaxEmerge™ 5 and MaxEmerge™ 5e
		Inspect and Service the Seed Meter—Only for ExactEmerge™
		Adjust the Meter Latch—Only for ExactEmerge™
	Vacuum System	Inspect and Clean Vacuum Impeller and Housing
	Central Commodity System (CCS™)	Check Central Commodity System (CCS™) Blower Gauge Filter
Every 1500 Hours	Planting Unit—Coulter	Replace the Coulter Joint Grease
As Required	Electrical	Adjust the Row Unit Sensor
		Clean the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
	Drives	Clean the Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e
	Planting Unit—Depth Gauge Wheels	Adjust the Depth Gauge Wheels
		Install Depth Gauge Wheel Bearings (If Equipped with Shielded Bearings)
		Remove and Install Scraper Ring (If Equipped)
	Planting Unit—Double Disk Blade	Inspect the Scrapers of the Double Disk Blade
		Inspect and Adjust the Double Disk Blade
		Install Double Disk Blade Bearings (If Equipped with Shielded Bearings)
	Planting Unit—Closing Wheels	Install Closing Wheel Bearings (If Equipped with Shielded Bearings)
	Planting Unit—Seed Meter and Hopper	Clean Seed Manifold
		Clean Seed Tube—Only for MaxEmerge™ 5 and MaxEmerge™ 5e
		Clean Seed Meter Drive
		Clean Row Unit Hopper Screen-Only for MaxEmerge™ 5 and MaxEmerge™ 5e
		Replace—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™ 5 and 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™ 5 and MaxEmerge™ 5e
	Planting Unit—Pneumatic Downforce (PDF) System	Clean the Filter of the Pneumatic Downforce (PDF) Compressor—If Equipped
		Replace the Connectors of the Pneumatic Downforce (PDF) System—If Equipped
		Replace the Air Springs of the Pneumatic Downforce (PDF) System—If Equipped
	Vacuum System	Clean the Hose of the Vacuum Pressure Sensor
		Clean the Vacuum System
	Central Commodity System (CCS™)	Clean Central Commodity System (CCS™) Manifold
		Clean the Central Commodity System (CCS™) Tank Level Sensors
		Zeroing Central Commodity System (CCS™) Fan Pressure Gauge

[a] *In severe moisture conditions or locking arm movement reduce the lubrication interval to 50 hours or less*

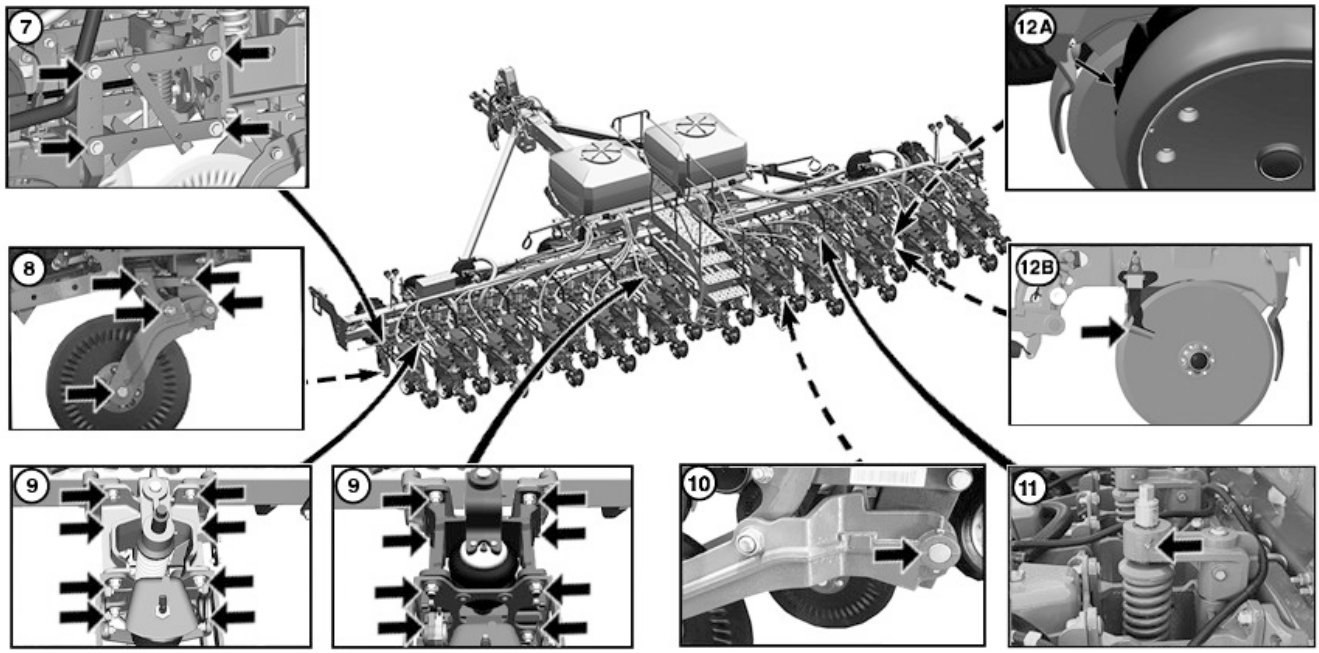
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Service—Start of the Season



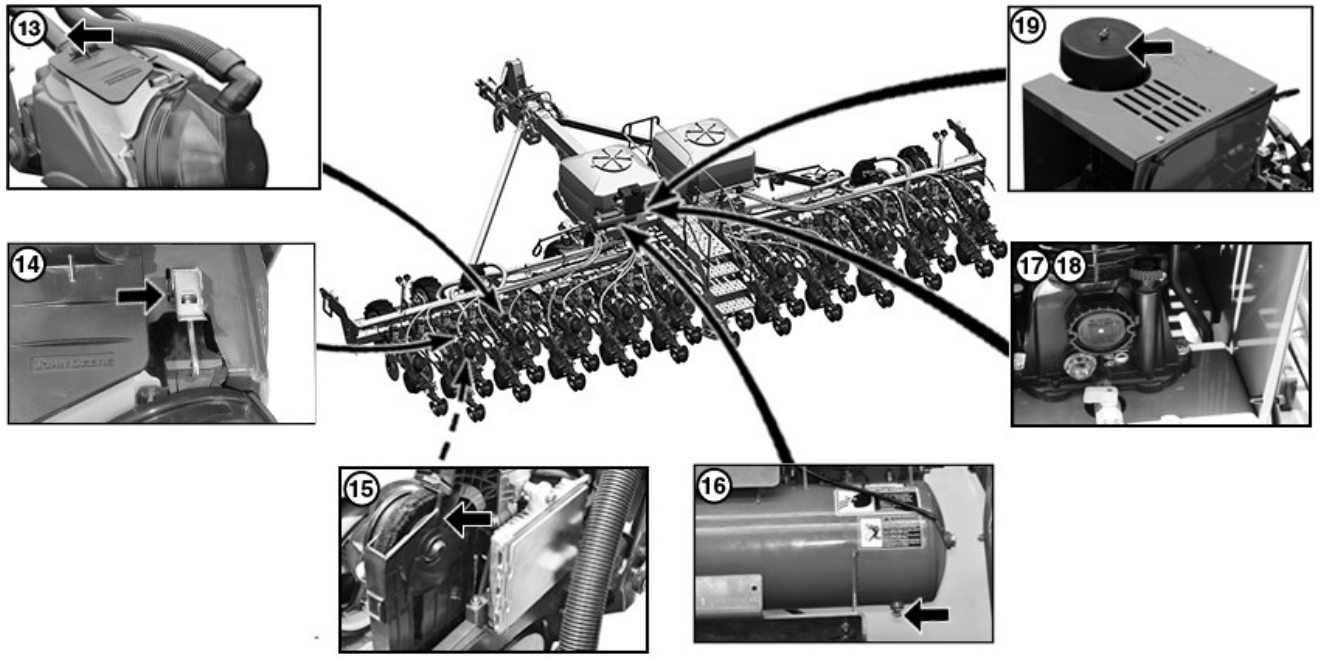
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1—Check the electrical routing.
2—Clean seed tube (only for MaxEmerge 5 and MaxEmerge 5e).
3—Lubricate the variable rate drive roller chain (only for MaxEmerge 5).
4—Check the filter of the variable rate drive system (only for MaxEmerge 5).
5—Check torque of the wheel screws.
6—Check torque of the U-bolt.



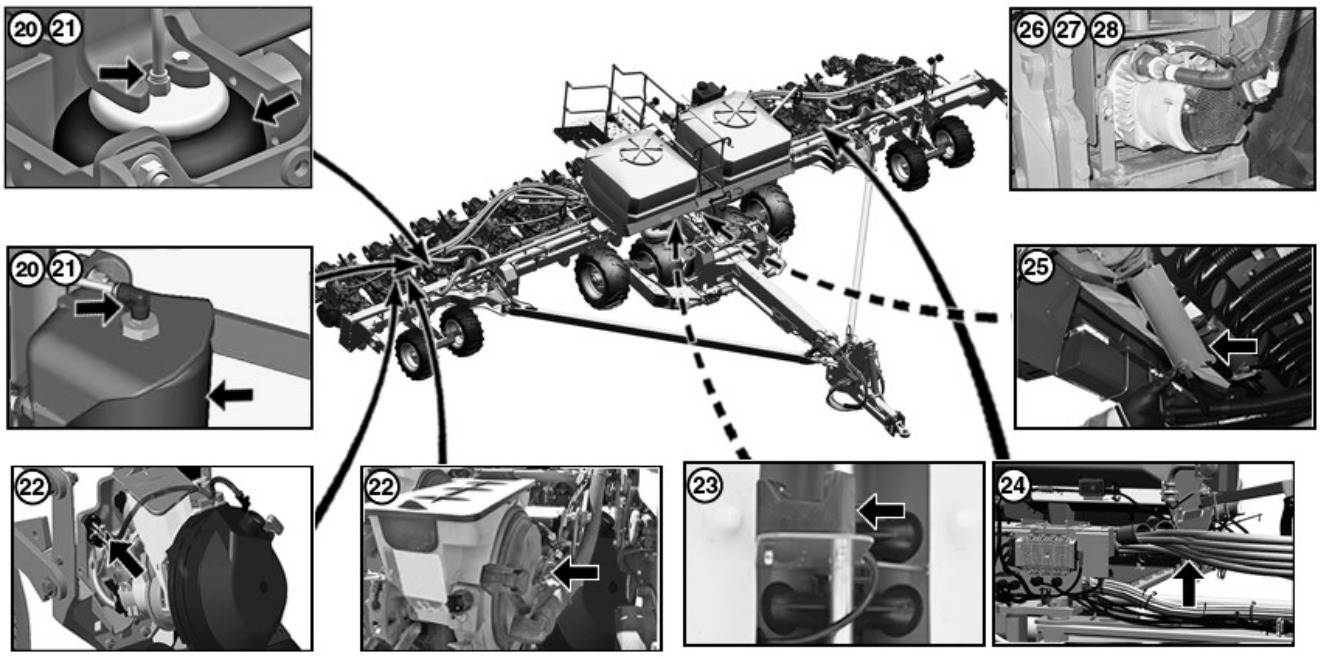
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7—Check torque of the parallel arm screws.
8—Check the torque of the screws of the coulter support.
9—Check torque of the coulter cast bracket.
10—Lubricate the coulter pivot arms.
11—Lubricate the coulter adjustment spring (only for mechanical springs downforce).
12A—Chech scraper rings (if equipped).
12B—Inspect the scrapers of the double disk blade.



BML019367—UN—23MAR22

13—Clean seed manifold.
14—Adjust the meter latch (only for ExactEmerge).
15—Check the cartridge guard (only for ExactEmerge).
16—Drain the tank of the pneumatic downforce (PDF) system (if equipped).
17—Change the oil of the pneumatic downforce (PDF) compressor (if equipped).
18—Check the pressure sensors of the pneumatic downforce (PDF) system (if equipped).
19—Replace the filter of the pneumatic downforce (PDF) compressor (if equipped).



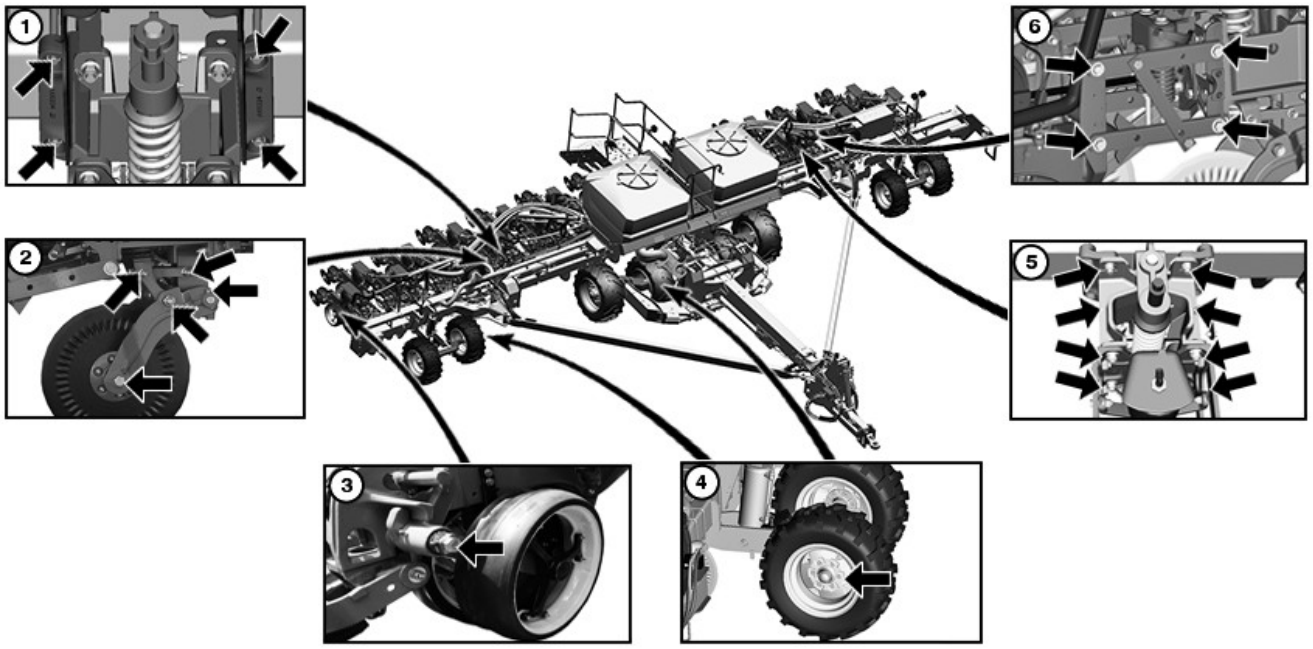
BML019368—UN—23MAR22

20—Check for leaks on connectors of the pneumatic downforce (PDF) system (if equipped).
21—Check for leaks on the air springs of the pneumatic downforce (PDF) system (if equipped).
22—Clean the hose of the vacuum pressure sensor.
23—Check central commodity system (CCS™) sensor.

24—Check routing of central commodity system (CCS™) hoses.
25—Clean central commodity system (CCS™) manifold.
26—Clean the electronic power take-off (EPTO) Alternator (only for MaxEmerge™ 5 and MaxEmerge™ 5e).
27—Lubricate the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
28—Change the gear case oil of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).

h3ymaet,1691147223815-19-09AUG23

Service—First 10 Hours



BML006959—UN—11MAY21

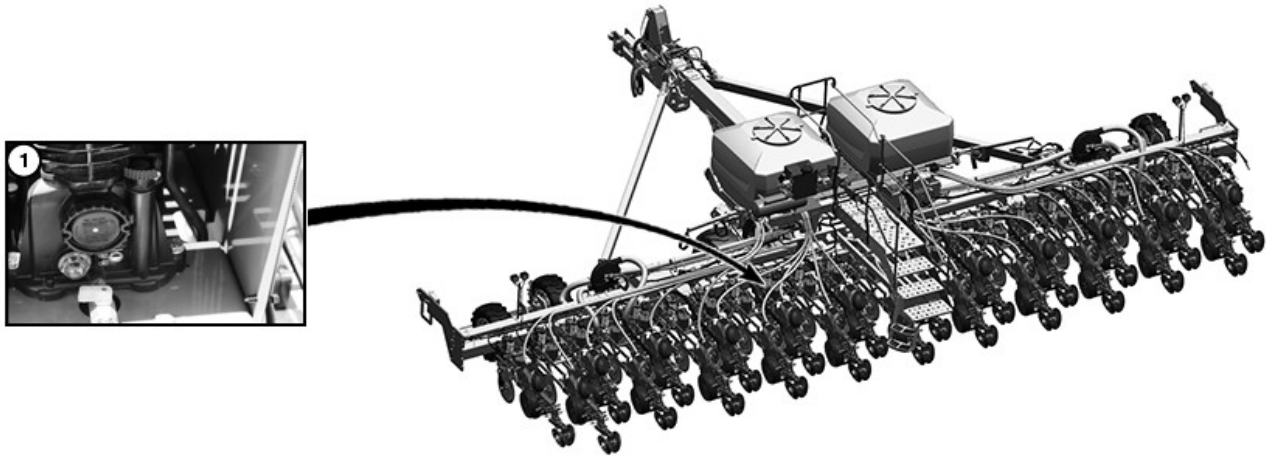
1—Check torque of the U-bolt.
2—Check the torque of the screws of the coulter support.
3—Check torque of the depth gauge wheel pivot arm.
4—Check torque of the wheel screws.
5—Check torque of the coulter cast bracket.
6—Check torque of the parallel arm screws.

NOTE: The coulter cast bracket shown at the image (5) refers to the coulter with mechanical spring. The coulter with pneumatic downforce (PDF) spring is slightly different.

KK69021,00009BF-19-27MAY21

CCS is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company

Service—First 20 Hours

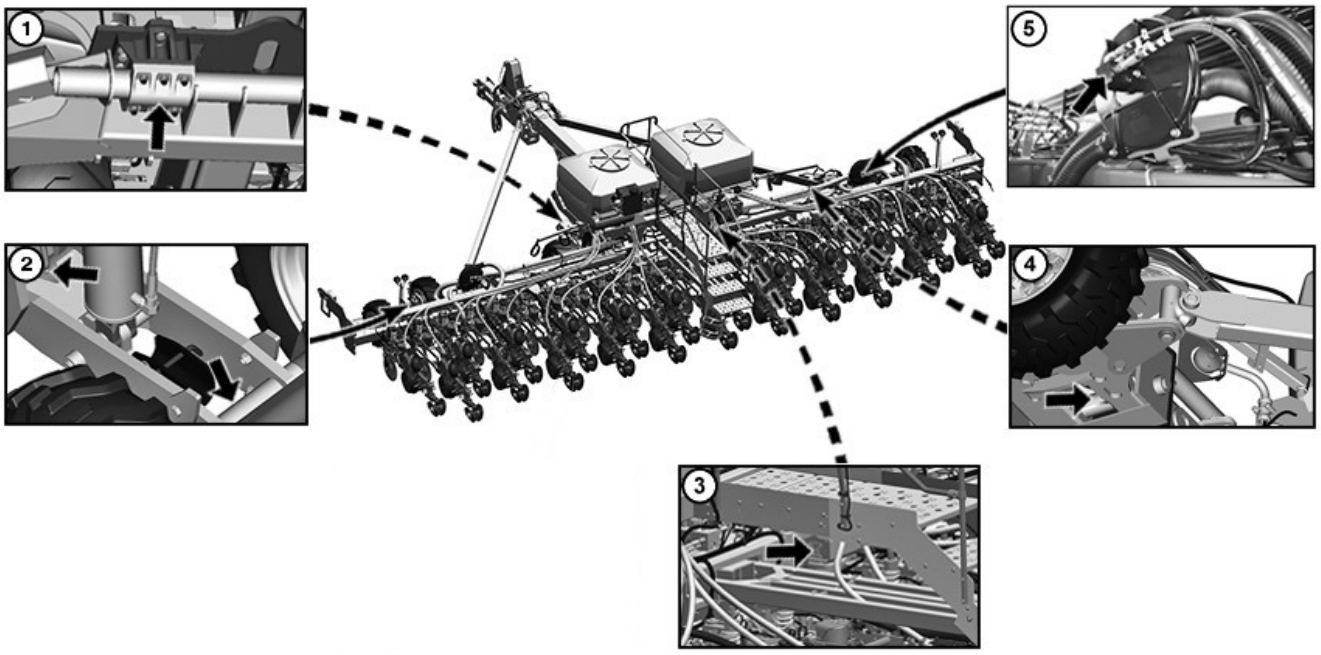


BML006960—UN—11MAY21

1—Change the oil of the pneumatic downforce (PDF) compressor (if equipped).

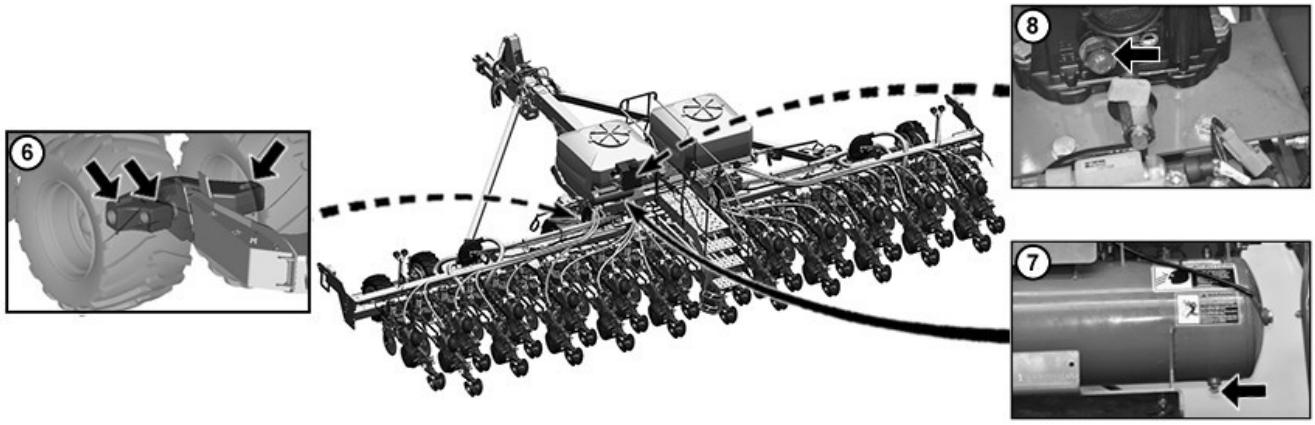
KK69021,00009C0-19-07MAY21

Service—10 Hours or Daily



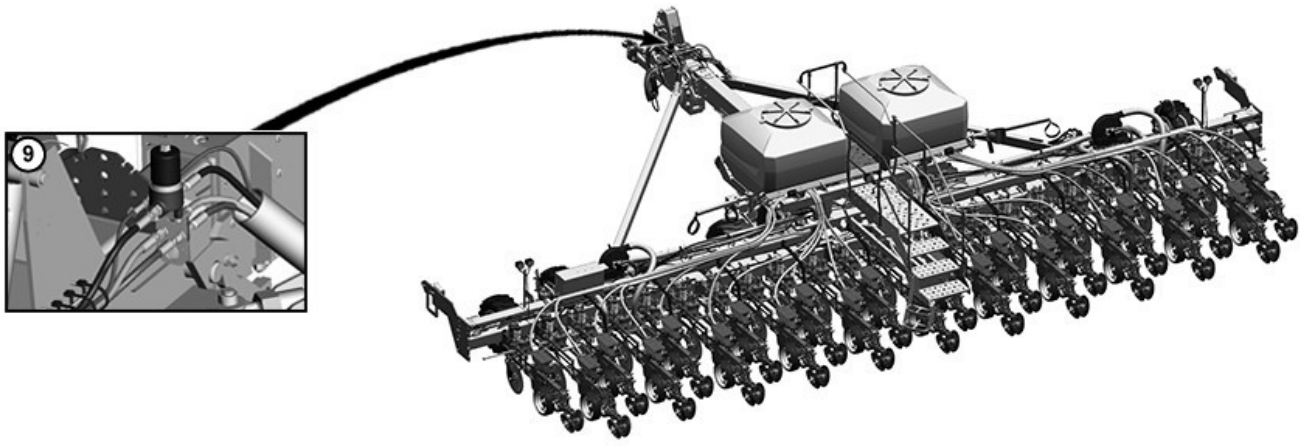
CQ1366405—UN—08MAY24

1—Lubricate the frame bearing.
2—Lubricate the wing wheel pivots
3—Lubricate the wing fold pivots.
4—Lubricate the wing flex pivots.
5—Inspect vacuum motor.



CQ1366409—UN—08MAY24

6—Check torque of the center wheel bracket.
7—Drain the tank of the pneumatic downforce (PDF) system (if equipped).
8—Check the oil level of the pneumatic downforce (PDF) compressor (if equipped).



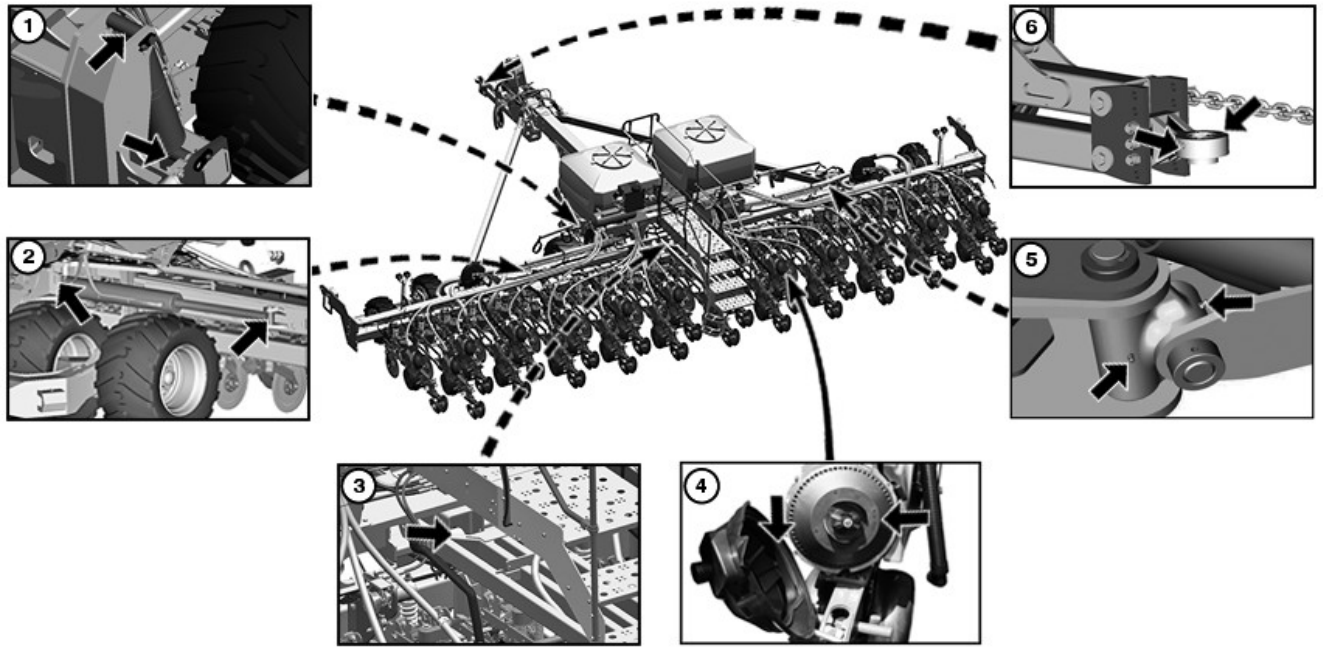
CQ1366413—UN—08MAY24

9—Check the filter of the variable rate drive system (only for MaxEmerge™ 5).

ph5u3bx,1715188153890-19-08MAY24

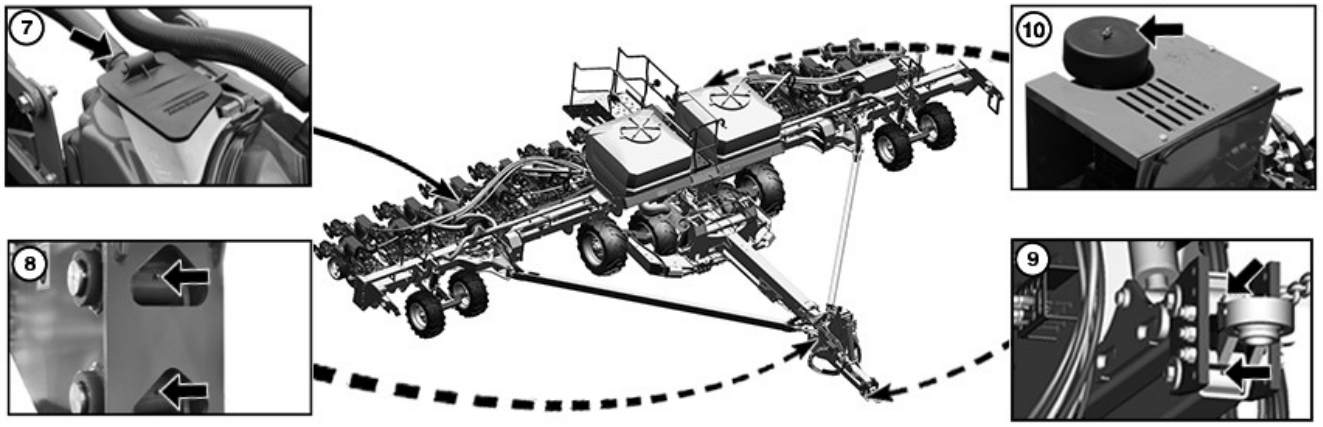
MaxEmerge is a trademark of Deere & Company

Service—Every 50 Hours



BML006965—UN—11MAY21

1—Lubricate the lift cylinders.
2—Lubricate the fold cylinders.
3—Lubricate the rear center hitch roller.
4—Lubricate vacuum seal and seed disk.
5—Lubricate the wishbone pivot.
6—Lubricate the hitch link.

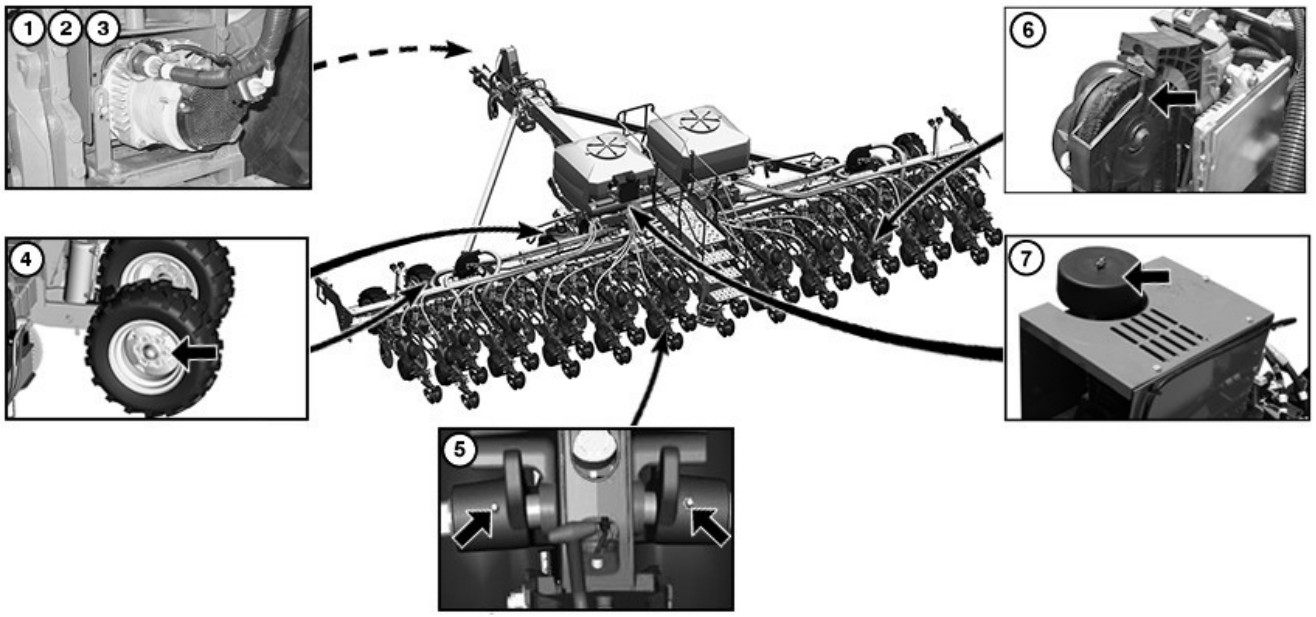


BML006966—UN—11MAY21

7—Clean the vacuum system.
8—Lubricate the rear hitch pivots.
9—Lubricate the front hitch pivots.
10—Clean the filter of the pneumatic downforce (PDF) compressor (if equipped).

KK69021,00009C2-19-10MAY21

Service—Every 100 Hours



CQ1366408—UN—08MAY24

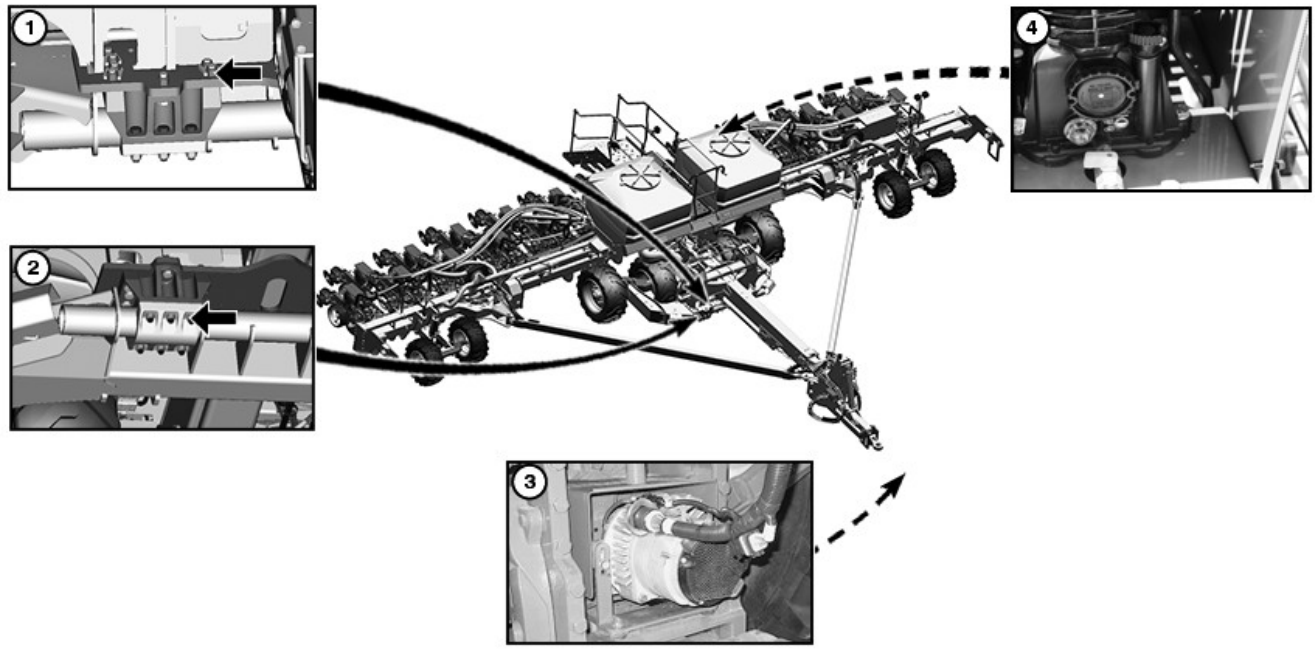
1—Lubricate the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
2—Clean the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
3—Check the gear case oil level of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
4—Check torque of the wheel screws.
5—Lubricate the depth gauge wheel arms
6—Clean BrushBelt™ cartridge (only for ExactEmerge™).
7—Replace the filter of the pneumatic downforce (PDF) compressor (if equipped).

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.

ph5u3bx,1715188192381-19-08MAY24

MaxEmerge is a trademark of Deere & Company
BrushBelt is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company

Service—Every 200 Hours



BML019369—UN—23MAR22

1—Check torque of bearing support structure.
2—Check torque of the pillow block central support nuts.
3—Change the gear case oil of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
4—Change the oil of the pneumatic downforce (PDF) compressor (if equipped).

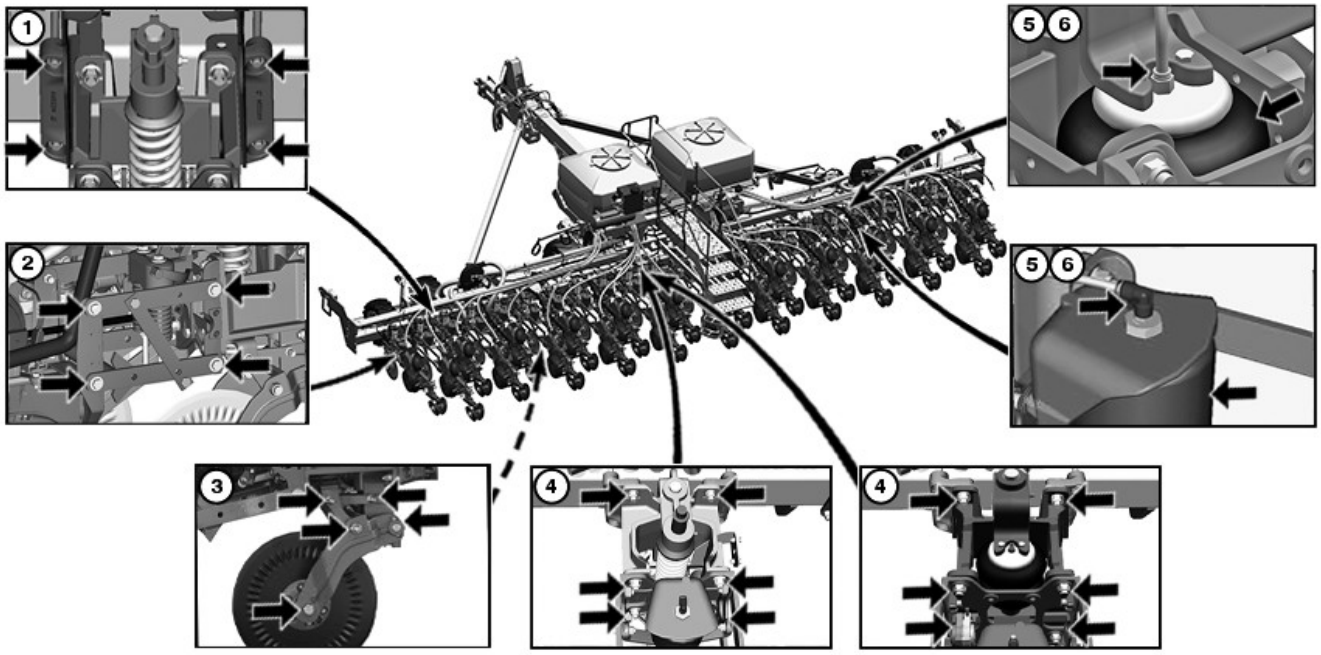
NOTE: The electronic power take-off (EPTO) is not shown at the main image because it is attached to the tractor. For more information, see the related system service section.

N8XR12J,00006CA-19-16MAR22

ExactEmerge is a trademark of Deere & Company

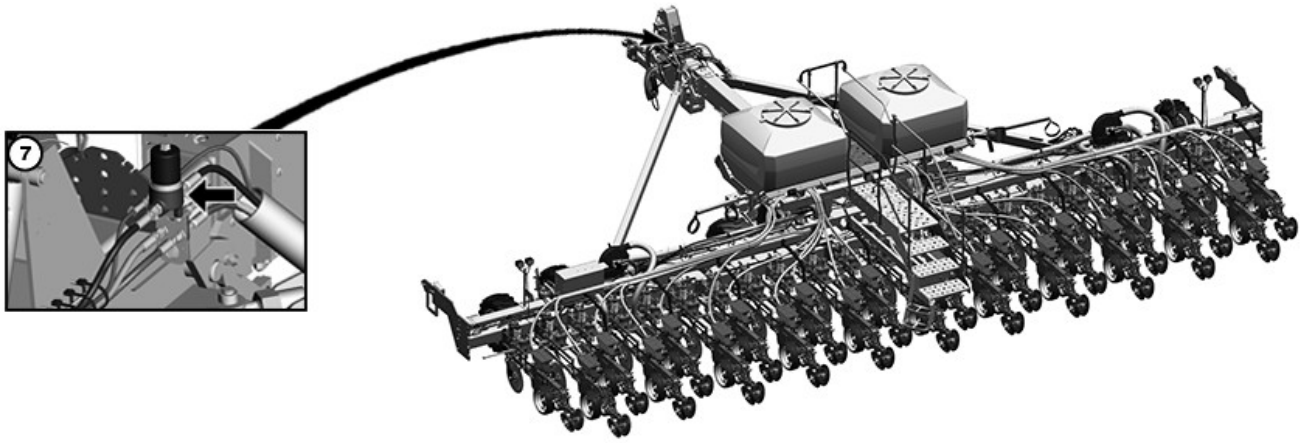
MaxEmerge is a trademark of Deere & Company

Service—Middle of Season



BML020645—UN—11MAY21

1—Check torque of the U-bolt.
2—Check torque of the parallel arm screws.
3—Check the torque of the screws of the coulter support.
4—Check torque of the coulter cast bracket.
5—Check for leaks on connectors of the pneumatic downforce (PDF) system (if equipped).
6—Check for leaks on the air springs of the pneumatic downforce (PDF) system (if equipped).



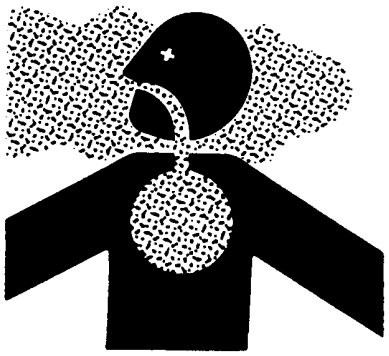
BML020644—UN—11MAY21

7—Check the filter of the variable rate drive system (only for MaxEmerge™ 5).

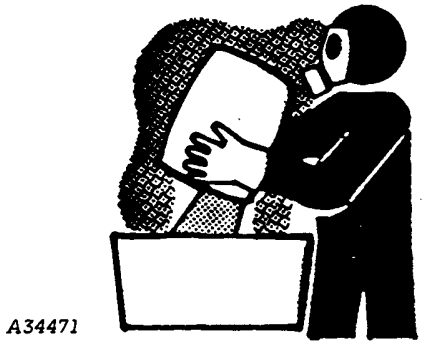
KK69021,00009C5-19-11MAY21

MaxEmerge is a trademark of Deere & Company

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



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.

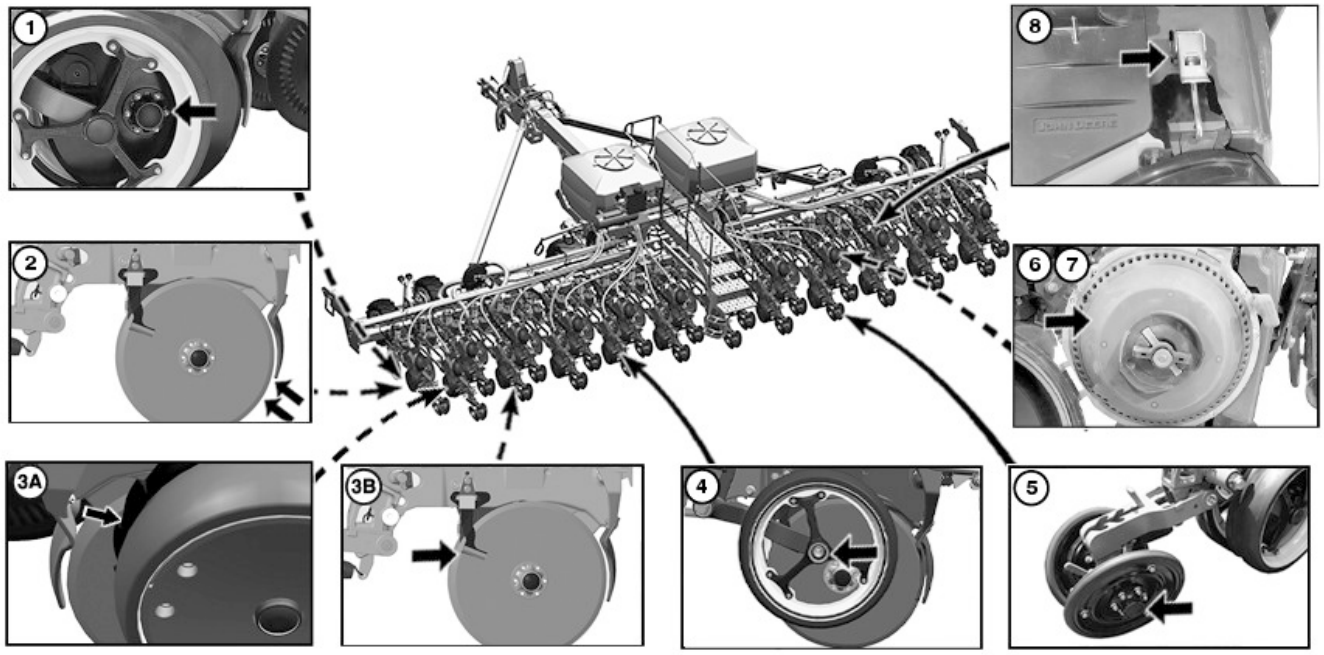
Always follow all label directions for effective, safe, and legal use of agricultural chemicals.

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.

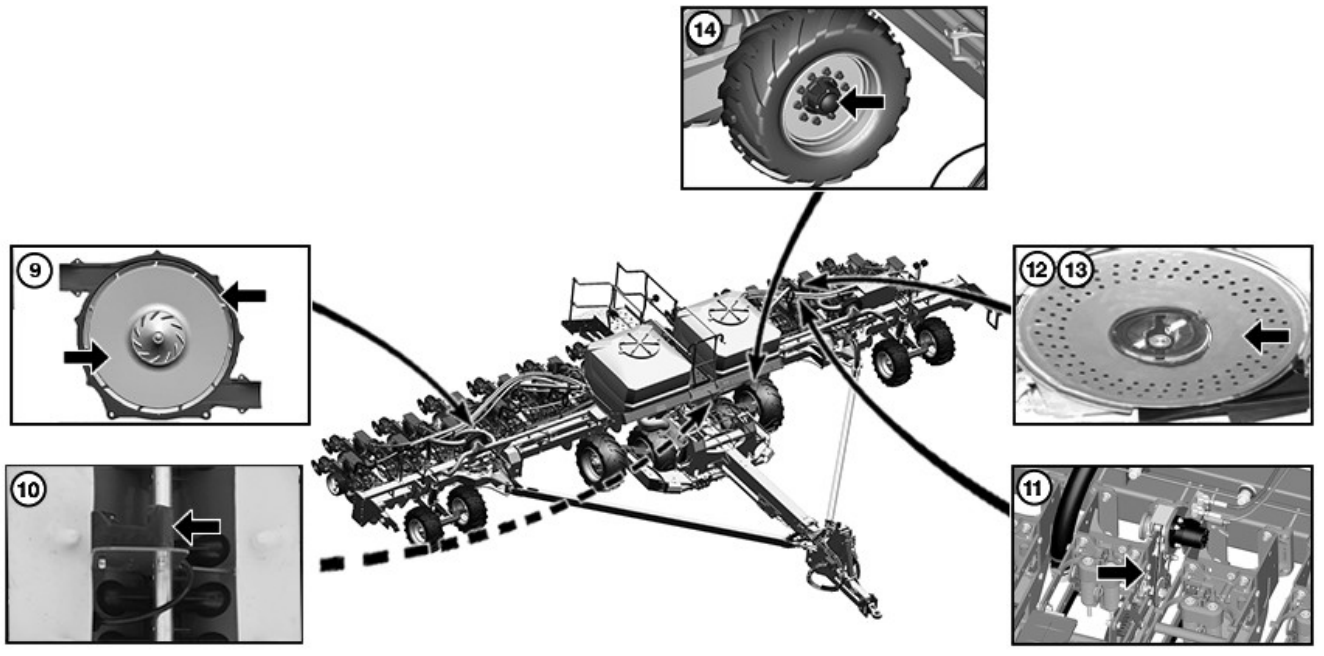
DX,WW,CHEM01-19-24AUG10

Service—Every 400 Hours (End of Season)



BML047144—UN—04AUG23

1—Check double disk blade bearings.
2—Inspect and adjust the double disk blade.
3A—Check scraper rings (if equipped).
3B—Inspect the scrapers of the double disk blade.
4—Check depth gauge wheel bearings.
5—Check closing wheel bearings.
6—Clean seed meter (ExactEmerge™).
7—Inspect and service the seed meter (only for ExactEmerge™ 5).
8—Adjust the meter latch (only for ExactEmerge™).



BML013475—UN—05APR22

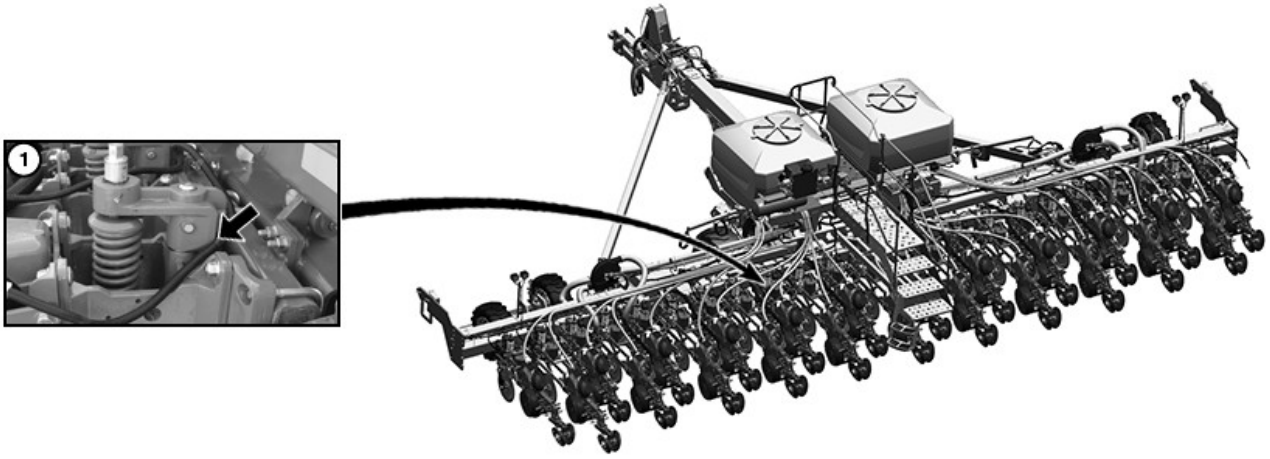
9—Inspect and clean vacuum impeller and housing.
10—Check central commodity system (CCS™) blower gauge filter.

ExactEmerge is a trademark of Deere & Company
CCS is a trademark of Deere & Company

11—Lubricate the variable rate drive roller chain (only for MaxEmerge™ 5).
12—Inspect and service the seed meter (only for MaxEmerge™ 5 and MaxEmerge™ 5e).
13—Clean seed meter (MaxEmerge™ and MaxEmerge™ 5e.)
14—Lubricate the center wheel hub.

h3ymaet,1691148453276-19-09AUG23

Service Every 1500 Hours



BML006961—UN—11MAY21

1—Replace the coulter joint grease.

KK69021,00009C7-19-07MAY21

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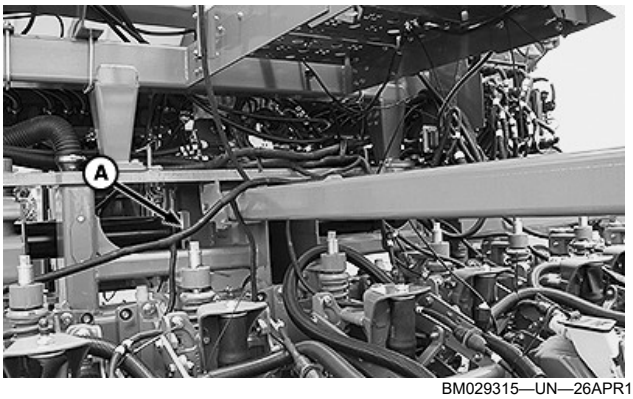
Check the Electrical Routing

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.



BM029315—UN—26APR18

2. Check if the wiring harness (A) is properly routed.
3. Check if it is folded or damaged.
4. Replace, if necessary.

KK69021,000099E-19-18MAY21

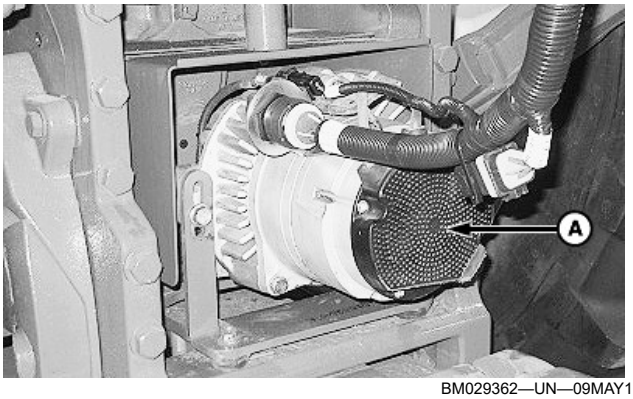
Clean the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e

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

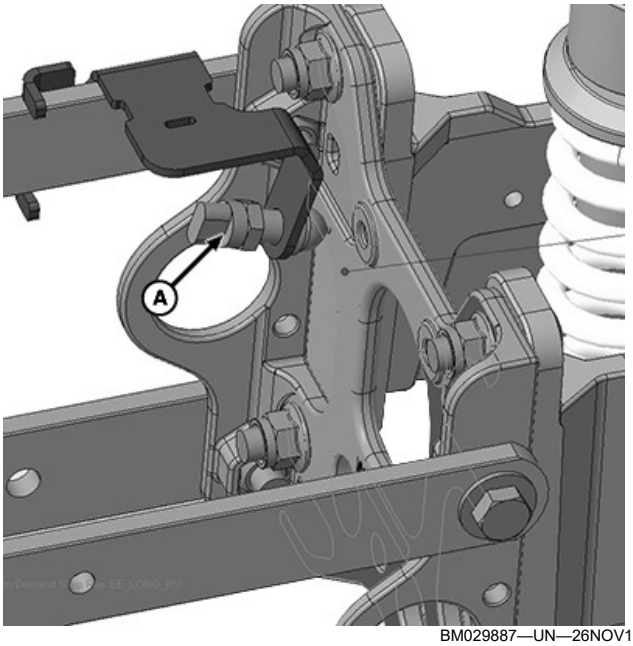
2. Clean the alternator grille (A) with a bristled brush.

KK69021,000099F-19-06MAY21

Adjust the Row Unit Sensor

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

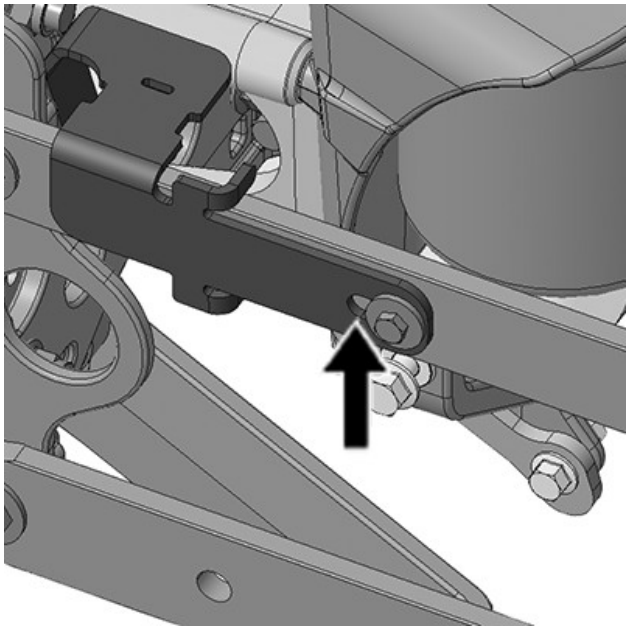


BM029887—UN—26NOV18

The row unit switch (A) senses when the machine is raised and lowered. Various systems, such as blowers and seed agitators, respond to the sensor position.

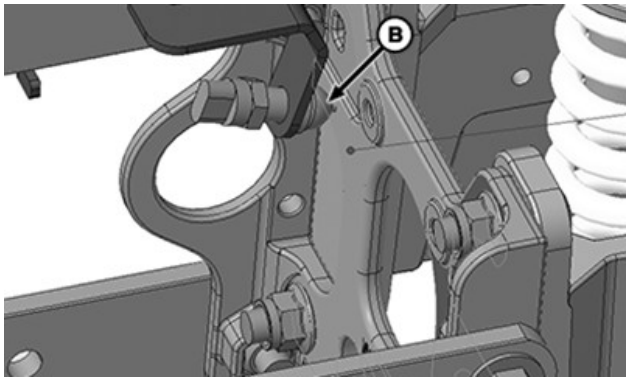
IMPORTANT: D90 MaxEmerge™ 5 planters equipped with the rate control unit (GRC) have three additional row switches. These switches are important for correct operation of the section control.

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BM029888—UN—26NOV18

1. Slide the holder through the available oblong.



BM029889—UN—26NOV18

2. The sensor should touch the contact face by compressing the sensor rod (B) about 2—3 mm (0.08—0.10 in).

NOTE: The higher the sensor pin compression, the sooner the planting system shuts down.

3. Tighten the sensor rod (B).

IMPORTANT: Avoid machine and seed damage. If the switch is mis-adjusted, seed agitators are not signaled to stop when the machine is raised.

NOTE: During adjustment, power must be supplied from the tractor.

4. Check the agitator in the central commodity system (CCS™) tank and adjust the switch so the agitator shuts off when the planter is at the full height.

NOTE: Actuating the switch at full height ensures that the system engage the moment that the row unit contacts the ground.

KK69021,00009A0-19-18MAY21

CCS is a trademark of Deere & Company

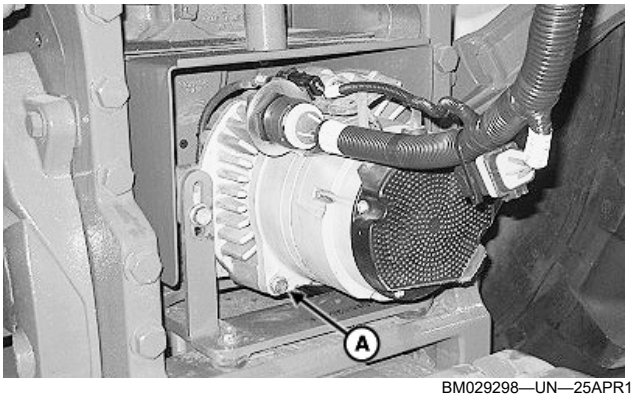
Lubricate the Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e

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 Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e procedure in this section.)

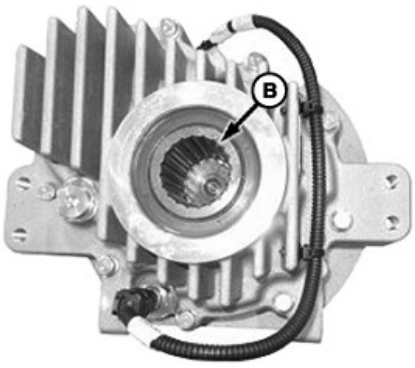
1. If the electronic power take-off (EPTO) alternator is attached on the tractor, turn off the ignition key.



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 Lubrification section.)
4. Install the EPTO alternator on the tractor with the screws (A).

TS95756,0000184-19-19MAY21

Clean the Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e

Perform this service 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.

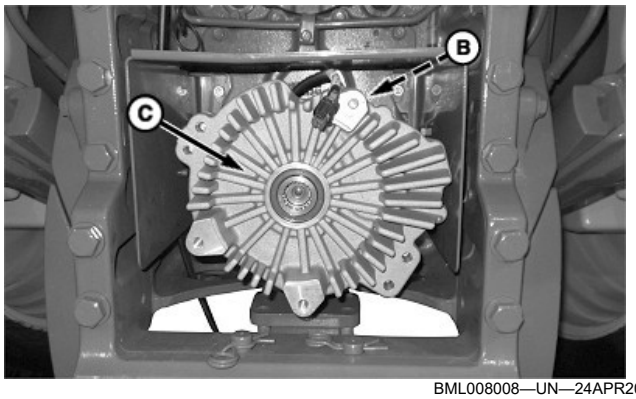
1. If the electronic power take-off (EPTO) alternator is attached on the tractor, turn off the ignition key.
2. Check the alternator grille and surrounding areas. Clean as necessary.

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 the Tractor Power Generation—Only for ExactEmerge™ and MaxEmerge™ 5e section.)

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 Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e and Check the Gear Case Oil Level of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e later in this section.)

TS95756,0000185-19-28APR21

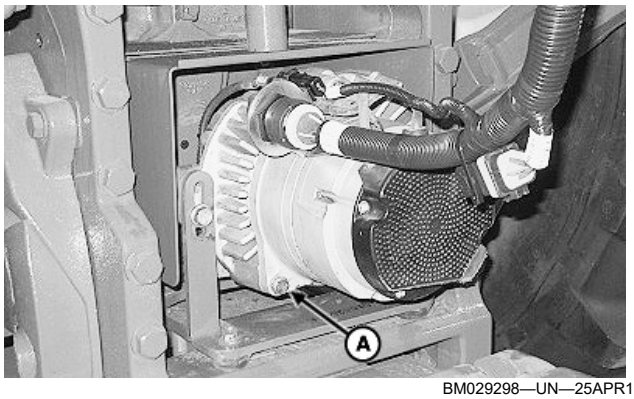
Check the Gear Case Oil Level of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e

Perform this service 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.



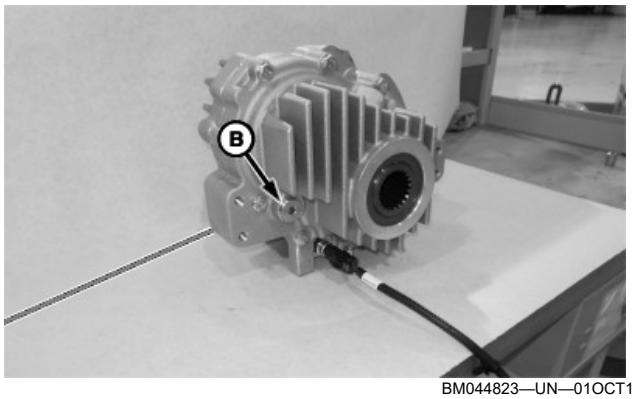
BM029298—UN—25APR18

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 Gear Case of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e 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).

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MaxEmerge is a trademark of Deere & Company

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.)

TS95756,0000186-19-19MAY21

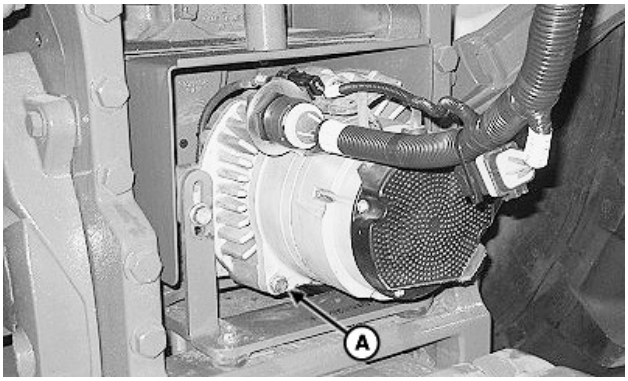
Change the Gear Case Oil of the Electronic Power Take-Off (EPTO) Alternator—Only for ExactEmerge™ and MaxEmerge™ 5e

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.

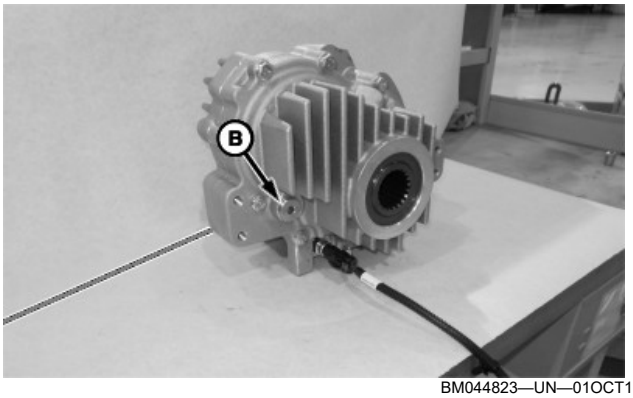
NOTE: The alternator grille must be checked and cleaned as necessary.

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.

TS95756,0000187-19-19MAY21

Lubricate the Lift Cylinders

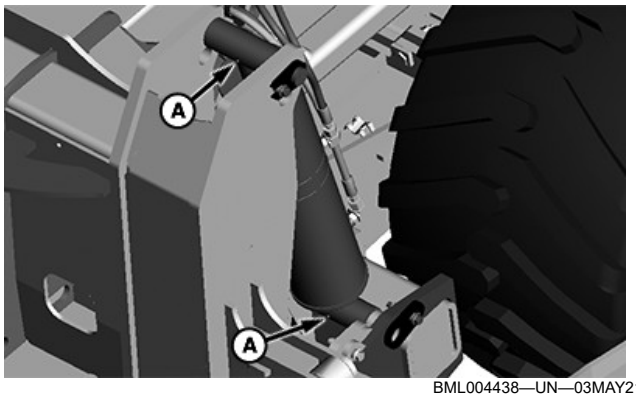
Perform this service at every 50 hours.

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.
2. Thoroughly clean all the grease fittings.

NOTE: Damaged grease fittings must be replaced.



BML004438—UN—03MAY21

3. Lubricate grease fittings (A) on both sides of the planter. (See the correct grease in Multipurpose Extreme Pressure (EP) Grease in Lubrication.)

TS95756,0000188-19-24APR24

Lubricate the Fold Cylinders

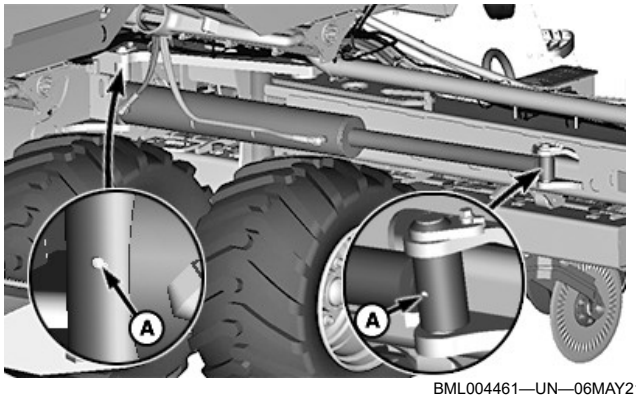
Perform this service at every 50 hours.

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.

NOTE: Damaged grease fittings must be replaced.



BML004461—UN—06MAY21

2. Thoroughly clean grease fittings (A).
3. Lubricate grease fittings (A).
4. Apply grease to the corresponding grease fittings on the fold cylinder from the other side of the planter.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication.)

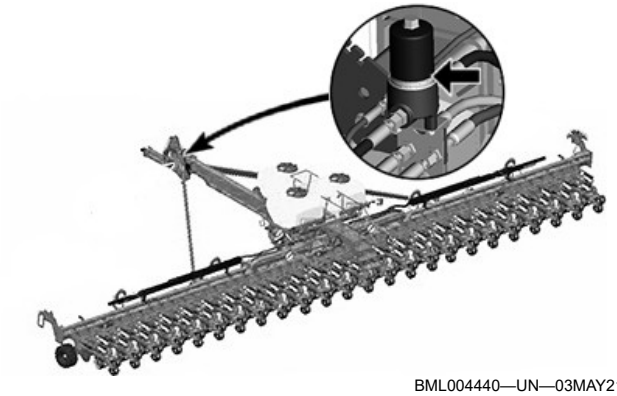
TS95756,0000189-19-24APR24

Check the Filter of the Variable Rate Drive System—Only for MaxEmerge™ 5

Perform this service at the start of the season, at every 10 hours or daily, and at the middle of the season.

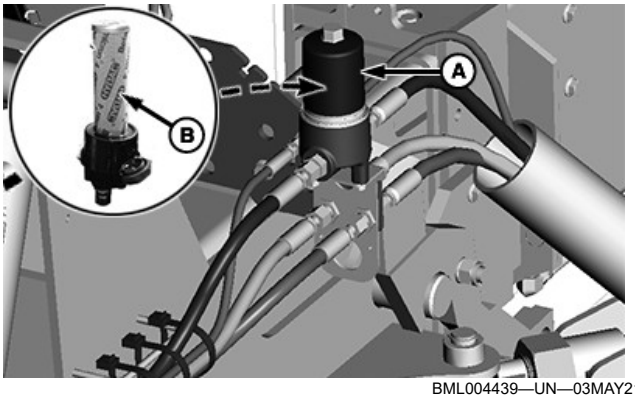
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid personal injury or death caused by pressurized fluid leakage. Stop the motor and relieve the pressure of the system before disconnecting or connecting the hydraulic hoses or any other lines.



BML004440—UN—03MAY21

1. Locate the filter of the variable rate drive system on the planter.



BML004439—UN—03MAY21

2. Loosen the cover (A) and check the condition of the filter element (B). If necessary, change the filter element (B) as follows:
   a. Disconnect the selective control valve (SCV) of the variable rate drive (VRD) system.
   b. Remove the filter element (B).



CQ298352—UN—27JAN15



CQ298353—UN—27JAN15

   c. Install a new filter, placing the hole (C) on the support (D).
   d. Replace the O-ring of the cover (A) and install the cover (A) back in position.

TS95756,000018A-19-19MAY21

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.

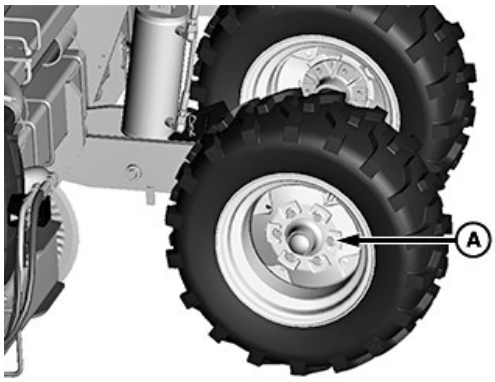
DX,TIRECP-19-24AUG90

Check Torque of the Wheel Screws

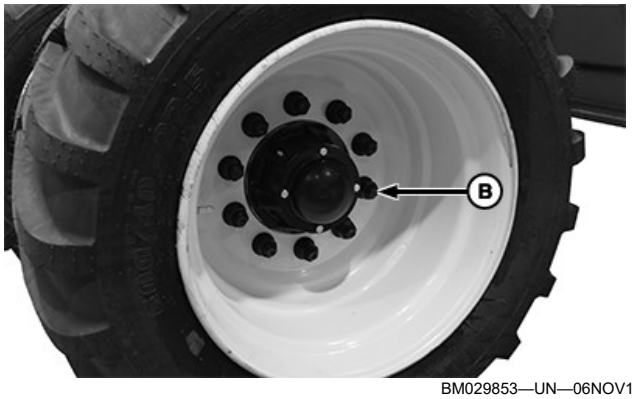
Perform this service after the first 10 hours of use, at the start of the season, and at every 100 hours.

Make sure to comply with all the safety conditions before servicing.

Outer Wing Wheels



BML004441—UN—03MAY21



BM029853—UN—06NOV18

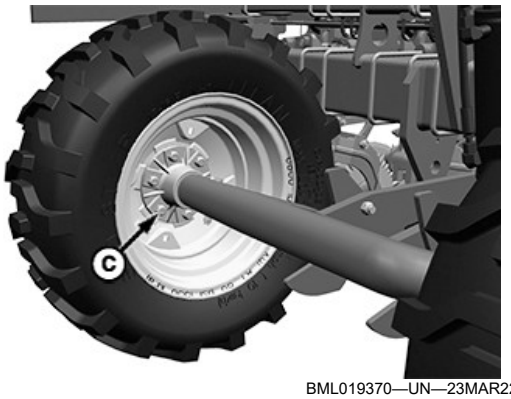
Left-Hand Side Outer Wing Wheels Equipped with Motion Sensor

Tighten the wheel nuts (A) of the outer wings and the wheel nuts (B) of the left-hand side wing to specification.

Specification

Wing Wheels Nuts—Torque. . . . . 175 N·m (129 lb·ft)

NOTE: The wheel nuts (B) are only used on the outer wing wheel of the left-hand side when equipped with motion sensor.



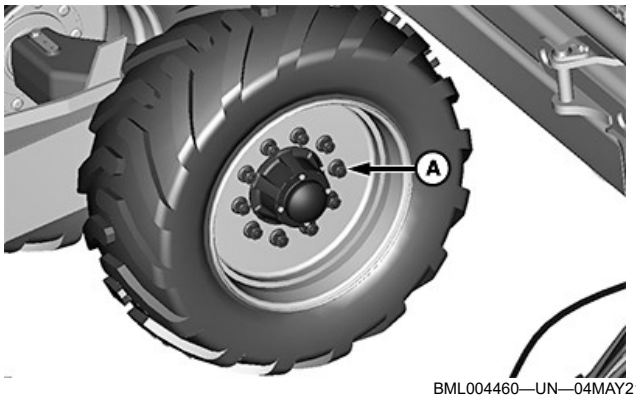
BML019370—UN—23MAR22

Check the jam nuts (C) torque of the wheel wings to specification.

Specification

Wing Wheels Nuts—Torque. . . . . 175 N·m (129 lb·ft)

Center Wheels



BML004460—UN—04MAY21

Tighten the nuts (A) of the center wheel hub to specification.

Specification

Center Wheels Nuts—Torque. . . . . 881 N·m (650 lb·ft)

N8XR12J,00006CC-19-16MAR22

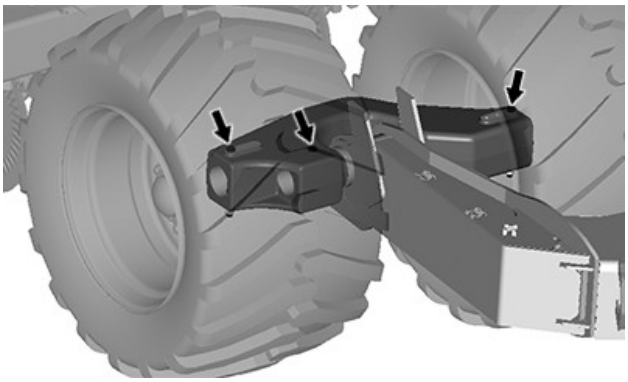
Check Torque of the Center Wheel Bracket

Perform this service at each 10 hours of use or daily.

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.



BML004445—UN—03MAY21

2. Check the torque of all the screws and nuts of the center wheel bracket. Check on both sides of the machine.
3. Retighten, if necessary, to specification:

Specification

Nuts and Screws—Torque. . . . . 345 N·m (467 lb·ft)

TS95756,000018C-19-04MAY21

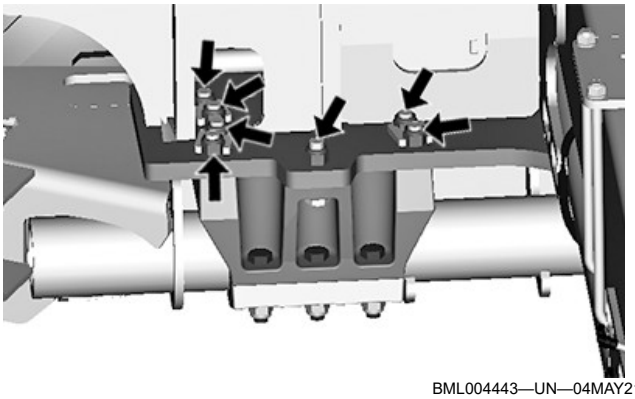
Check Torque of Bearing Support Structure

Perform this service at each 200 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.



BML004443—UN—04MAY21

2. If necessary, tighten the nuts of the bearing support structure to specification.

Specification

Nuts of the Bearing Support Structure—Torque. . . . . 675 N·m (498 lb·ft)

TS95756,000018D-19-04MAY21

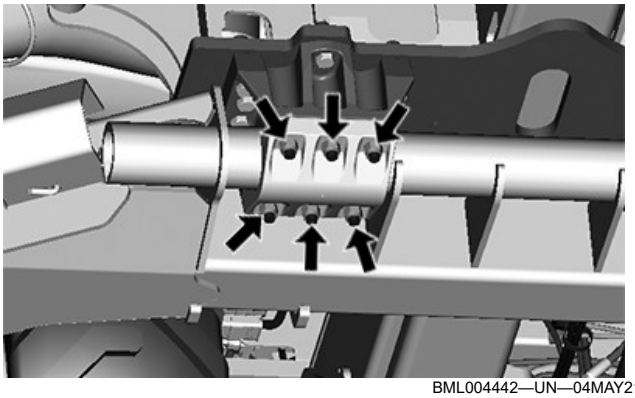
Check Torque of the Pillow Block Central Support Nuts

Perform this service at every 200 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.
2. Tighten the nuts of the indicated screws of the pillow block to specification.



BML004442—UN—04MAY21

Specification

Pillow Block to the Central Support Nuts—Torque. . . . . 675 N·m (498 lb·ft)

TS95756,000018F-19-04MAY21

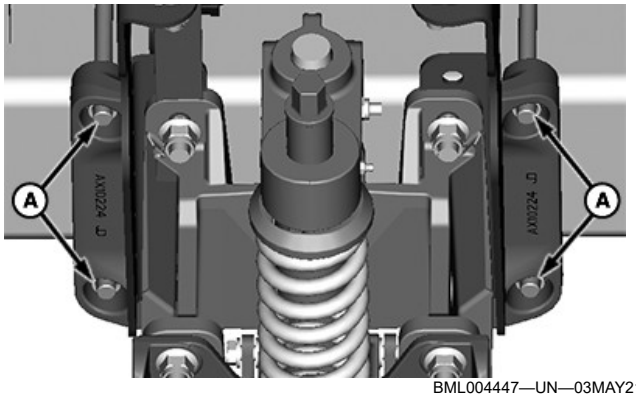
Check Torque of the U-Bolt

Perform this service at the start of the season, at the first 10 hours of operation, and at the middle of the season.

Make sure to comply with all the safety conditions before servicing.

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

1. Park the planter on level ground.



BML004447—UN—03MAY21

2. Check the torque of the U-bolt nuts (A).
3. Repeat the procedure on all rows.
4. If necessary, tighten as specified.

Specification

U-Bolt Nuts—Torque. . . . . 200 N·m (147 lb·ft)

TS95756,0000190-19-10MAY21

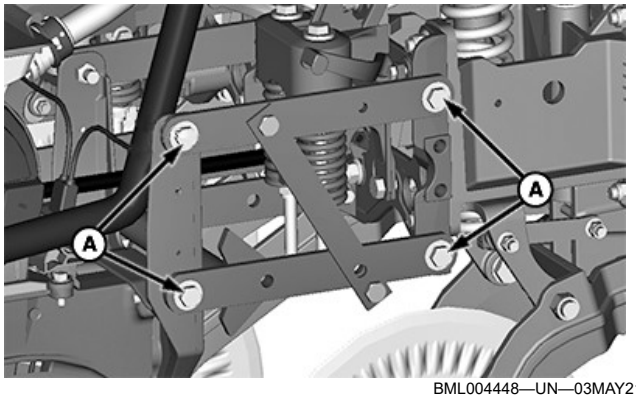
Check Torque of the Parallel Arm Screws

Perform this service at the first 10 hours of operation, at the start of the season, and at the middle 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.



BML004448—UN—03MAY21

2. Tighten the row unit screws (A) on both sides.
3. Repeat the procedure on all rows.
4. Tighten the screws as specified.

Specification

Row Unit Fixing Screws—All Short Row Units and Long Row Unit for MaxEmerge™ 5—Torque. . . . . 250 N·m (184 lb·ft)

Specification

Row Unit Fixing Screws—Long Row Unit for MaxEmerge™ 5e and ExactEmerge™—Torque. . . . . 300 N·m (221 lb·ft)

TS95756,0000191-19-04MAY21

Lubricate the Variable Rate Drive Roller Chain—Only for MaxEmerge™ 5

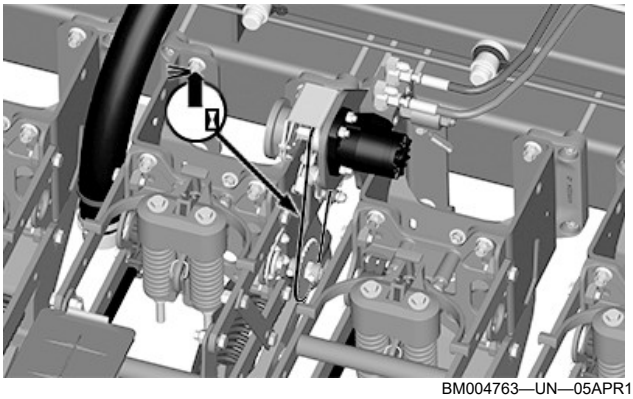
Perform this service at the start of the season and at every 400 hours.

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.

MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company



BM004763—UN—05APR16

2. Lubricate the roller chain of the variable rate drive.

NOTE: Lubricate all the machine roller chains with John Deere Multipurpose Spray Lube, TY6350 (or equivalent) at intervals sufficient to maintain a free chain movement.

TS95756,0000193-19-30APR21

Lubricate the Center Wheel Hub

Perform this service at every 400 hours (end of season).

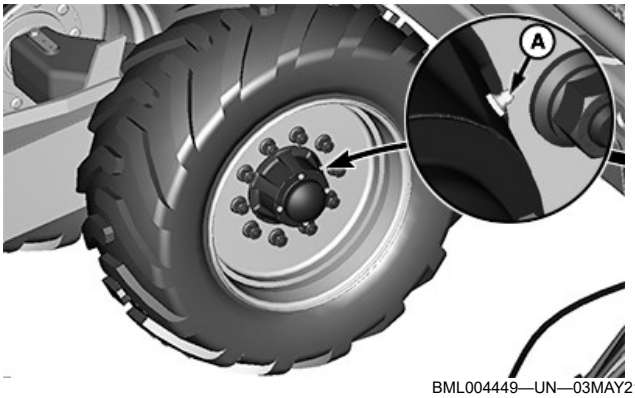
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

NOTE: If necessary, damaged grease fittings must be replaced.

2. Clean all the grease fittings.



BML004449—UN—03MAY21

3. Lubricate the grease fitting (A) of the center 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.

N8XR12J,00006CD-19-05APR22

Lubricate the Wing Wheel Pivots

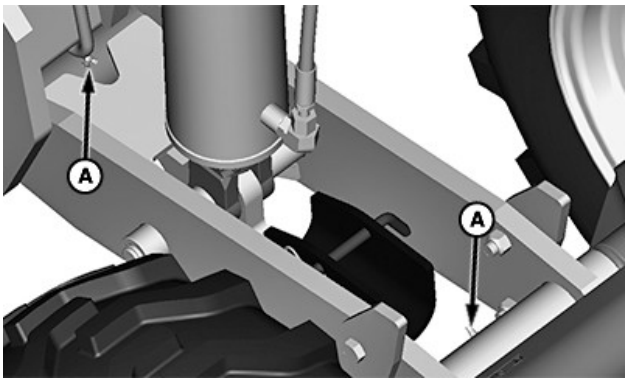
Perform this service at every 10 hours or daily.

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.



BML004450—UN—03MAY21

2. Thoroughly clean the grease fittings (A) of all the wings wheels pivots.
3. Lubricate the 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.

TS95756,0000195-19-30APR21

Lubricate the Frame Bearing

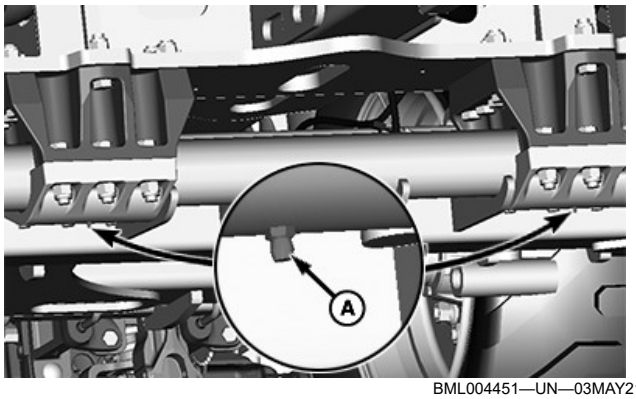
Perform this service at every 10 hours or daily.

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.



BML004451—UN—03MAY21

2. Thoroughly clean all grease fittings (A).
3. Apply grease to the grease fitting (A).
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.

TS95756,0000196-19-30APR21

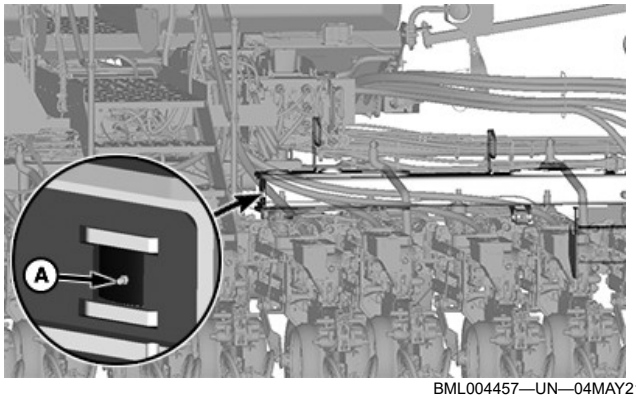
Lubricate the Wing Fold Pivots

Perform this service at every 10 hours or daily.

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.



BML004457—UN—04MAY21

2. Thoroughly clean the grease fitting (A).

NOTE: Damaged grease fittings must be replaced.

3. Lubricate the 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.

TS95756,0000197-19-04MAY21

Lubricate the Wing Flex Pivots

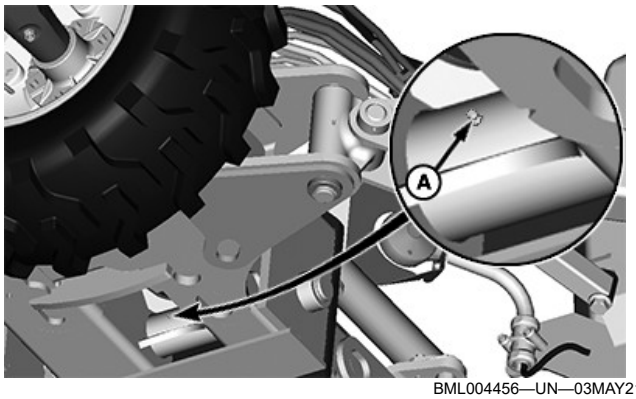
Perform this service at every 10 hours or daily.

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.



BML004456—UN—03MAY21

2. Thoroughly clean the grease fitting (A).
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.

TS95756,0000198-19-04MAY21

Lubricate the Hitch Link

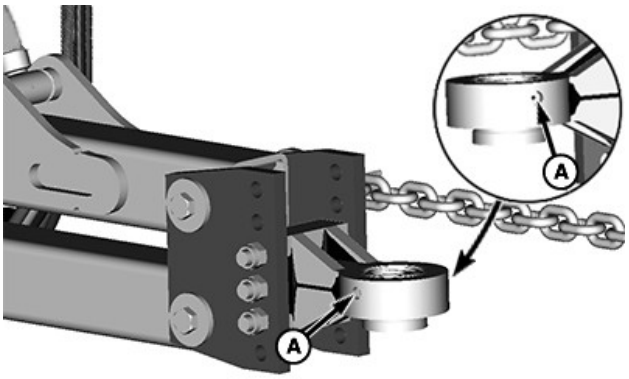
Perform this service at every 50 hours.

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.

NOTE: Damaged grease fittings must be replaced.



BML004455—UN—03MAY21

2. Thoroughly clean the grease fittings (A).
3. Lubricate the grease fittings (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

TS95756,000019A-19-03MAY21

Lubricate the Front Hitch Pivots

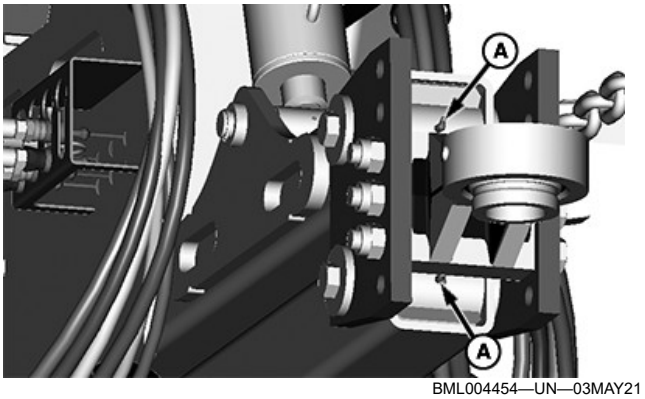
Perform this service at every 50 hours.

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.

NOTE: Damaged grease fittings must be replaced.



BML004454—UN—03MAY21

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.

TS95756,000019B-19-03MAY21

Lubricate the Rear Hitch Pivots

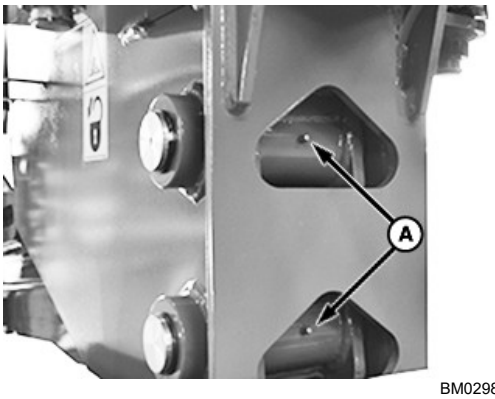
Perform this service at every 50 hours.

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.

NOTE: Damaged grease fittings must be replaced.



BM029846—UN—05NOV18

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.

TS95756,000019C-19-03MAY21

Lubricate the Wishbone Pivot

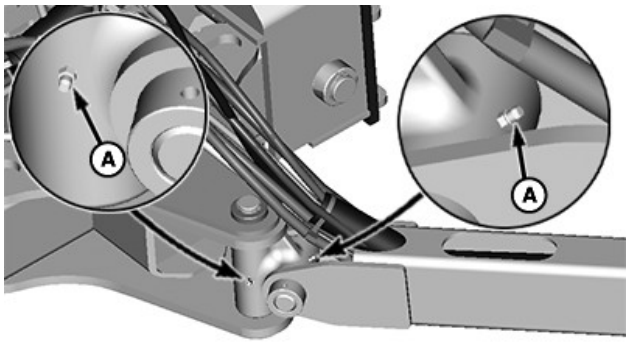
Perform this service at every 50 hours.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

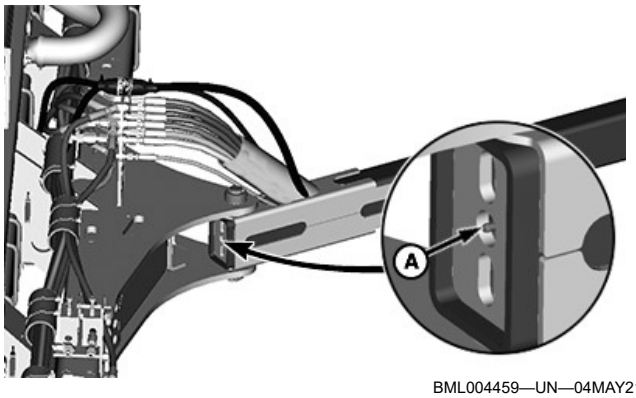
1. Park the planter on level ground.

NOTE: Damaged grease fittings must be replaced.



BML004452—UN—04MAY21

Wishbone Pivot—DB40 and DB50 Planters



BML004459—UN—04MAY21

Wishbone Pivot—DB74 and DB90 Planters

2. Thoroughly clean the grease fittings (A).
3. Lubricate the grease fittings (A).
4. Clean and lubricate the corresponding grease fittings at the wishbone pivot from the other side of the machine.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

TS95756,000019D-19-27MAY21

Lubricate the Rear Center Hitch Roller

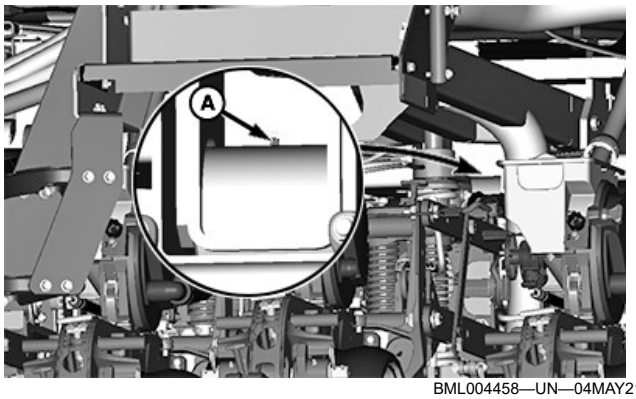
Perform this service at every 50 hours.

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.

NOTE: Damaged grease fittings must be replaced.



BML004458—UN—04MAY21

2. Thoroughly clean the grease fitting (A).
3. Lubricate the grease fitting (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see the Lubrication section.

TS95756,000019E-19-04MAY21

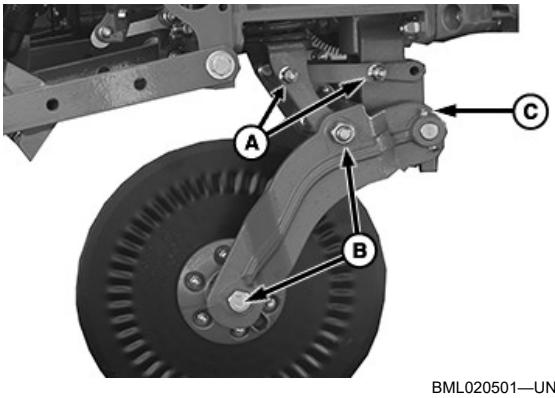
Check the Torque of the Screws of the Coulter Support

Perform this service at the first 10 hours of operation, at the start of the season and, at the middle 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.



BML020501—UN—02DEC20

3. Check the torque of the upper screws (A). If necessary, tighten to specification.

Specification

Upper Screws (A)—Torque. . . . . 90 N·m (66 lb·ft)

4. Check the torque of the lower screws (B). If necessary, tighten to specification.

Specification

Lower Screws (B)—Torque. . . . . 250 N·m (184 lb·ft)

IMPORTANT: Avoid damage to the nut (C), do not overtighten.

5. Check if the nut (C) is loose. Retighten if necessary.
6. Repeat the procedure on all the row units.

NN32476,00003F1-19-29APR21

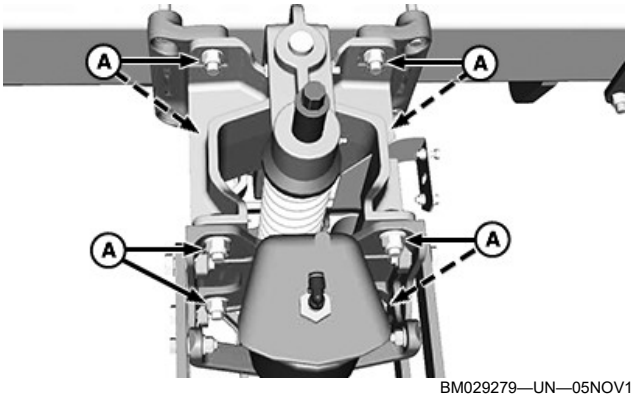
Check Torque of the Coulter Cast Bracket

Perform this service at the first 10 hours of operation, at the start of the season and, at the middle of the season.

Make sure to comply with all the safety conditions before servicing.

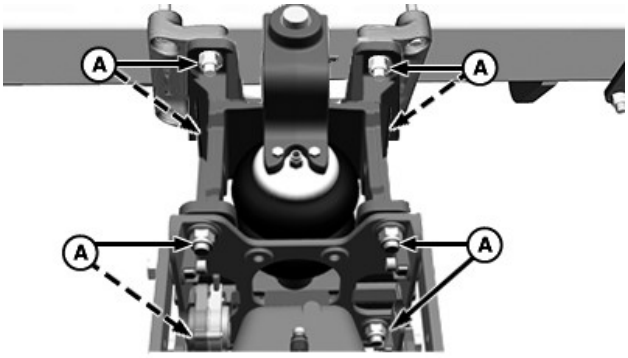
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



BM029279—UN—05NOV18

Coulter with Mechanical Spring



BML020616—UN—11MAY21

Coulter with Pneumatic Downforce (PDF) Spring

2. Check torque of the coulter cast bracket screws (A).
3. Tighten the screws as specified.

Specification

Screws—Torque. . . . . 200 N·m (147 lb·ft)

4. Repeat the procedure on all row units.

NN32476,00003F2-19-12MAY21

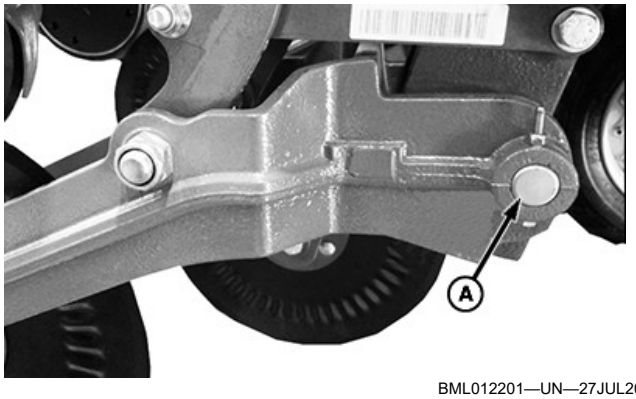
Lubricate the Coulter Pivot Arms

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.



BML012201—UN—27JUL20

2. Lubricate the coulter pin (A).

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see Multipurpose Extreme Pressure (EP) Grease on Lubrication section.

NN32476,00003F3-19-05JUN24

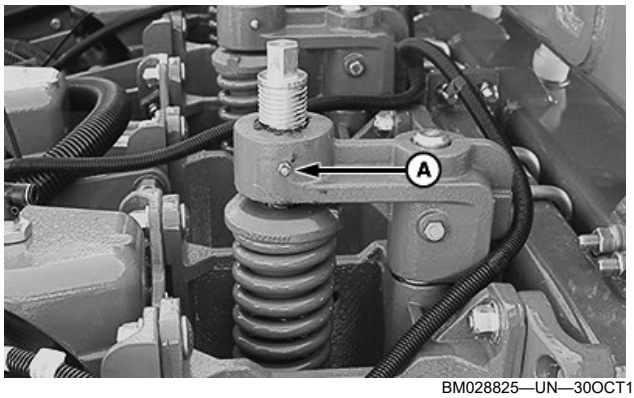
Lubricate the Coulter Adjustment Spring—Only for Mechanical Springs Downforce

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.



BM028825—UN—30OCT18

Coulter Adjustment Spring

2. Thoroughly clean all the grease fittings (A).

NOTE: If necessary, replace damaged grease fittings.

IMPORTANT: Avoid system malfunction, do not apply grease in excess at the grease fittings (A).

3. Lubricate the grease fittings (A).

4. Apply grease on all other grease fittings.

IMPORTANT: Make sure not to over-lubricate this point. Excessive lubrication spring may cause loss of performance of the coulters, resulting in loss of spring pressure. The purpose of this lubrication is only to avoid the accumulation of dirt and possible oxidation of the assembly.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see Multipurpose Extreme Pressure (EP) Grease on Lubrication section.

NN32476,00003F4-19-27MAY21

Replace the Coulter Joint Grease

Perform this service at every 1500 hours.

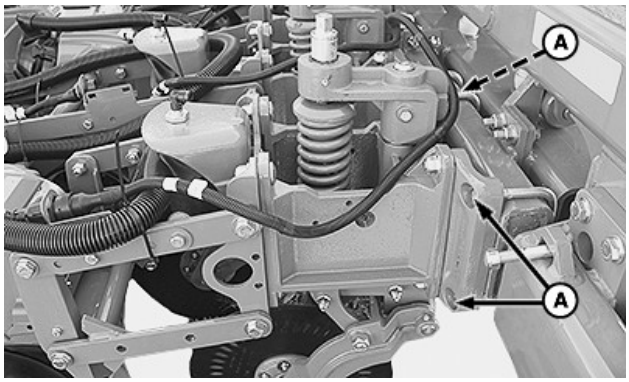
Make sure to comply with all the safety conditions before servicing.

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 with the planter raised.

NOTE: The following images show the coulter with the mechanical spring option. However, this procedure is also applicable for the coulter with pneumatic downforce (PDF) spring option.

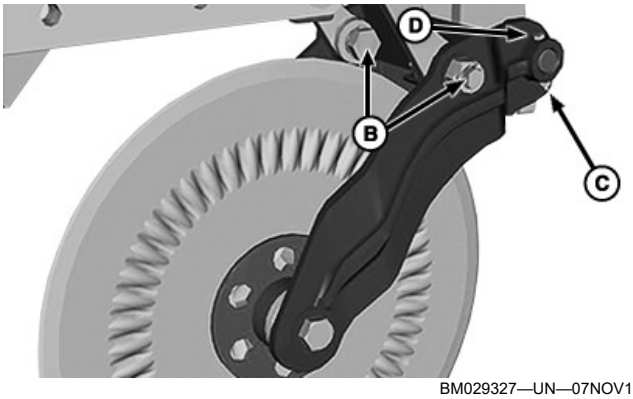
1. Park the planter on level ground.



BM029326—UN—27APR18

2. Loosen the screws (A) and remove the row unit.

Specification	
Nuts—Torque	200 N·m (147 lb·ft)

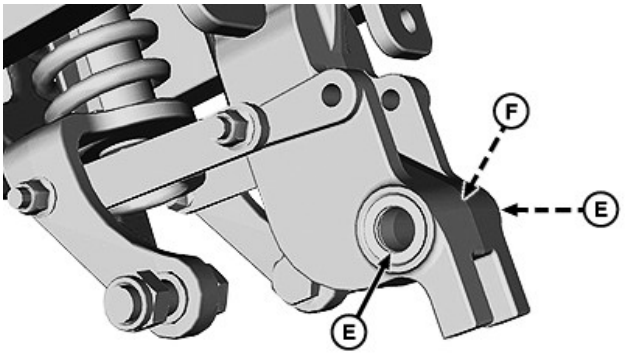


BM029327—UN—07NOV18

3. Loosen the nuts and screws (B). Loosen the nut and screw (C) and remove the pin (D).

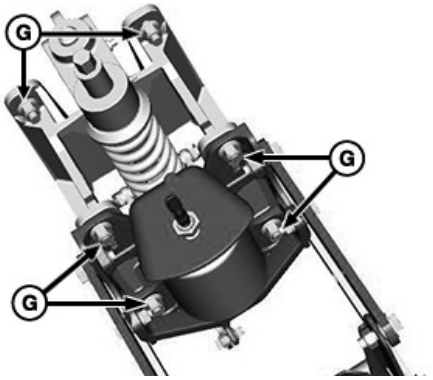
Specification

Nuts and Screws—Torque. . . . . 250 N·m (184 lb·ft)



BM029332—UN—07NOV18

4. Apply grease to the center of the bracket (F). Replace the O-rings (E) and lubricate the new ones.

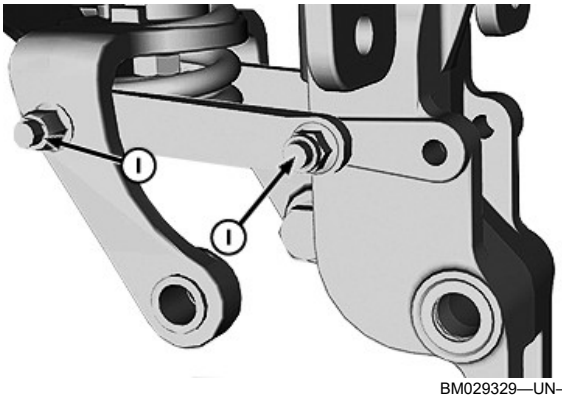


BM029328—UN—07NOV18

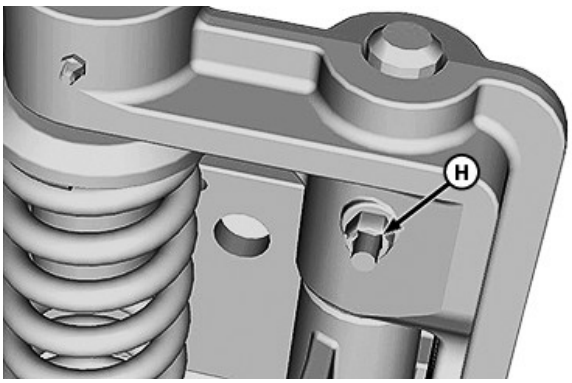
5. Loosen the screws (G) and remove the coulter assembly from the row unit.

Specification

Nuts—Torque. . . . . 200 N·m (147 lb·ft)



BM029329—UN—07NOV18

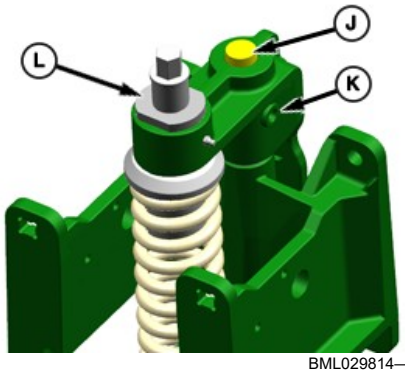


BM029333—UN—07NOV18

6. Loosen the nuts (H) and the screws (I).

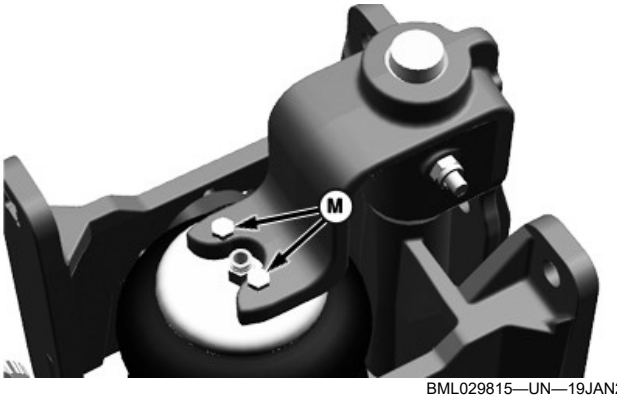
Specification

Nuts—Torque. . . . . 155 N·m (114 lb·ft)



BML029814—UN—19JAN23

7. If equipped, remove the counternut (L).
8. Remove the pin (J) and the disengage assembly (K).



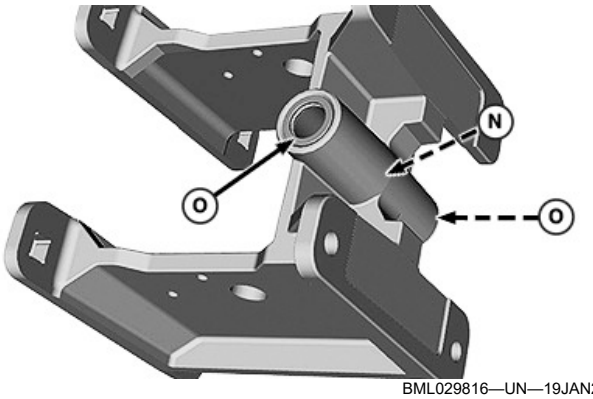
BML029815—UN—19JAN23

9. For the pneumatic downforce (PDF) spring option, loosen the screws (M).

Specification

Screws—Torque. . . . . 22 N·m (195 lb·in)

NOTE: Avoid damage to the screws (M). Do not overtighten.



BML029816—UN—19JAN23

10. Apply grease to the center of the bracket (N). Replace the O-rings (O) and lubricate the new ones.

NOTE: Use multipurpose extreme pressure (EP) grease. For more information, see Multipurpose Extreme Pressure (EP) Grease on Lubrication section.

11. To assemble, follow the procedure in reverse order.

h3ymaet,1674131568330-19-19JAN23

Check Double Disk Blade Bearings

Perform this service at every 400 hours of operation.

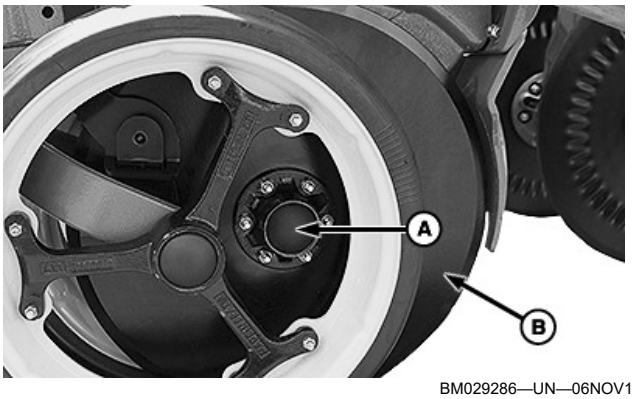
Make sure to comply with all the safety conditions before servicing.

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 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 unit.

K2F379Y,000064B-19-05JUN24

Inspect and Adjust the Double Disk Blade

Perform this service at every 400 hours or as required.

Make sure to comply with all the safety conditions before servicing.

NOTE: To check which row unit shank is equipped, see Row Unit Shank Identification Type in the Double Disks section.

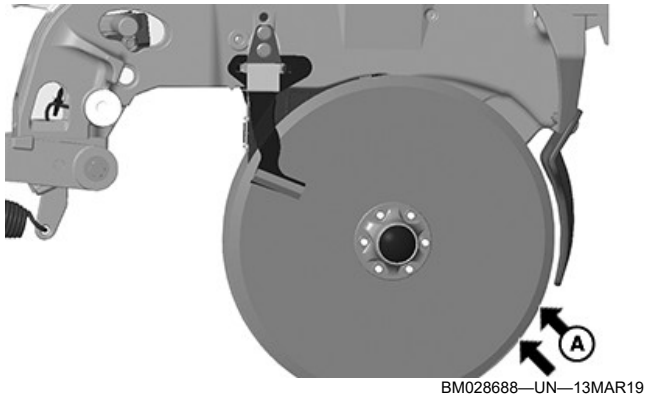
CAUTION: Avoid serious injury or death. Properly support the machine.

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.

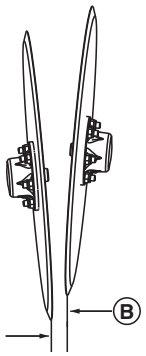


BM028688—UN—13MAR19

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.

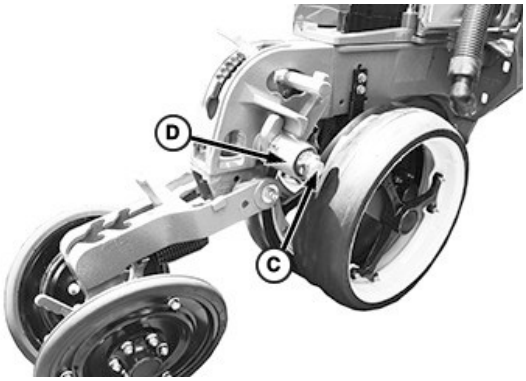


BML047151—UN—14AUG23

3. For offset disks, check if the clearance (B) between disks is according to specification.

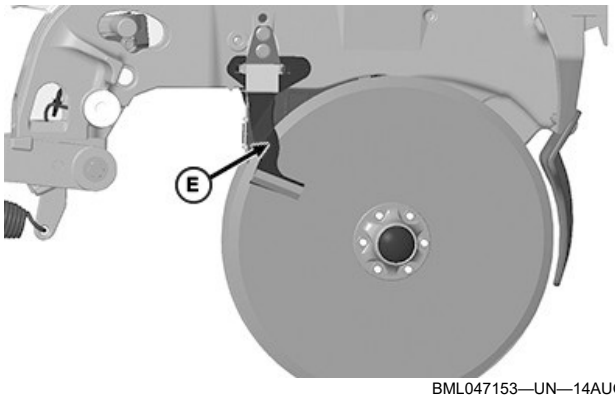
Specification

Clearance (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.



BML047153—UN—14AUG23

5. Inspect the scrapers (E) for excessive wear and replace as necessary.
6. 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 Double Disk Blade



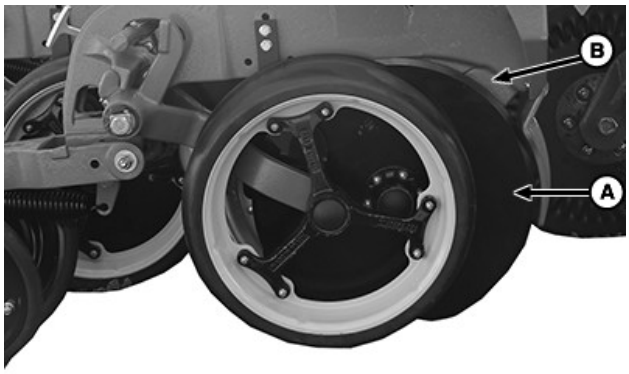
A89612—UN—17FEB16

Centered Blades



BM029825—UN—01NOV18

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).

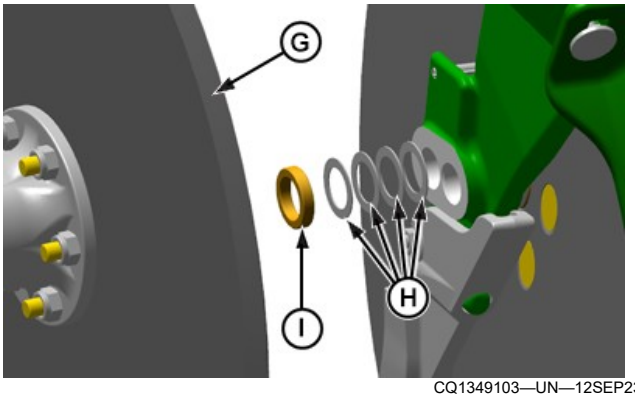
IMPORTANT: Avoid spindle damage. The nut on the left-hand side of the row unit has left-hand side threads.

NOTE: While the blade (G) is removed, inspect all of the components between the blades for wear and damage.

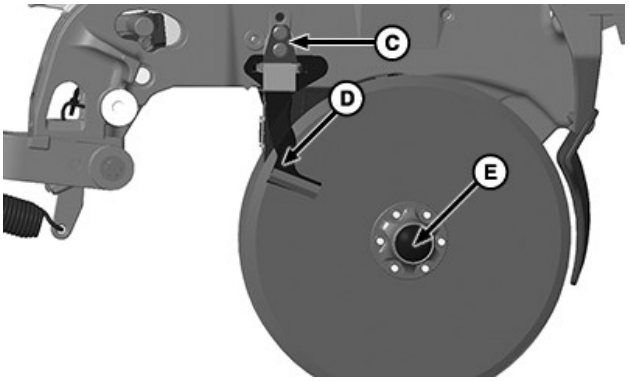
Do not discard the shims (H).

For Type B row unit shank, do not discard the bushing (I).

NOTE: The disks have three shims on each side. To make adjustments, it is recommended to remove one shim at a time, and alternating the sides.

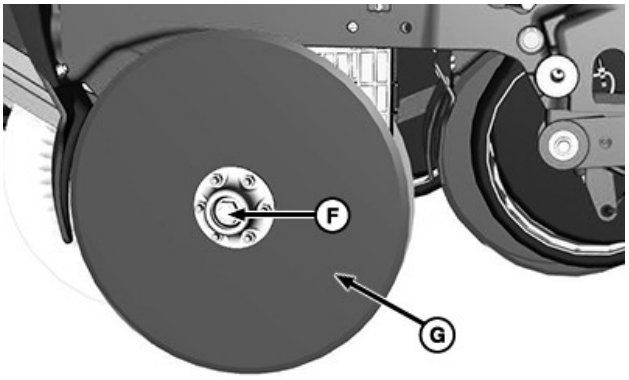


CQ1349103—UN—12SEP23



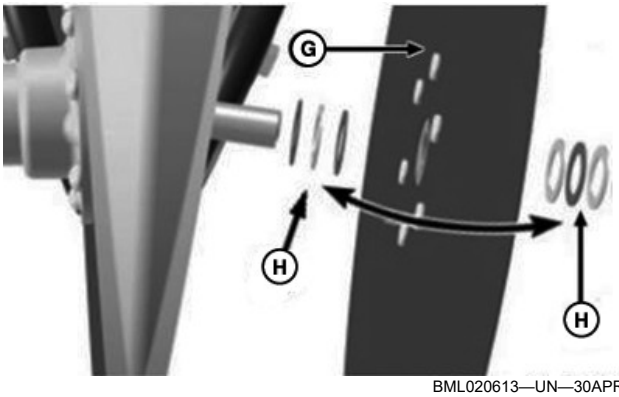
BML020614—UN—30APR21

2. Remove the screws (C) and the scraper (D).
3. Remove the cap (E).



BML020615—UN—30APR21

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



BML020613—UN—30APR21

5. Reposition one or more of the shims (H) from one side of the blade to the other to increase or decrease the contact area. Install the blade (G), inspect the adjustment, and repeat the shim placement as needed.
6. Tighten the blade nut to specification.

Specification

Type A Row Unit Shank—Blade Nut—Torque. . . . . 280 N·m (206 lb·ft)

Type B Row Unit Shank—Blade Nut—Torque. . . . . 250 N·m (184.4 lb·ft)

7. Adjust the depth gauge wheels. (See Adjust the Depth Gauge Wheels in Service—Planting Unit—Depth Gauge Wheels section.)
8. Tighten the pivot arm screws to specification.

Specification

Pivot Arm Screws—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.*

Replace the Double Disk Blade



BM028670—UN—31OCT18

IMPORTANT: Avoid premature wear. Do not use a new double disk blade with a used blade. Install new blades in pairs.

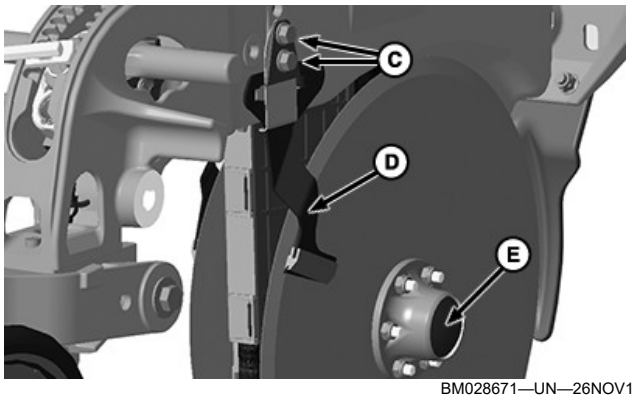
NOTE: Raise the planter completely until the end of lift cylinder travel and install the cylinder stops.

1. Remove screws (A), pivot arm (B), and the depth gauge wheel.

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 the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.*



BM028671—UN—26NOV18

2. Remove the screw (C) and disengage scraper assembly (D) from the row unit.

Specification

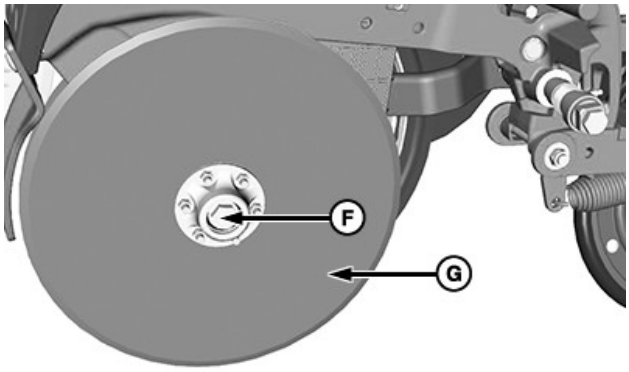
Screw M8—Torque. . . . . 30 N·m (22 lb·ft)

Specification

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

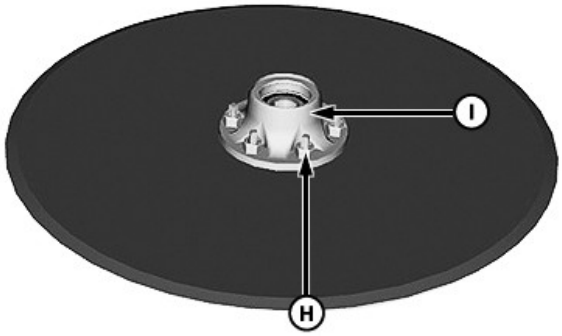
3. Remove the hub cap (E).

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



BM028672—UN—15OCT18

4. Remove the screw (F) and the blade (G).



BM028673—UN—31OCT18

5. After removing the double disk blade, put it in a safe place, remove the nuts and screws (H) and the flange (I).
6. To assemble the blades, follow procedure in reverse order, observing the following:
7. Tighten the flange nuts and screws (H) to specification:

Specification

Flange Nuts—Torque. . . . . 40 N·m (29 lb·ft)

h3ymaet,1691071563753-19-12SEP23

Inspect the Scrapers of the Double Disk Blade

Perform this service at the start of the season, at every 400 hours or as required.

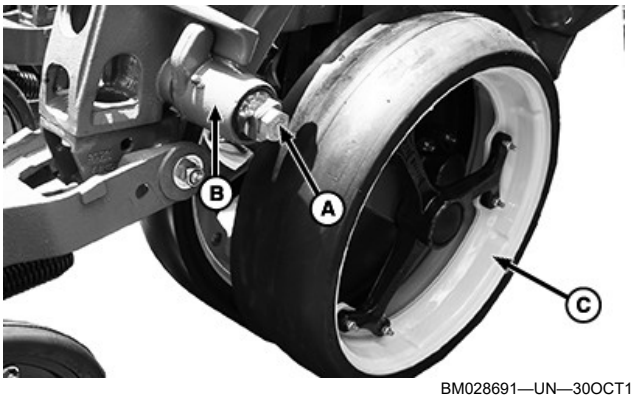
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

CAUTION: Always use the service locks on the lift cylinders when performing maintenance, adjustments, or checks with the planter raised.

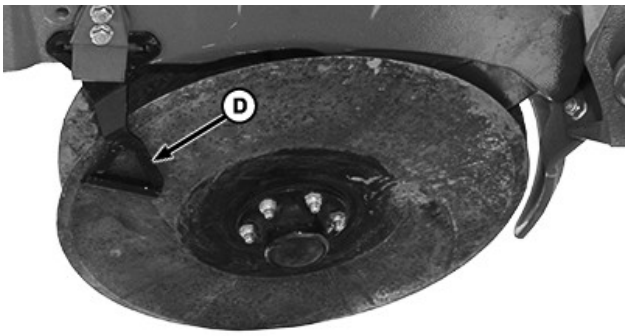
Inspect the Scrapers

1. Park the planter on level ground.



BM028691—UN—30OCT18

2. Loosen the screw (A).
3. Remove the pivot arm (B) and depth gauge wheel (C).



BM029857—UN—08NOV18

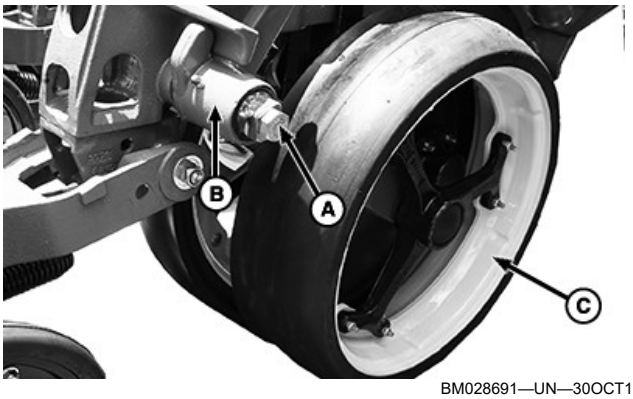
4. Check the external scrapers (D) for wear or damage, and replace, if necessary.
5. To assemble, follow the procedure in reverse order. Tighten the screw (A) as specified:

Specification

Screw—Torque	280 N·m (206 lb·ft)

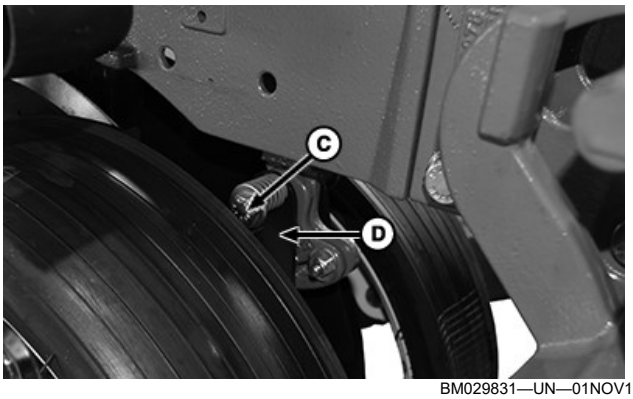
*NOTE: It is recommended to use the special tool that comes with the planter to obtain the proper tightening torque of the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.*

Replace the Scrapers—Only for MaxEmerge™ and MaxEmerge™ 5e



BM028691—UN—30OCT18

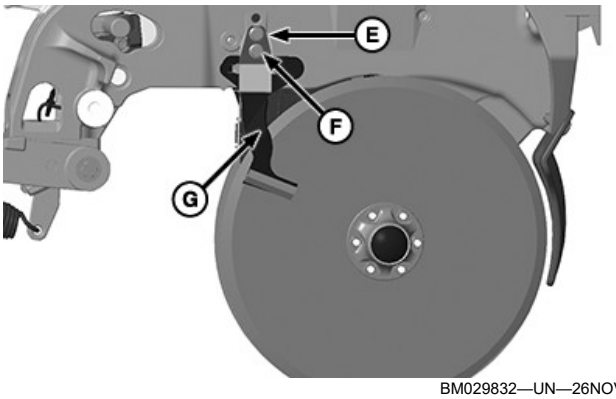
1. Remove the screw (A), the pivot arm (B), and the depth gauge wheel.



BM029831—UN—01NOV18

2. Remove the screw and spring (C), and replace the internal scrapers (D).

NOTE: The internal scraper (D) must be replaced when it does not ensure contact with the disk or is worn. It is also recommended to replace the scraper pressure spring (C).



BM029832—UN—26NOV18

3. Remove the screws (E) and (F), and replace the external scrapers (G).

NOTE: Replace the external scraper (G) when it is not contacting the disk, or when it is worn.

4. To assemble, follow the procedure in reverse order. Tighten the screws as specified:

Specification

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

Specification

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

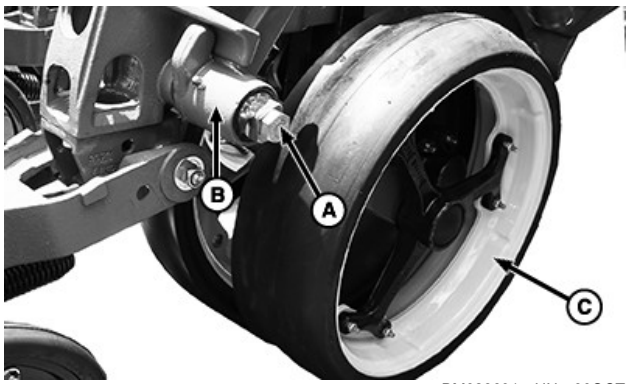
Specification

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.*

Replace the Scrapers—Only for ExactEmerge™

1. Park the planter on level ground.



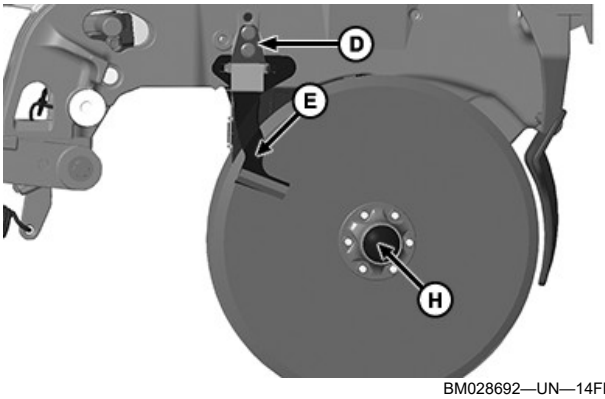
BM028691—UN—30OCT18

2. Loosen the screw (A), remove the pivot arm (B), and the depth gauge wheel (C).

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 the screw (A). See more information at **Special Tool for Tightening Planter Screws** in the section Accessories and General Equipment.*



BM028692—UN—14FEB19

3. Remove the screws (D), disengage the scraper (E) from the row unit and remove the hub cap (H).

Specification

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

Specification

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

4. Replace the scrapers as necessary.
5. To assemble, follow the procedure in reverse order.

NN32476,00003F9-19-19MAY21

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.

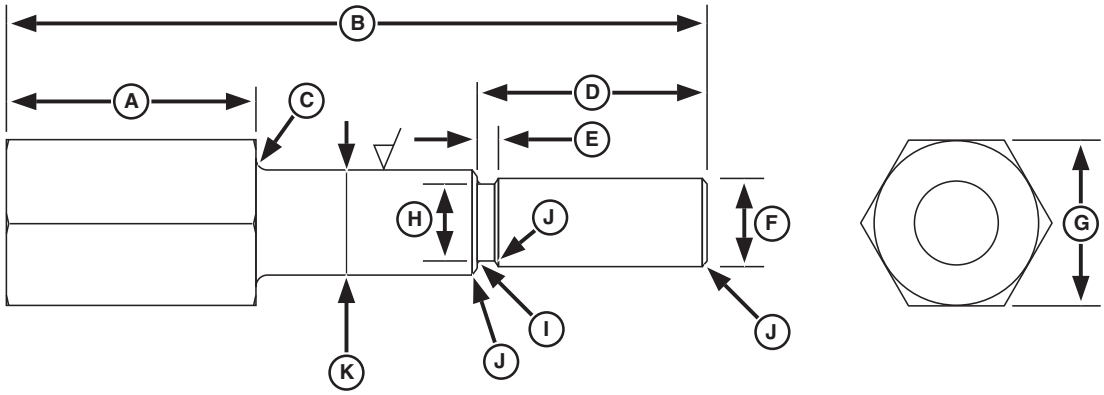
CAUTION: Avoid serious injury or death. Properly support the machine.

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.

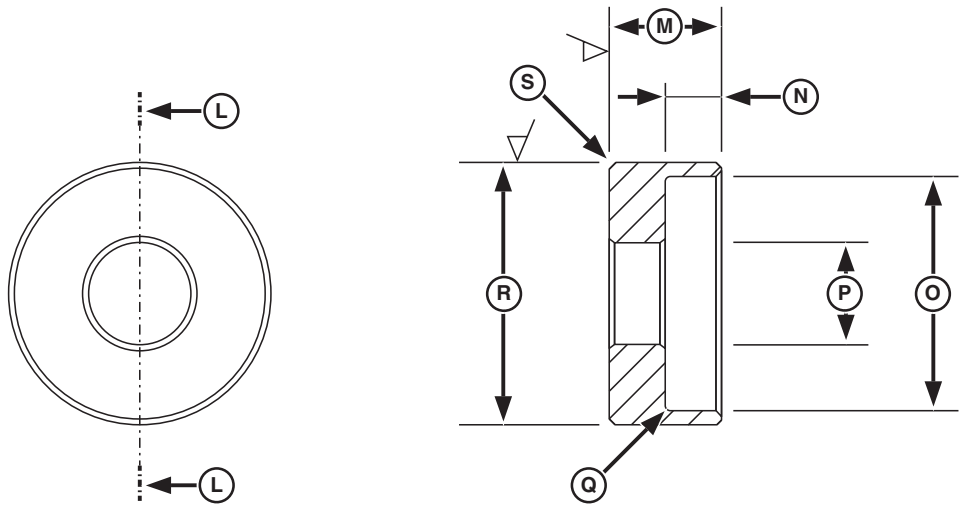
Manufacturing of Special Tool

To carry out the correct assembly of the bearing, manufacture the special tool. Use SAE 1045 steel or similar and follow the dimensions indicated.



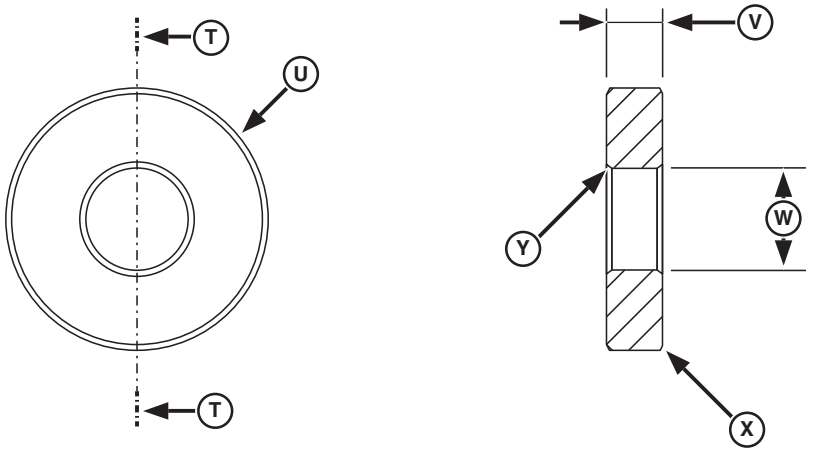
BML013460—UN—21MAR22

A—60.00 mm (2.3622 in) ± 0.5 mm (0.0197 in)
B—168.00 mm (6.6142 in) ± 0.5 mm (0.0197 in)
C—Radius 2.00 mm (0.0787 in) ± 1.00 mm (0.0394 in)
D—55.00 mm (2.1653 in) ± 0.5 mm (0.0197 in)
E—5.00 mm (0.1969 in) ± 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) ± 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) ± 0.02 mm (0.0008 in)



BML013461—UN—22MAR22

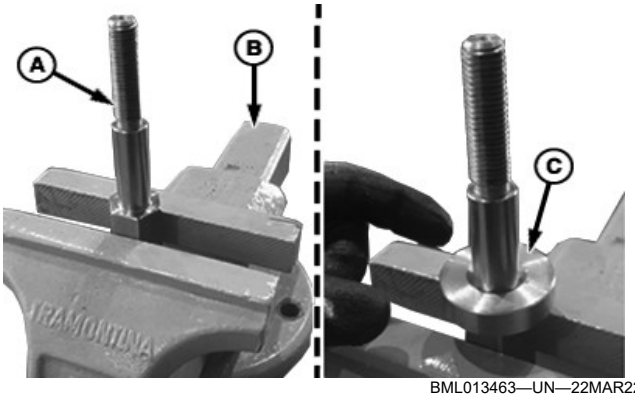
L—Section
M—20.00 mm (0.7874 in) ± 0.5 mm (0.0197 in)
N—10.00 mm (0.7937 in) ± 0.5 mm (0.0197 in)
O—Diameter 42.00 mm (1.6535 in) ± 0.1 mm (0.0039 in)
P—Diameter 18.00 mm (0.7087 in) ± 0.2 mm (0.0079 in)
Q—Radius 1.00 mm (0.0394 in)
R—Diameter 46.80 mm (1.8425 in) ± 0.1 mm (0.0039 in)
S—5x Chamfer 1.00 mm (0.0394 in) x 45°



BML013462—UN—22MAR22

T—Section
U—Diameter 48.75 mm (1.9193 in) ± 0.5 mm (0.0197 in)
V—12.50 mm (0.4921 in) ± 0.5 mm (0.0197 in)
W—Diameter 20.00 mm (0.7874 in) ± 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

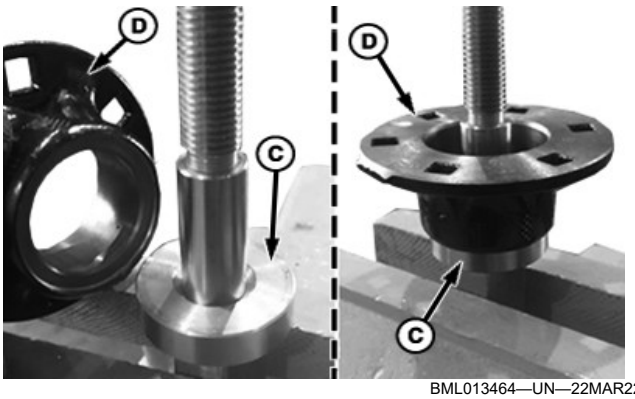


BML013463—UN—22MAR22

1. Install pin (A) in vise (B).

NOTE: Use a vise (B) or similar tool to create the support point.

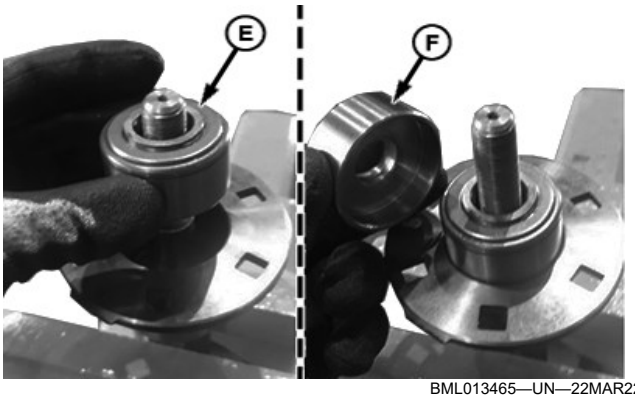
2. Install the washer (C).



BML013464—UN—22MAR22

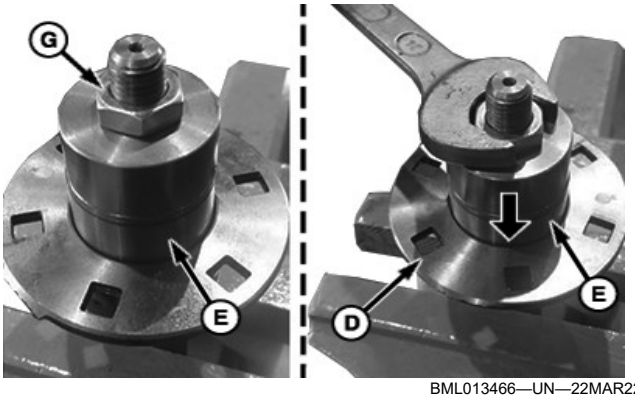
3. Install the hub (D) on washer (C).

NOTE: Ensure the hub (D) is correctly seated in the washer (C).



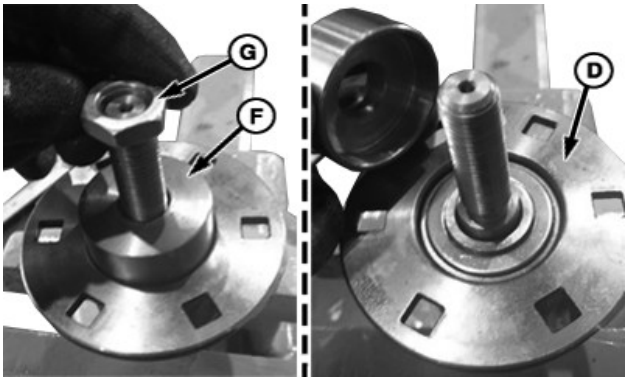
BML013465—UN—22MAR22

4. Install the bearing (E) with the shield facing up.
5. Install the cover (F).



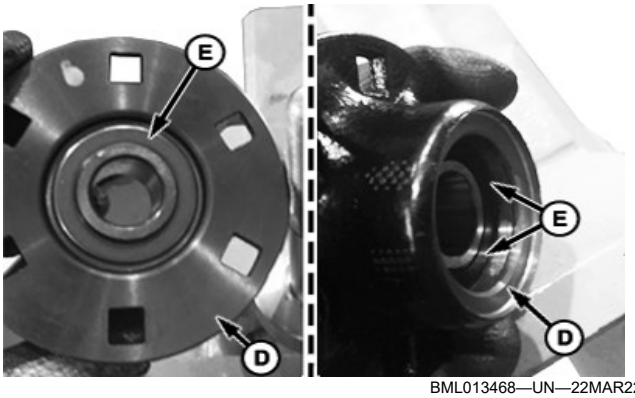
BML013466—UN—22MAR22

6. Install the nut (G).
7. Tighten nut (G) until bearing (E) moves into hub (D).



BML013467—UN—22MAR22

8. Remove the nut (G) and cover (F).
9. Remove the hub (D) with the bearing.



BML013468—UN—22MAR22

10. Ensure the bearing (E) is correctly aligned in the hub (D).

N8XR12J,00006CE-19-05APR22

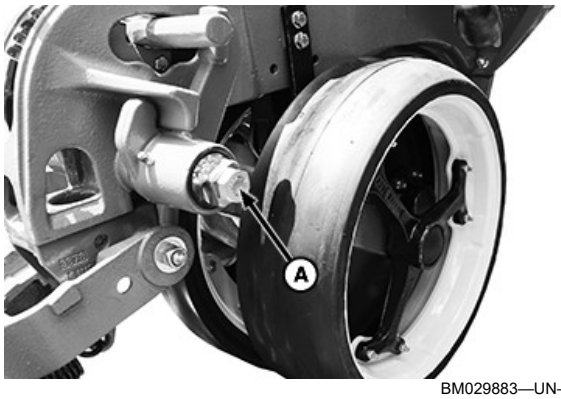
Check Torque of the Depth Gauge Wheel Pivot Arm

Perform this service at the 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.

NN32476,00003FA-19-19MAY21

Check Depth Gauge Wheel Bearings

Perform this service at every 400 hours of operation.

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.

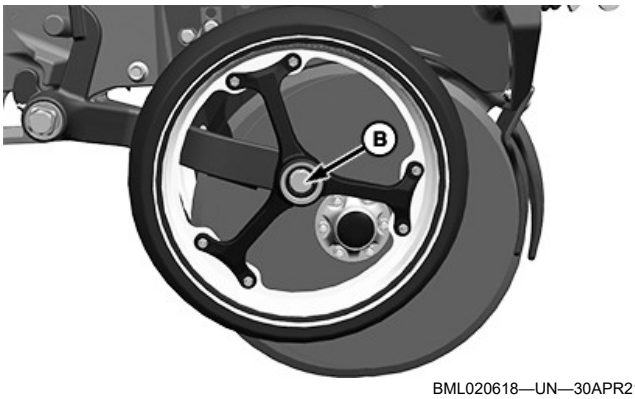
Replace the Depth Gauge Wheel Bearings

1. Park the machine on level ground.
2. Raise the planter.



BML020617—UN—30APR21

3. Remove the cap (A).



BML020618—UN—30APR21

4. Remove the screw (B).



BML020619—UN—30APR21

5. 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.

6. Replace the bearing (D) if necessary.
7. To assemble, follow the procedure in reverse order.
   - Tighten the screw (B) to specification:

Specification	
Screw—Torque	250 N·m (184 lb·ft)

8. Repeat the procedure on both sides of each row, as necessary.

K2F379Y,000064C-19-05APR22

Lubricate the Depth Gauge Wheel Arms

Perform this service at every 100 hours of operation.

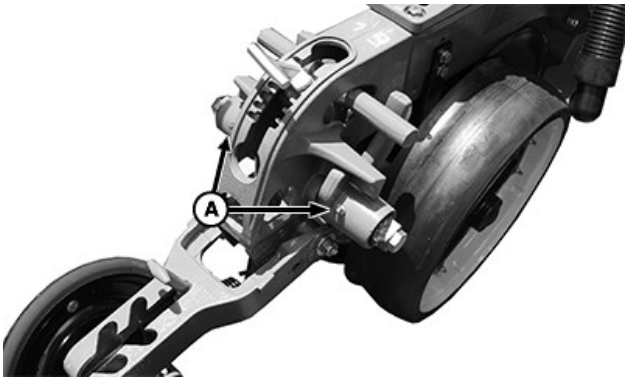
In severe moisture conditions or locking arm movement reduce the lubrication interval to 50 hours or less.

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 of the depth gauge wheel arms.

NOTE: If necessary, replace damaged grease fittings.



BM028669—UN—06NOV18

3. Lubricate the grease fitting (A) of the depth gauge wheel arms on both sides of the row unit.
4. 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.

ph5u3bx,1715188247965-19-08MAY24

Adjust the Depth Gauge Wheels

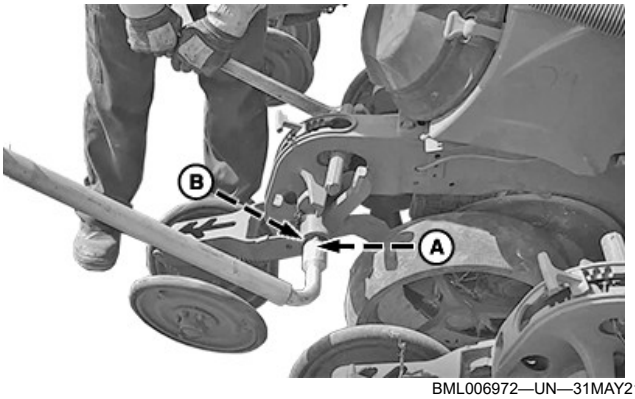
Perform this service as required.

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.

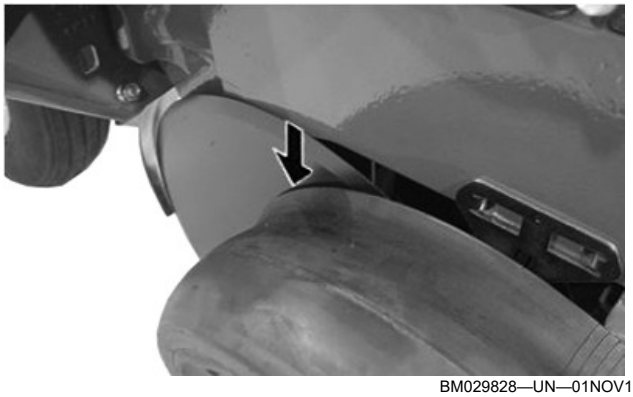
IMPORTANT: Avoid excessive wheel wear. Do not overtighten the depth gauge wheels.

4. Tighten the screw (A) to specification.

Specification	
Depth Gauge Wheel Screw—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.

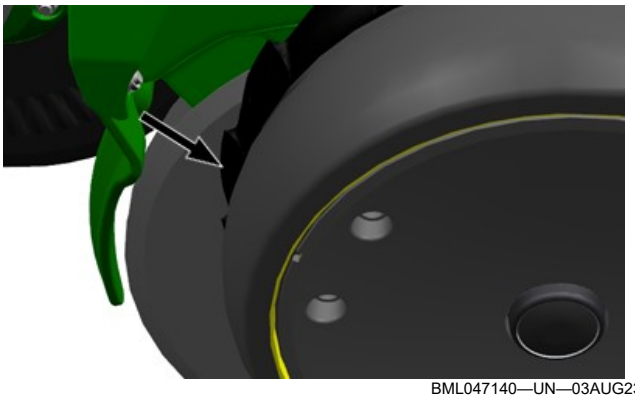


BM029828—UN—01NOV18

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,1691083907664-19-15AUG23

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.

N8XR12J,00006CF-19-30MAR22

Check Scraper Rings (If Equipped)

Perform this service at the start and at the end of the season.

1. Place the planter on level ground.



BML047154—UN—14AUG23

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.)

h3ymaet,1690993394912-19-11AUG23

Remove and Install Scraper Ring (If Equipped)

Perform this service as required.

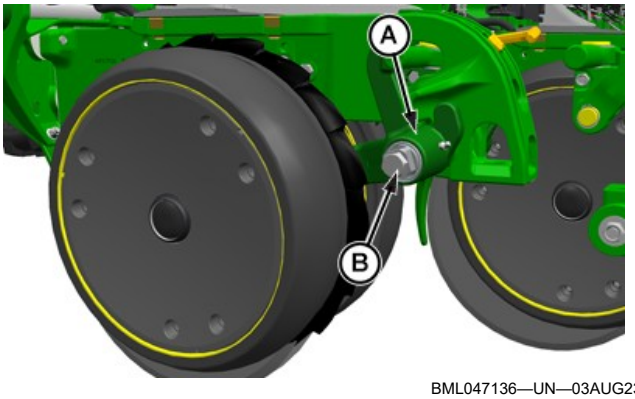
CAUTION: Avoid injury. The scraper rings have sharp edges. Wear protective gloves and handle them carefully.

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.

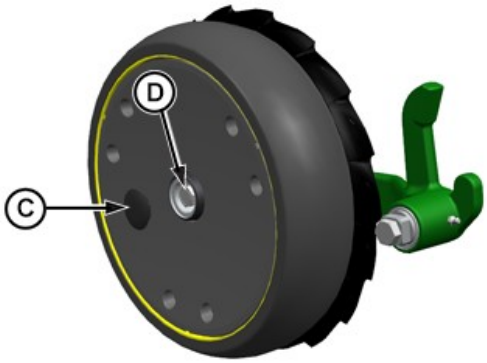
NOTE: The scraper rings are an optional that are only necessary for planters working on muddy conditions to avoid mud build up between the double disks and the depth gauge wheels.

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.

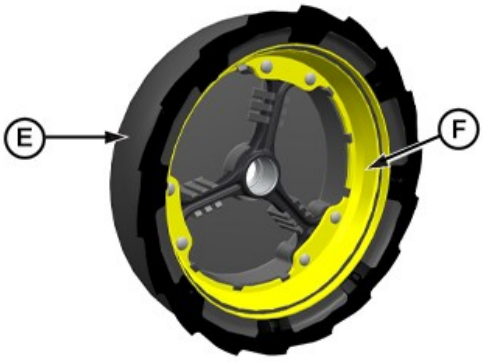


BML047136—UN—03AUG23



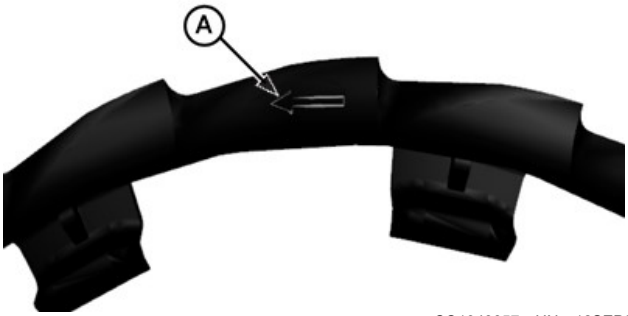
BML047138—UN—03AUG23

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

Check Closing Wheel Bearings

Perform this service at every 400 hours.

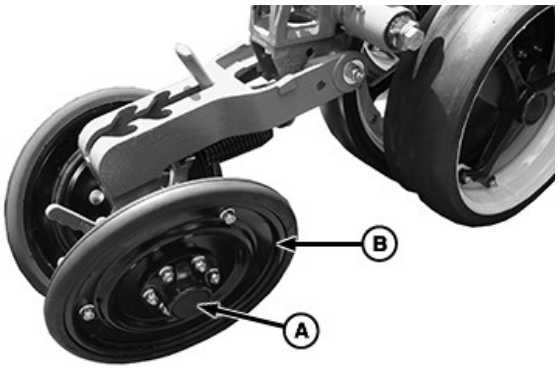
Make sure to comply with all the safety conditions before servicing.

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 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.

K2F379Y,000064D-19-30MAR22

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

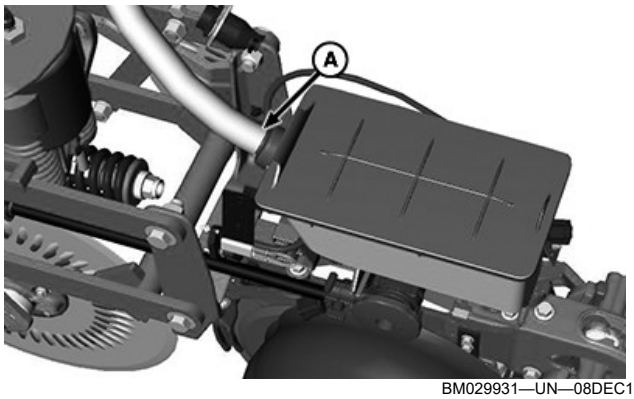
Clean Seed Manifold

Perform this service at the start of the season or as required.

Make sure to comply with all the safety conditions before servicing.

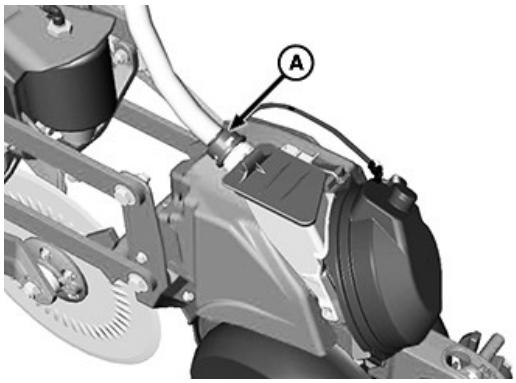
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



BM029931—UN—08DEC18

Vacuum Manifold for MaxEmerge™ 5 and MaxEmerge™ 5e Planters



BM029930—UN—08DEC18

Vacuum Manifold for ExactEmerge™ Planters

2. Disconnect the hose (A).
3. Check the system for dirt.
4. Clean the system, if necessary.

NOTE: If necessary, replace the hoses (A) and clamps.

NOTE: Repeat the procedure for all row units.

NN32476,00003DA-19-19MAY21

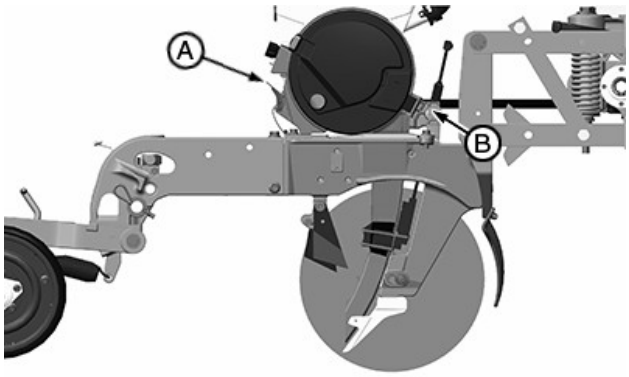
Clean Seed Tube—Only for MaxEmerge™ 5 and MaxEmerge™ 5e

Perform this service periodically. Always at the start of the season or as required.

Make sure to comply with all the safety conditions before servicing.

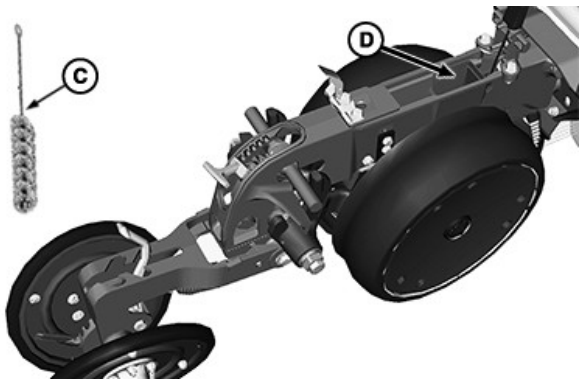
IMPORTANT: It is possible for dusty conditions or heavily treated seeds to cause an excessive buildup of dust and seed treatment inside the seed tubes that blocks the seed sensor light. When the sensor light becomes blocked, false low population counts or false low limit warnings appear.

For MaxEmerge™ planters, periodically clean the seed tube to ensure uniform seed population. Proceed as follows to perform the cleaning:



CQ298029—UN—07MAR14

1. Unlock the latch (A).
2. Raise the seed meter without loosening hitch (B).



BM028524—UN—01NOV18

3. Clean the seed tube (D) with a brush (C).

NOTE: Locate a brush (C) in the machine accessories.

NOTE: Clean the brush (C) during the process to ensure that it is cleaning correctly.

4. Lower the seed meter and lock the latch (A).

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

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with a dry brush, use mild detergent and water with brush. Allow interior of the seed tube surfaces to dry.

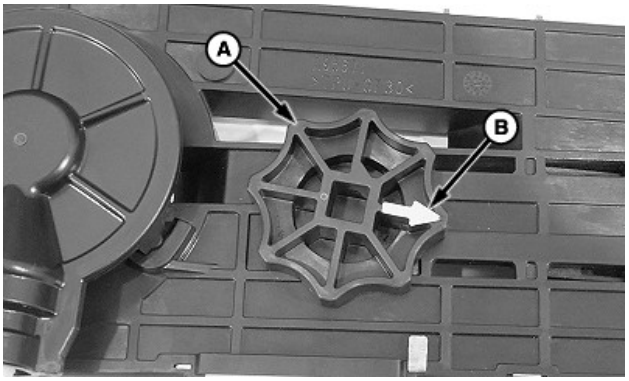
IMPORTANT: Do not plant again until interior surfaces of all the seed tubes are dry.

NN32476,00003DB-19-19MAY21

Clean BrushBelt™ Cartridge—Only for ExactEmerge™

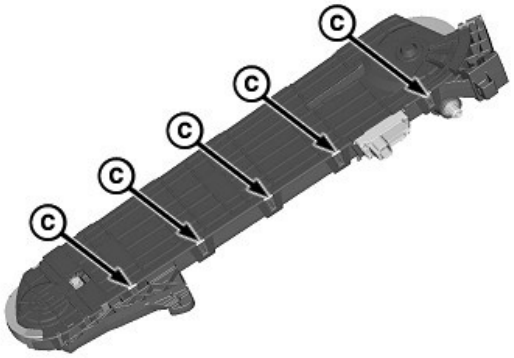
Perform this service at every 100 hours of operation.

Make sure to comply with all the safety conditions before servicing.



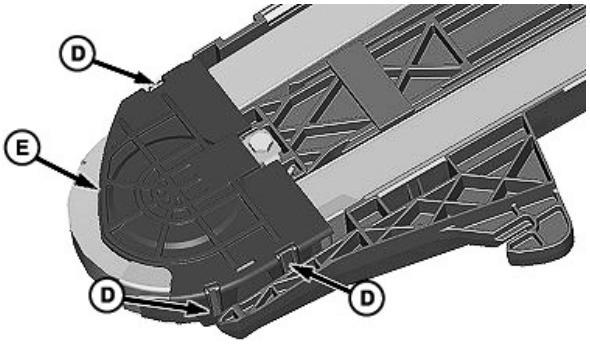
A79515—UN—03JAN14

1. Remove the BrushBelt™ cartridge. (See Remove and Install the BrushBelt™ Cartridge in Operating the Seed Meter—ExactEmerge ™ section.)
2. Turn the knob (A) 180° counterclockwise so that arrow (B) points towards the top of the BrushBelt™ cartridge.



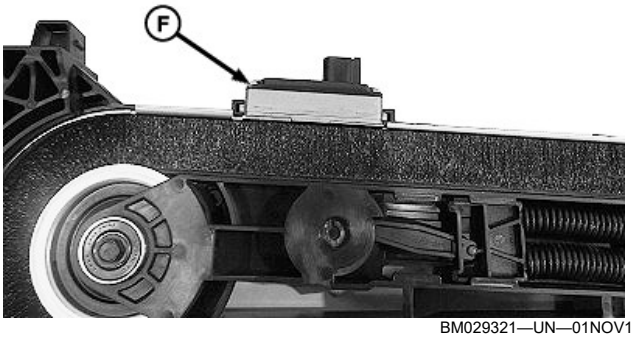
BM029319—UN—26APR18

3. Lift the tabs (C) and remove cover.



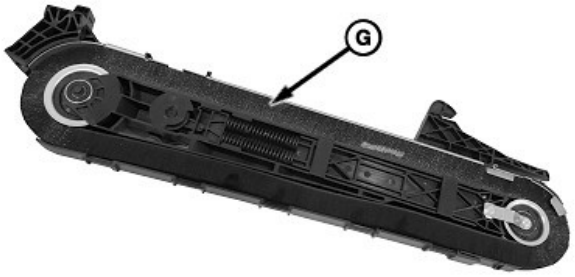
BM029320—UN—30OCT18

4. Lift the tabs (D) and remove cover (E).



BM029321—UN—01NOV18

5. Remove the seed sensor (F).



BM029322—UN—26APR18

6. Remove the BrushBelt™ (G).

NOTE: Clean the BrushBelt™. It is recommended to reverse the position of the BrushBelt™.

NN32476,00003DC-19-28APR21

Clean Seed Meter Drive

Perform this service as required.

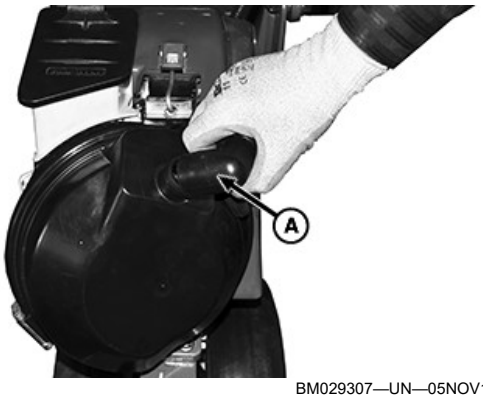
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

BrushBelt is a trademark of Deere & Company

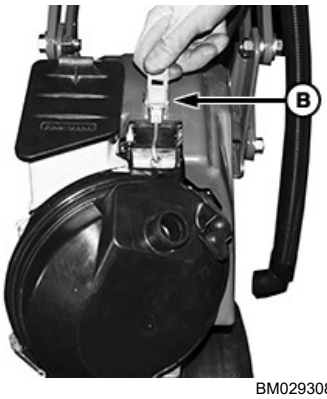
Clean Seed Meter Drive—ExactEmerge™

1. Park the planter on level ground.

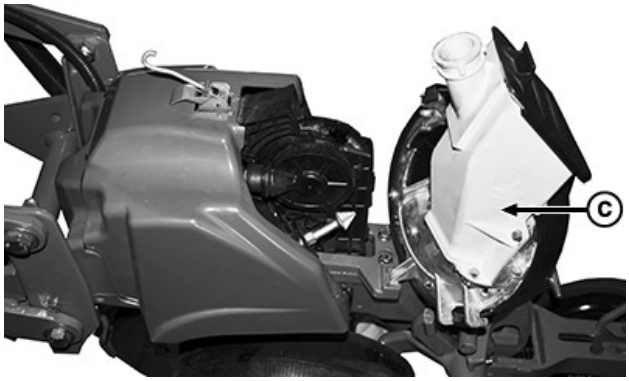


BM029307—UN—05NOV18

2. Remove the hoses (A).

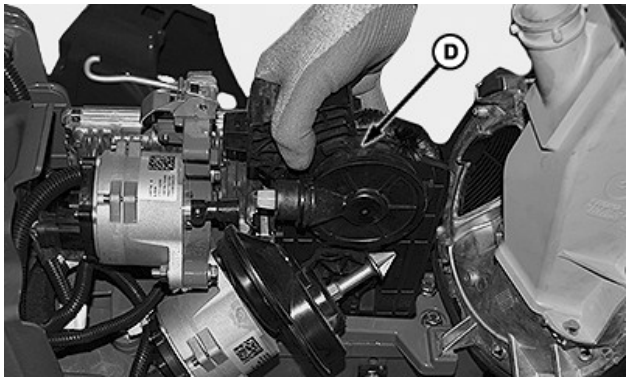


BM029308—UN—05NOV18



BM029309—UN—05NOV18

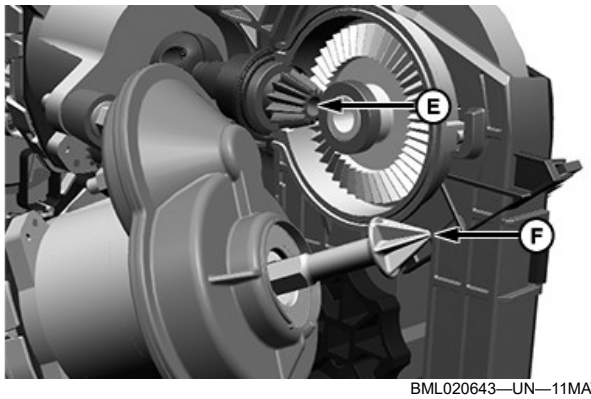
3. Open the latch (B) and pull the meter (C) back.



BM029310—UN—25APR18

4. Remove the BrushBelt™ (D) and clean it.

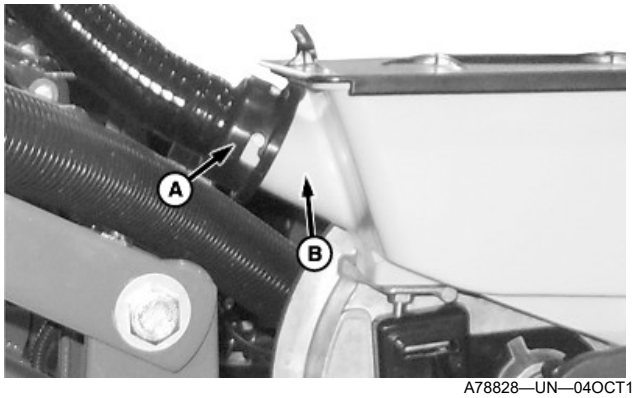
NOTE: Use compressed air to clean the BrushBelt™.



BML020643—UN—11MAY21

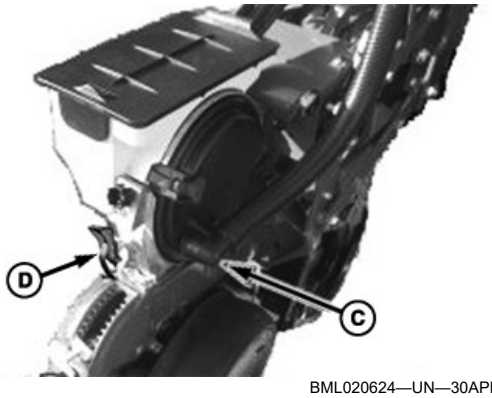
5. Use compressed air to clean the axle drives (E and F), and other parts of the assembly.

Clean Seed Meter Drive—MaxEmerge™ 5e



A78828—UN—04OCT13

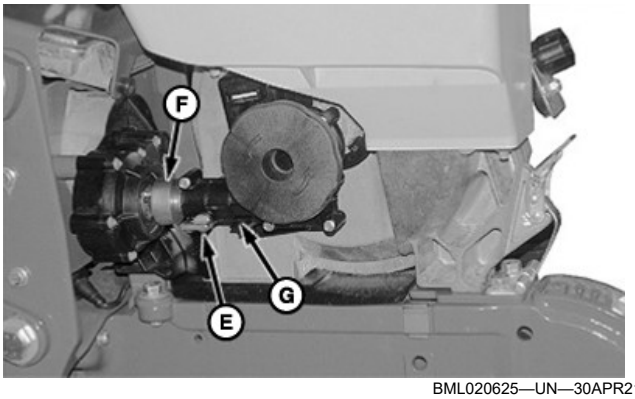
1. Rotate the CCS™ seed delivery hose (A) counterclockwise until it unsnaps from the hopper fill neck (B) and pull off the hose.



BML020624—UN—30APR21

2. Remove the vacuum hose (C).
3. Unlock the meter assembly by pushing down on the latch (D).

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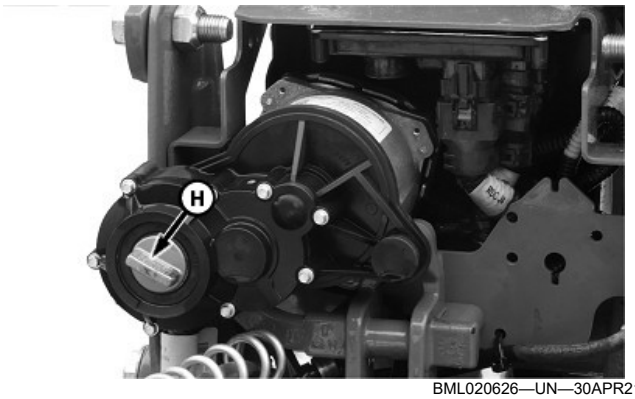


BML020625—UN—30APR21

4. Rotate the lock pin (E) 180° until the unlocked symbol is on top.

NOTE: When reinstalling the seed meter drive, the locked symbol must stay on the top.

5. Pull the drive coupler (F) from the gear box housing (G).



BML020626—UN—30APR21

6. Check for wear on the seed meter drive (H).
7. Clean any dirt and debris off the seed meter drive and the drive coupler as needed.
8. Reinstall the seed meter drive following the reverse order.

NN32476,00003E1-19-19MAY21

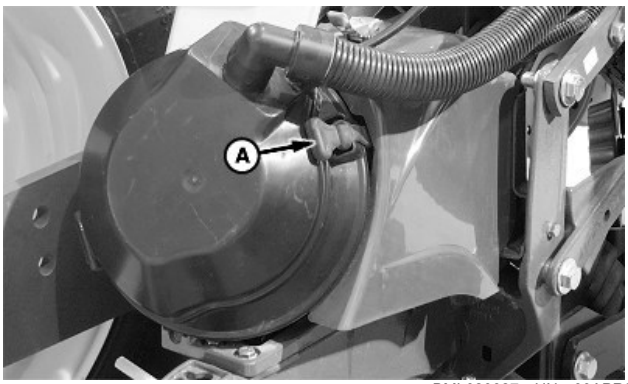
Clean Seed Meter

Perform this at every 400 hours of operation.

Make sure to comply with all the safety conditions before servicing.

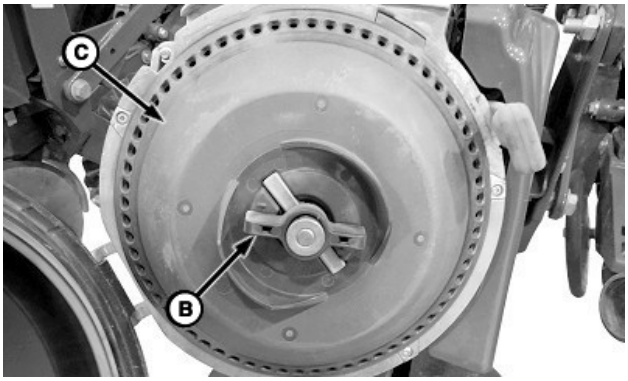
To clean the seed meter of the ExactEmerge™ and the MaxEmerge™ planters, follow this procedure:

Clean the Seed Meter—ExactEmerge™



BML020627—UN—30APR21

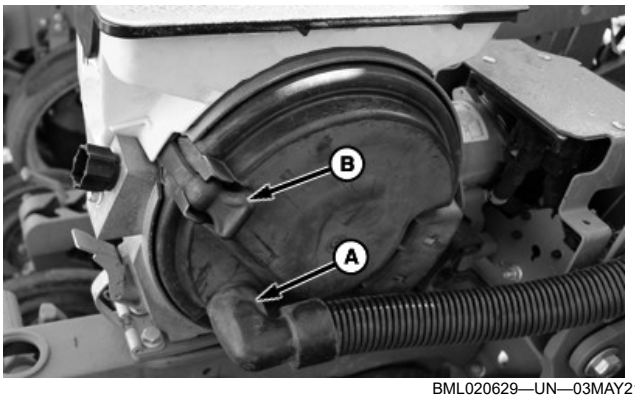
1. Unlock the meter handle (A) and open the seed meter dome.



BML020628—UN—30APR21

2. Turn the hub handle (B) to unlock.
3. Remove the seed meter (C).
4. Use compressed air to clean the seed meter.
5. To assemble, follow the procedure in reverse order.

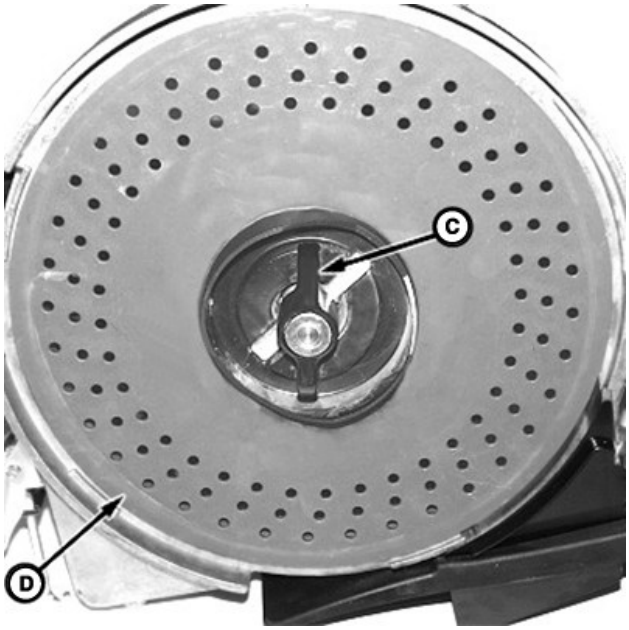
Clean the Seed Meter—MaxEmerge™ 5 and MaxEmerge™ 5e



BML020629—UN—03MAY21

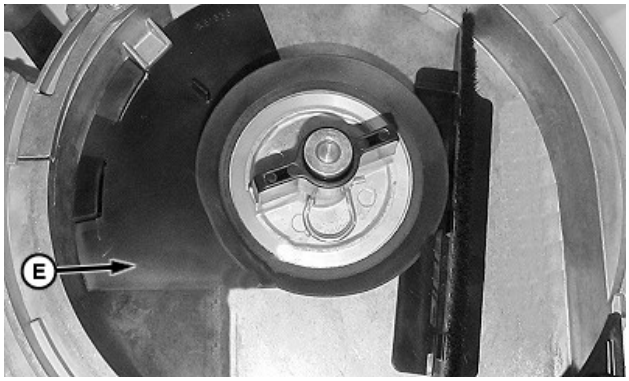
1. Remove the vacuum hose (A) from the metering unit.
2. Disengage the handle (B) and open the vacuum chamber.

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MaxEmerge is a trademark of Deere & Company



BML020630—UN—03MAY21

3. Turn the hub handle (C) counterclockwise and remove the seed disk (D) from the housing.



BML020631—UN—03MAY21

4. Clean inside the seed meter (E) with compressed air.
5. Perform the cleaning in all the lines.
6. To assemble, follow the procedure in reverse order.

NN32476,00003DF-19-19MAY21

Clean Row Unit Hopper Screen—Only for MaxEmerge™ 5 and MaxEmerge™ 5e

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

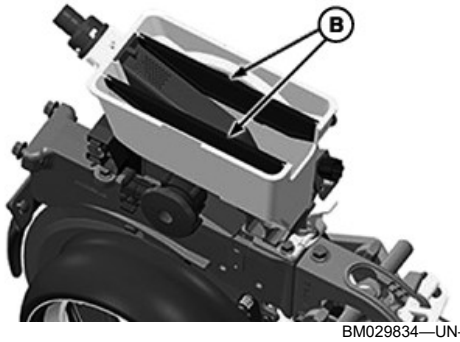
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



BM029833—UN—01NOV18

2. Remove the cover (A).



BM029834—UN—05NOV18

3. Remove the 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.

NN32476,00003E0-19-29APR21

Inspect and Service the Seed Meter—Only for MaxEmerge™ 5 and MaxEmerge™ 5e

Perform this service at every 400 hours of operation.

Make sure to comply with all the safety conditions before servicing.

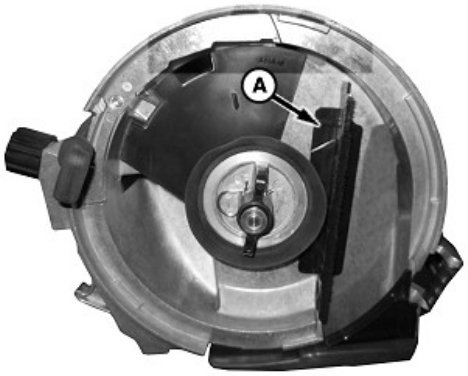
CAUTION: Avoid eye, skin, or breathing problems from exposure to seed treatments. If seed treatments are used, use caution when opening meter domes. Read and follow safety instructions on the chemical manufacturer's label.

IMPORTANT: Inspect the MaxEmerge™ 5 and the MaxEmerge™ 5e seed meter for wear and seed treatment buildup at least every year, if the service interval is not reached.

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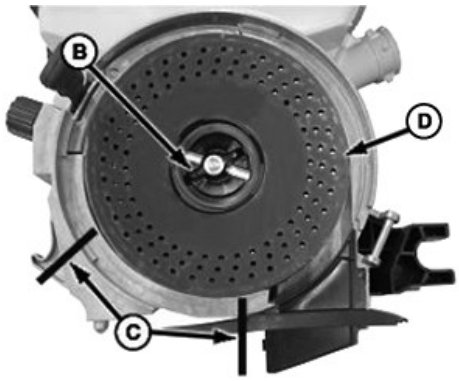
1. Perform the cleaning on the seed meter (see Clean Seed Meter in this section).

NOTE: It is not necessary to remove the seed meter.



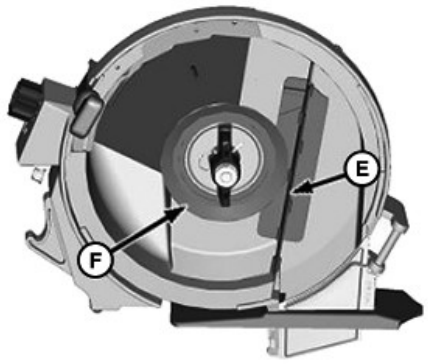
A78513—UN—02AUG13

2. Clean behind the plastic cover (A) with a mild detergent and a soft brush.



BM030090—UN—14FEB19

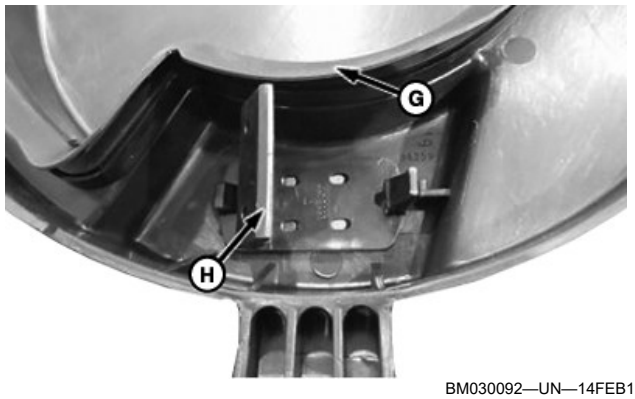
3. Install the seed disk (D).
4. Spin the hub (B) rapidly by hand and quickly release the hub. If the disk rotates approximately 1/4 to 1/2 revolution after it is released, the hub is properly adjusted. (If needed, see Adjust MaxEmerge™ 5 and MaxEmerge™ 5e Meter Hub in Operating the Seed Meter—MaxEmerge™ 5 and 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 the inspection area (C). If seed loss occurs, replace the disk.
7. Remove the seed disk (D).



BM030091—UN—14FEB19

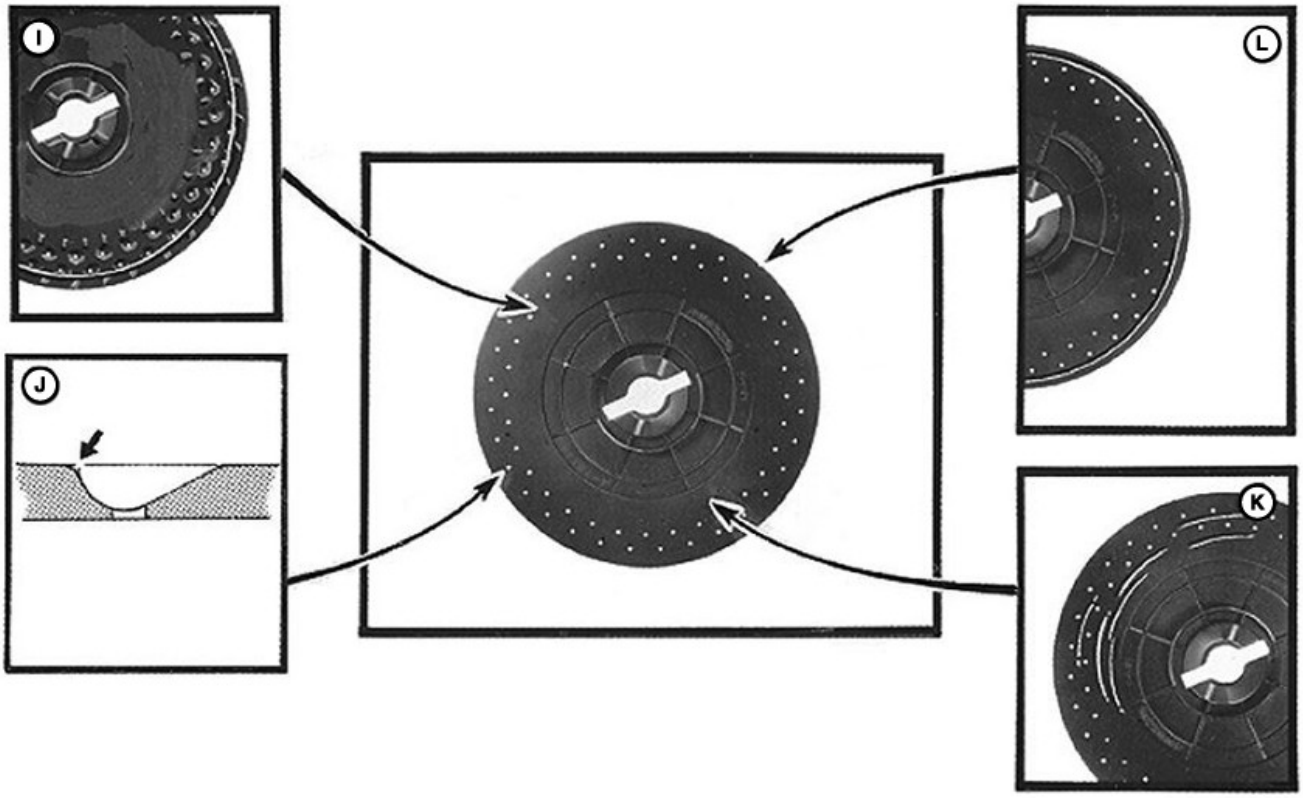
8. Check the brush (E) bristles for separations and gaps. If the brush is worn enough to allow seed to pass through, replace the brush.
9. Replace the hub seal (F) if it is cracked or weathered.

NOTE: If the vacuum seals are replaced, apply Graphite Spray TY25797 on the vacuum side of the used seed disks. The new seed disks are factory lubricated.



BM030092—UN—14FEB19

10. Replace the vacuum seals (G) if the seed disks are replaced or when large cracks or wear areas are visible in the seal.
11. Replace the disk wiper (H) if the edge of the wiper is grooved or excessively worn.

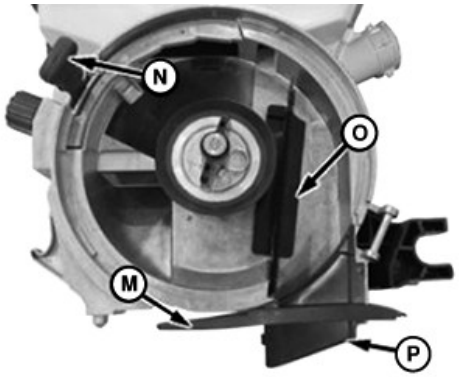


BM030093—UN—14FEB19

I—Perimeter on the Seed Side
J—Edge
K—Grooves
L—Perimeter on Vacuum Side

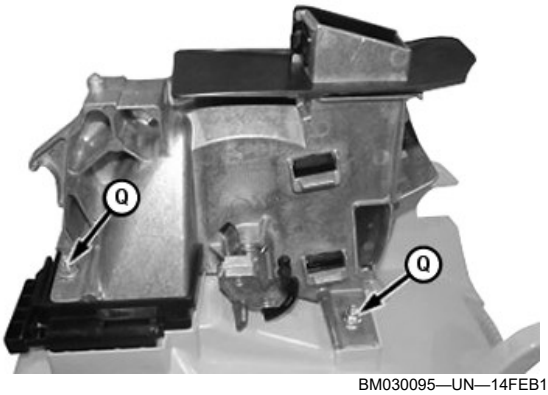
NOTE: To verify meter performance before purchasing new disks, perform a field check.

12. Inspect the seed disks for wear in the following areas and replace the disks as needed.
    - Perimeter on the seed side (I): A small amount of wear is acceptable. Check for seed loss through the gap between the disk and the housing.
    - The 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).
    - The grooves (K) on the vacuum side: Small grooves or scratches are acceptable. Large grooves affect the performance.
    - Perimeter on the vacuum side (L): A wear depth less than 1.0 mm (3/64 in) is acceptable.



BM030094—UN—14FEB19

13. Replace the seed meter dust cover (M), if it does not fit properly, is cracked, or is weathered.
14. Replace the rubber handle (N), if it is cracked or broken.
15. Replace the brush holders (O), if worn.
16. Replace the 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 the nuts (Q).

NN32476,00003E2-19-19MAY21

Inspect and Service the Seed Meter—Only for ExactEmerge™

Perform this service at every 400 hours of operation.

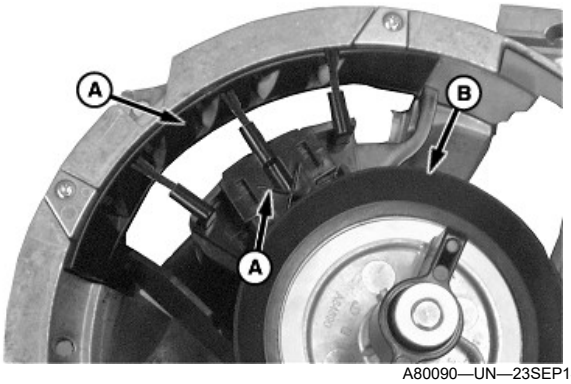
Make sure to comply with all the safety conditions before servicing.

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).



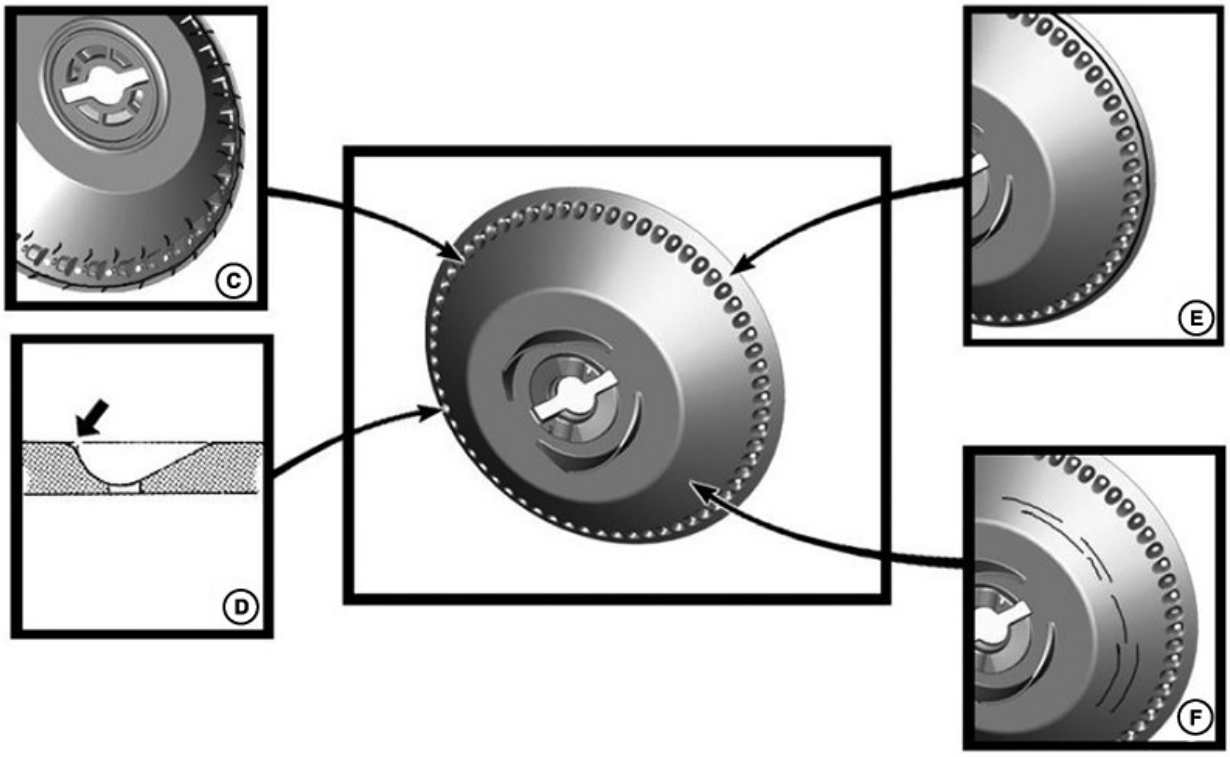
A80090—UN—23SEP14

2. Check the 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 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 the meter performance is degraded, replace it.
6. Replace the hub seal (B) if it is cracked or weathered.

NOTE: Before replacing the seed disk, properly set the meters and the vacuum.

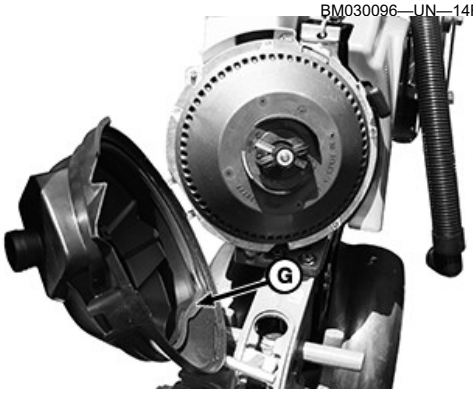
If the metering performance is satisfactory, it is not necessary to replace the seed disk.

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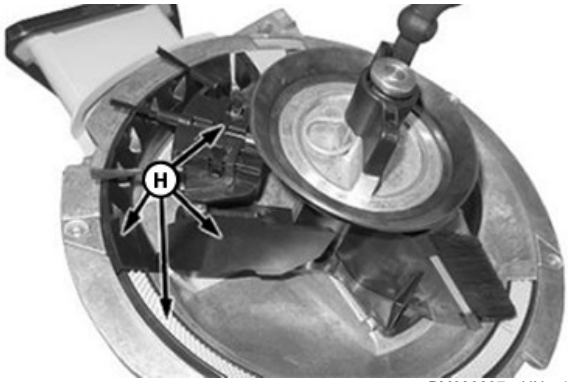
BM030096—UN—14FEB19

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 the 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 the 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 TY25797 on the vacuum side of the used seed disks. See the Lubrication section. New seed disks are lubricated from the factory.



BM029859—UN—14FEB19

8. Replace the vacuum seal (G) if the seed disk is replaced or when large cracks or wear areas are visible.

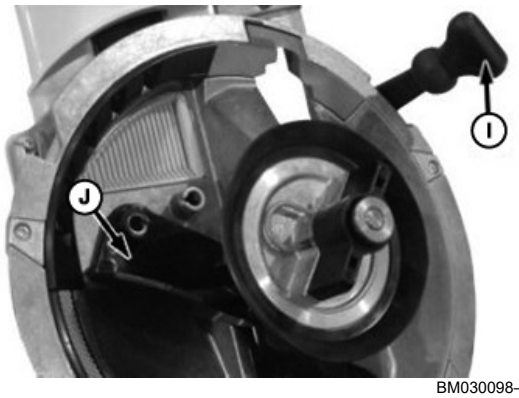


BM030097—UN—14FEB19

9. Annual cleaning of the seed meters and the seed disk is recommended. To remove any seed

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treatment buildup, use a mild detergent and a soft brush behind the components (H) in the seed meter housing.



BM030098—UN—14FEB19

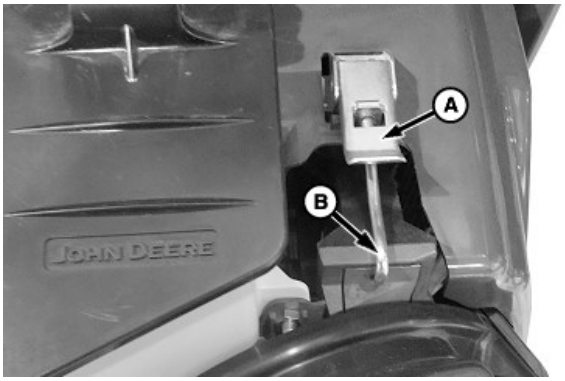
10. Replace the rubber handle (I) if it is cracked or broken.
11. Replace the baffle (J) if it is damaged or worn.

NN32476,00003E3-19-12MAY21

Adjust the Meter Latch—Only for ExactEmerge™

Perform this service at the start of the season and at every 400 hours of operation.

Make sure to comply with all the safety conditions before servicing.



A78698—UN—27AUG13

The meter latch (A) must close firmly into the locked position when the 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.

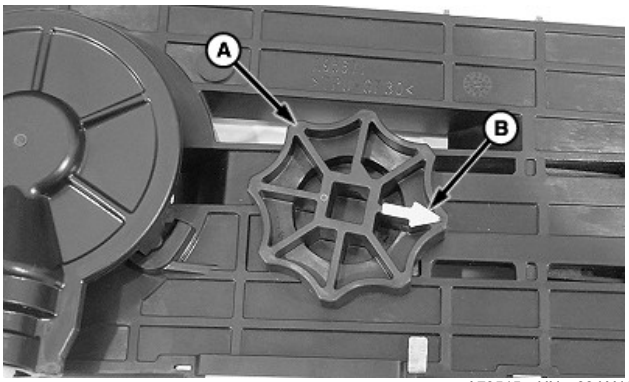
NN32476,00003E4-19-29APR21

Check Cartridge Guard—Only for ExactEmerge™

Perform this service at the start of the season.

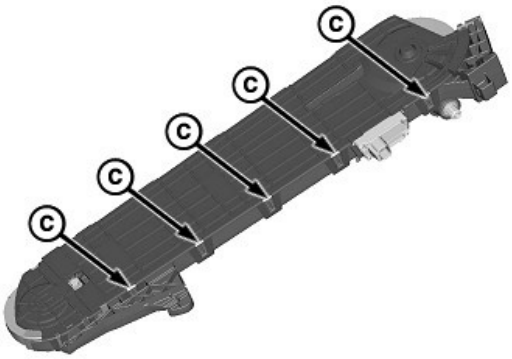
Make sure to comply with all the safety conditions before servicing.

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 the knob (A) 180° counterclockwise so that arrow (B) points towards the top of the BrushBelt™ cartridge.

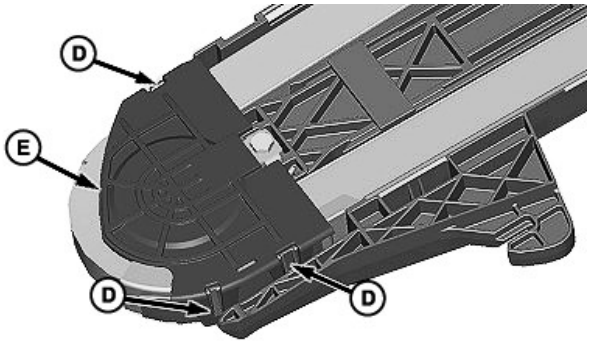


BM029319—UN—26APR18

3. Lift the tabs (C) and remove cover.

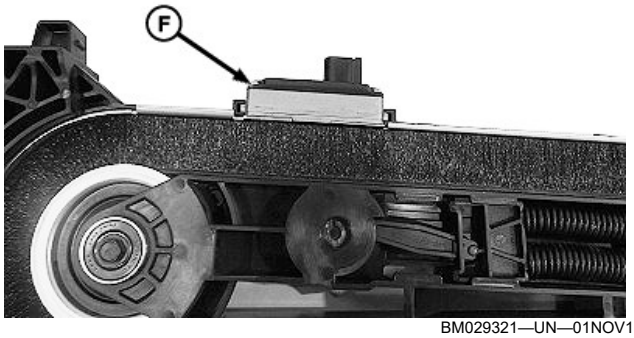
BrushBelt is a trademark of Deere & Company

ExactEmerge is a trademark of Deere & Company



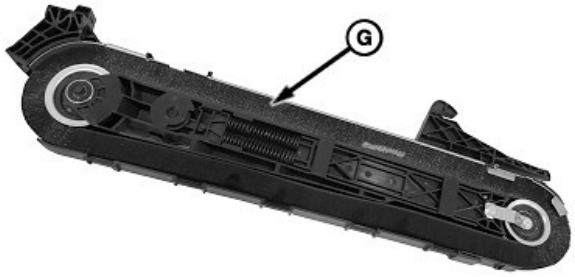
BM029320—UN—30OCT18

4. Lift the tabs (D) and remove cover (E).



BM029321—UN—01NOV18

5. Clean the seed sensor (F).



BM029322—UN—26APR18

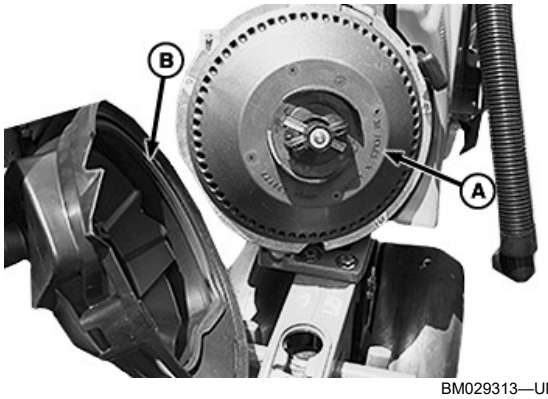
6. Clean the BrushBelt™ (G) and the seed sensor (F).
7. To assemble, follow the procedure in reverse order.

NN32476,00003E5-19-29APR21

Lubricate Vacuum Seal and Seed Disk

Perform this service at every 50 hours of operation.

Make sure to comply with all the safety conditions before servicing.



BM029313—UN—06NOV18

1. Unlatch the meter handle and open the seed meter dome.
2. Apply graphite lubricant TY25797 to the vacuum seal (B) and seed disk (A).

NOTE: Under severe wear conditions reduce the lubricaton interval.

NOTE: If vacuum seals are replaced, apply graphite spray TY25797 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.

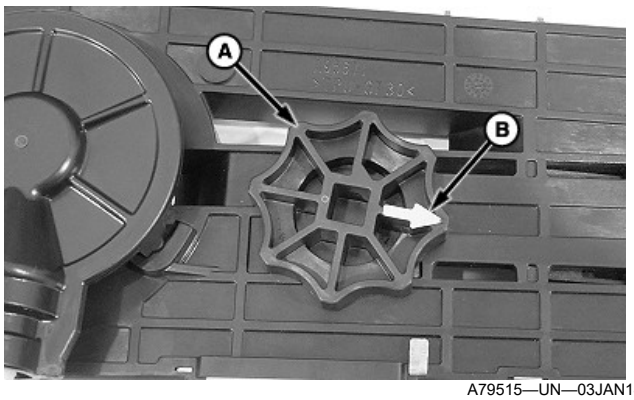
NN32476,00003E6-19-23DEC22

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.)

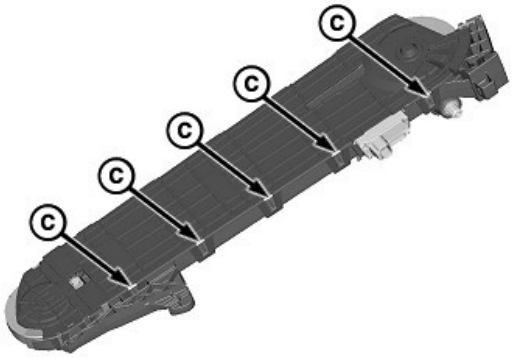


A79515—UN—03JAN14

2. Turn the knob (A) 180° counterclockwise so that

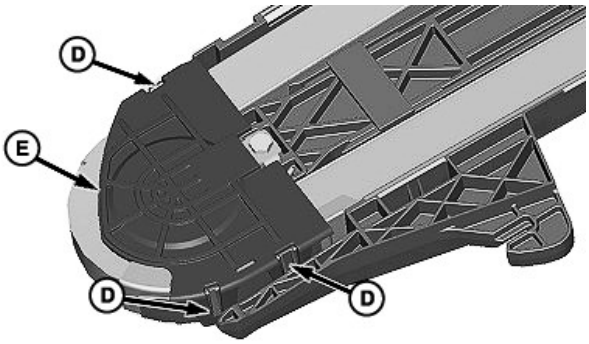
BrushBelt is a trademark of Deere & Company

arrow (B) points towards the top of the BrushBelt™ cartridge.



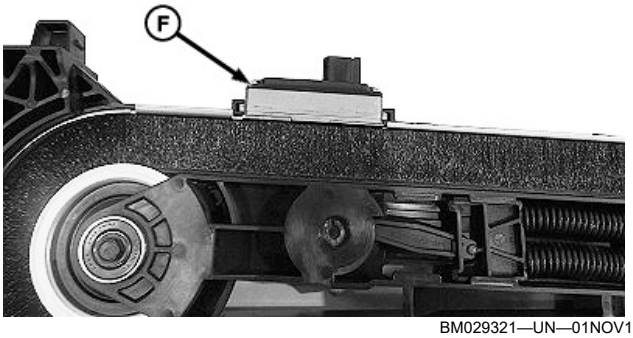
BM029319—UN—26APR18

3. Lift the tabs (C) and remove cover.



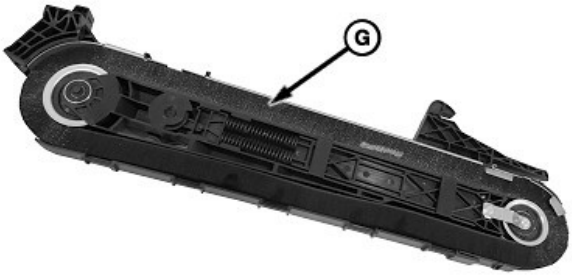
BM029320—UN—30OCT18

4. Lift the tabs (D) and remove cover (E).



BM029321—UN—01NOV18

5. Remove the seed sensor (F).



BM029322—UN—26APR18

6. Remove the BrushBelt™ (G).

NOTE: Assemble new BrushBelt™, following reverse order.

NN32476,00003E7-19-29APR21

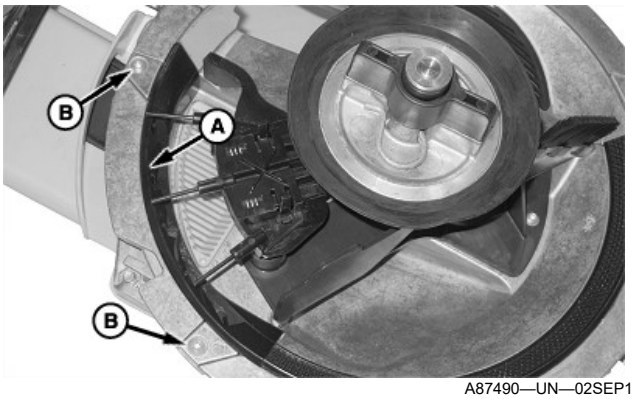
Replace or Clean the Seed Guide—Only for ExactEmerge™

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.



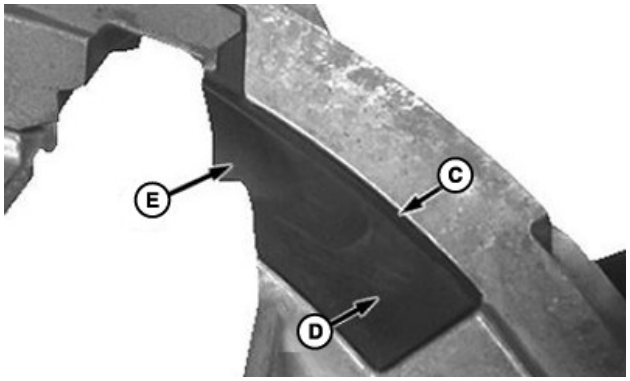
A87490—UN—02SEP15

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.)

BrushBelt is a trademark of Deere & Company

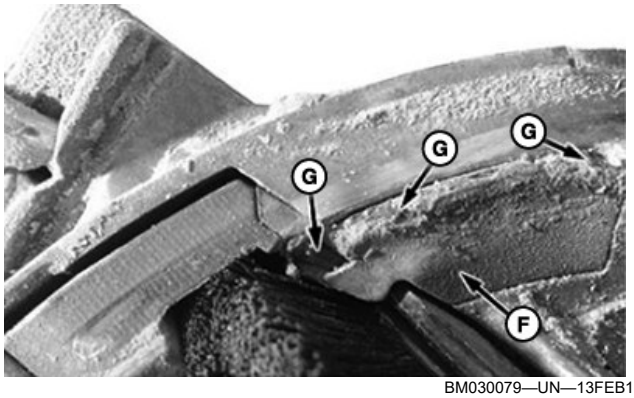
ExactEmerge is a trademark of Deere & Company

5. Remove and retain the TORX® screws (B) and the plates.
6. To remove, pull up on the outer double eliminator assembly (A).



BM030078—UN—13FEB19

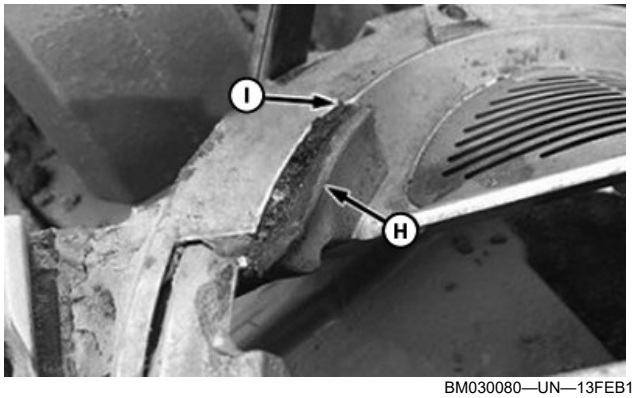
7. If the rubber boot is in good condition, the edges (C) and flat surface (D) are flush with the meter housing. The recessed area (E) is lower than the edges.



BM030079—UN—13FEB19

Deteriorated Rubber Boot

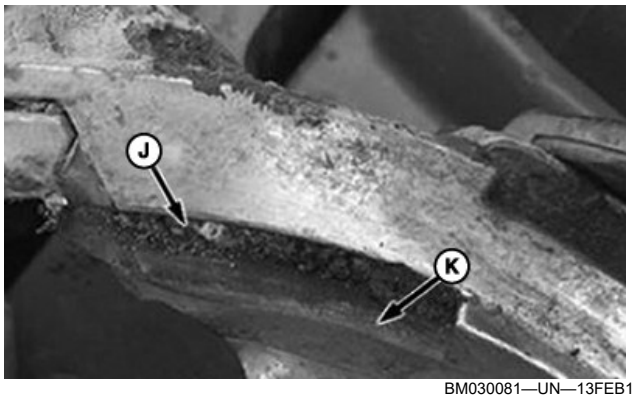
8. If the rubber boot (F) has excessive deterioration (G), replace the rubber boot.



BM030080—UN—13FEB19

Worn Rubber Boot

9. If the rubber boot (H) has worn enough to expose an edge (I) of the meter housing, replace the rubber boot.

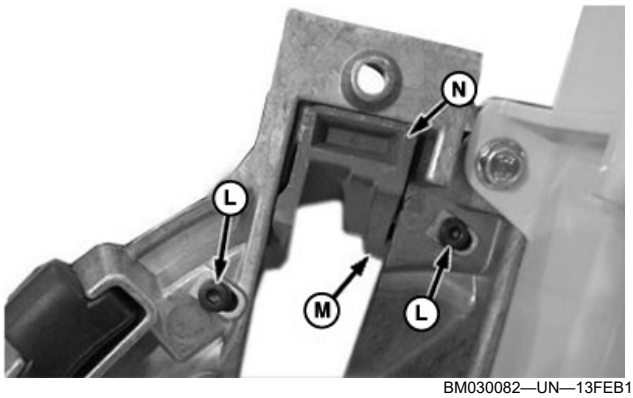


BM030081—UN—13FEB19

Debris Buildup

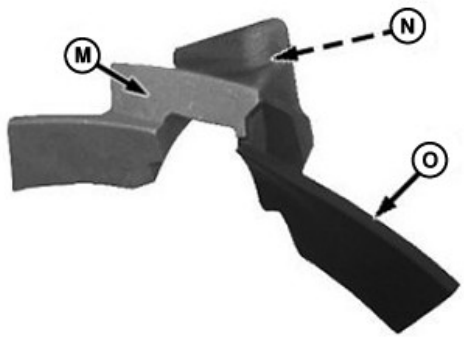
IMPORTANT: Prevent debris from pushing the rubber boot out of position.

10. Remove all debris (J) from the rubber boot (K) and from the boot seat in the meter housing.



BM030082—UN—13FEB19

Torx® Screws and Pocket



BM030083—UN—13FEB19

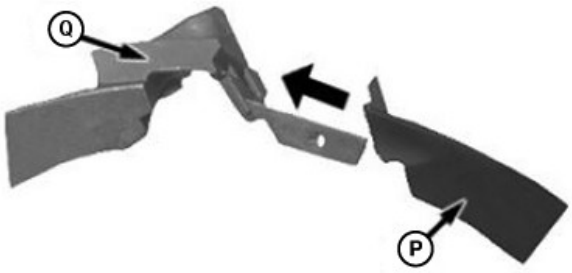
Seed Guide Assembly

L—Torx® Screws
M—Seed Guide Assembly
N—Seed Guide Pocket
O—Rubber Boot

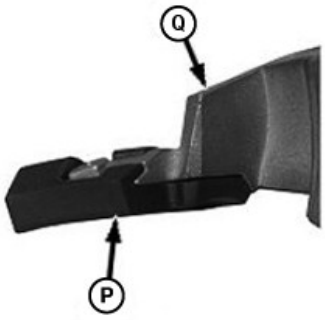
11. Remove and retain the two Torx® screws (L).

TORX is a trademark of Camcar/Textron

12. To remove the seed guide assembly (M), lightly tap in the pocket (N) from the rear of the meter.

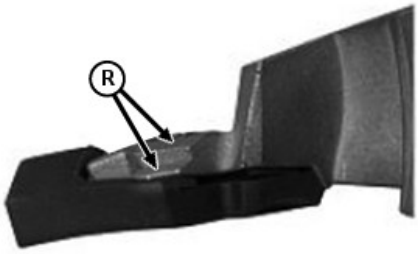


BM030084—UN—13FEB19



BM030085—UN—13FEB19

Correctly Installed



BM030086—UN—14MAR19

Incorrectly Installed

IMPORTANT: Verify that the tabs (R) on the rubber boot are seated in the notches of the seed guide.

13. When replacing the rubber boot (B), install it on the 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® Screws—Torque. . . . . 2.9 N·m (25-1/2 lb·in)

NN32476,00003E8-19-19MAY21

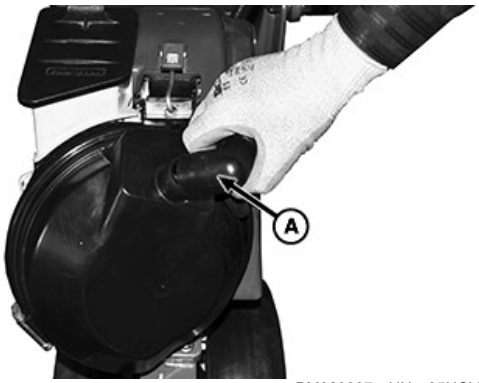
Replace Meter Motor and BrushBelt™ Motor—Only for ExactEmerge™

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

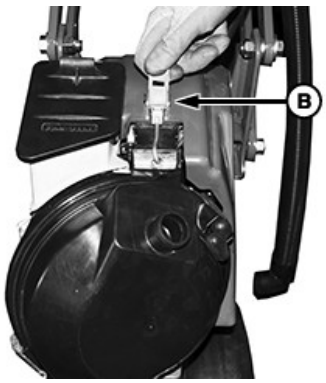
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.

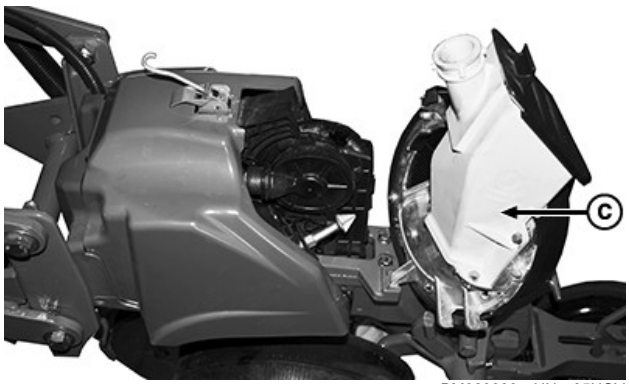


BM029307—UN—05NOV18

2. Remove the hose (A).

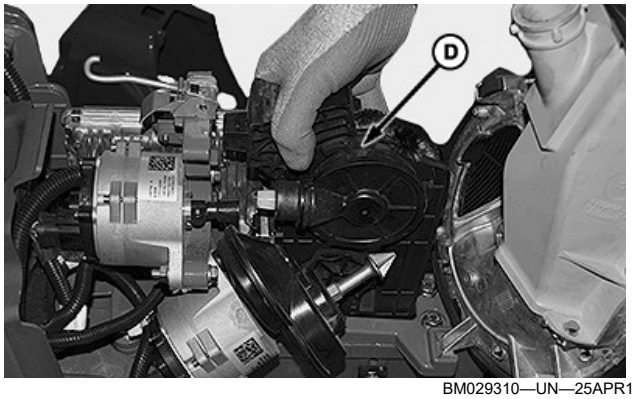


BM029308—UN—05NOV18



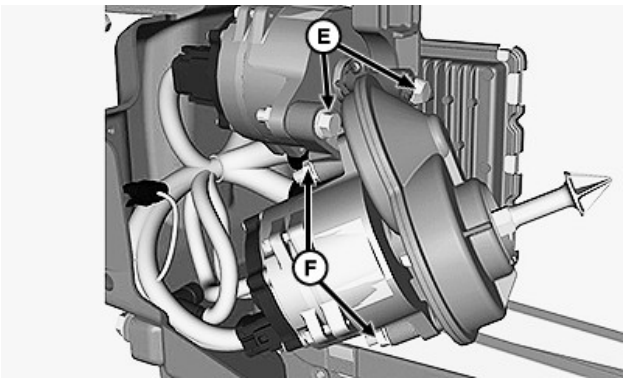
BM029309—UN—05NOV18

3. Open the latch (B) and pull the meter (C) to back.



BM029310—UN—25APR18

4. Disconnect the wiring connectors and remove the BrushBelt™ (D).



BM029357—UN—15MAR19

5. Loosen the screws (E and F), and remove meter motor and BrushBelt™ motor.
6. To assembly, follow the procedure in reverse order.
7. Tighten the screws as specified.

Specification

Screws—Torque	37 N·m (27 lb·ft)

NN32476,00003E9-19-29APR21

Replace Meter Wear Pads—Only for ExactEmerge™

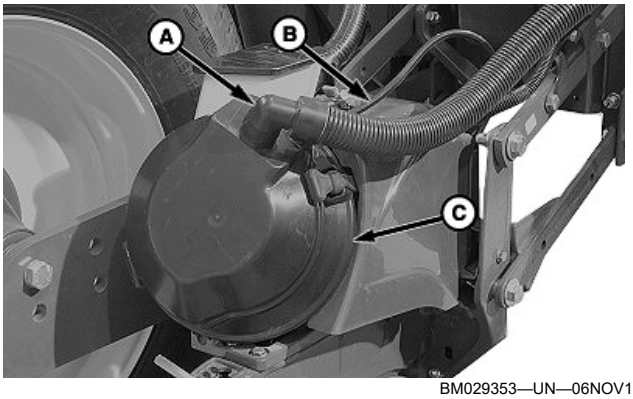
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

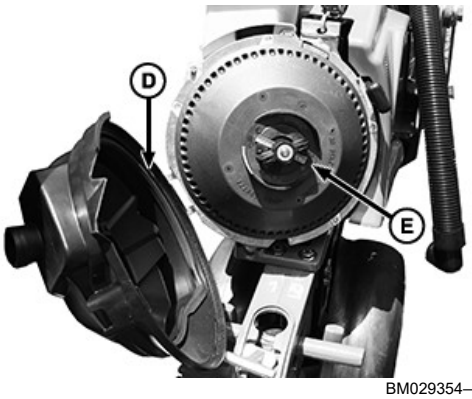
1. Park the planter on level ground.

BrushBelt is a trademark of Deere & Company



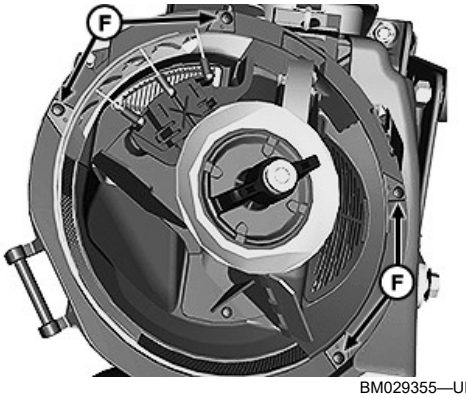
BM029353—UN—06NOV18

2. Remove the vacuum hose (A) and vacuum gauge line (B) from the meter dome (C).



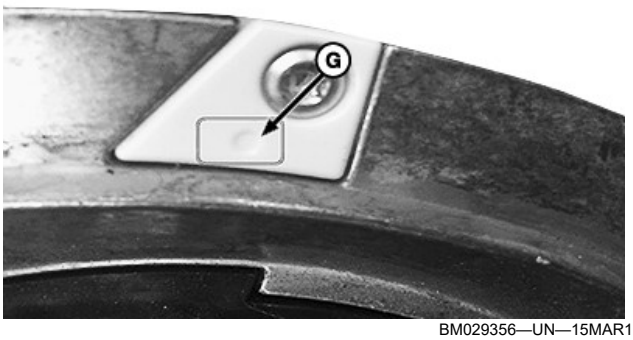
BM029354—UN—06NOV18

3. Open the seed meter dome (D) and remove seed disk (E).



BM029355—UN—06NOV18

4. Loosen the screws (F).



BM029356—UN—15MAR19

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 the pad (G), 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.

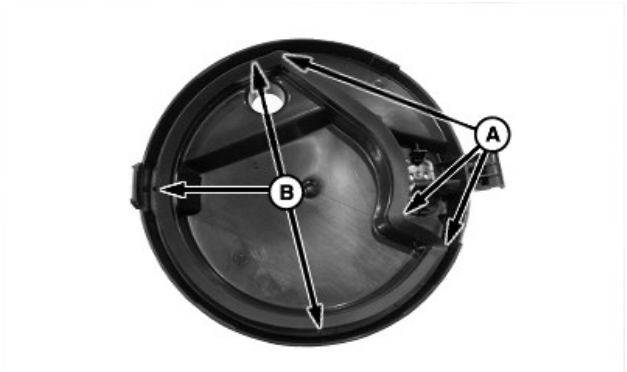
NN32476,00003EA-19-29APR21

Install New Vacuum Seal

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

New Vacuum Seal—MaxEmerge™ 5 and MaxEmerge™ 5e



A78799—UN—07APR14

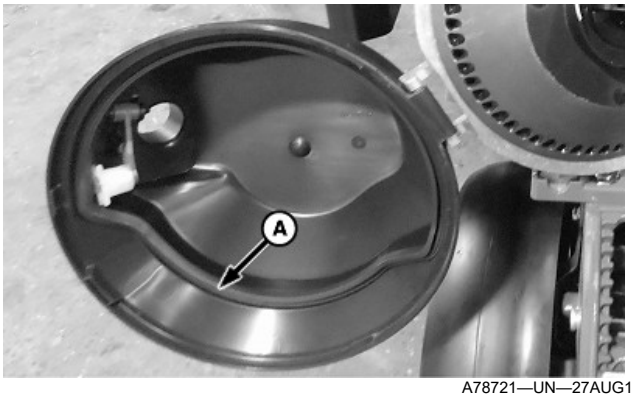
1. Remove the seed meter from planting unit and leave to one side. It is not necessary to remove seeds from feeder.
2. Unlock the pin and open the vacuum chamber.
3. Remove and discard used vacuum seal.

NOTE: This procedure is carried out if the seal has excessive play.

4. Install new seal.

5. Insert first the 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 TY25797 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 the 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 TY25797 on the vacuum seal side.
5. Close the seed meter dome and latch the meter handle.

NN32476,00003EB-19-19MAY21

Remove and Install Standard Flush Face Seed Tubes—Only for MaxEmerge™ 5 and MaxEmerge™ 5e

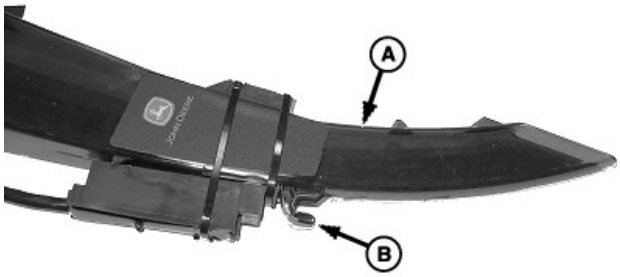
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

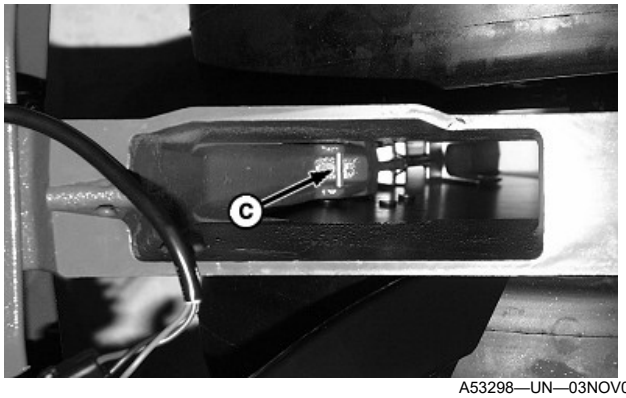
To remove the seed tube, squeeze tabs with fingers until they release from casting and pull upward.

1. Connect the monitor harness to the sensor harness.

NOTE: Place harness connector inside the planting unit at same time as the seed tube.

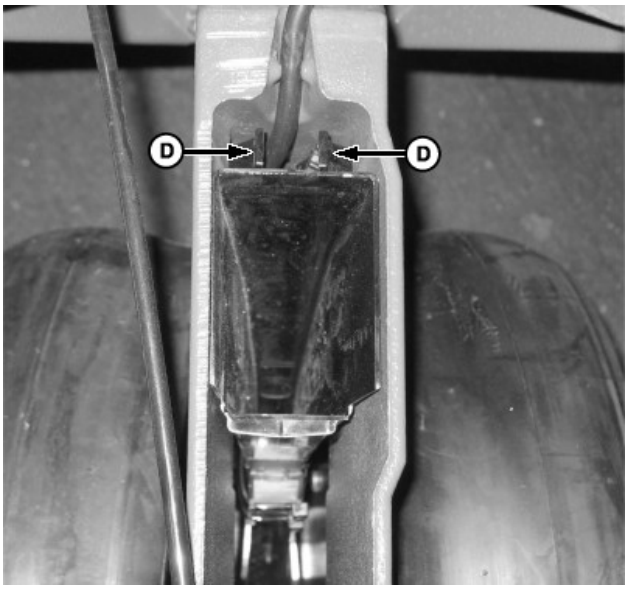


A59900—UN—02APR07



A53298—UN—03NOV03

2. Insert the seed tube (A) into the planting unit so the hook (B) locks on the alignment pin (C).



A59901—UN—02APR07

3. Position the seed tube so tabs (D) lock into holes.

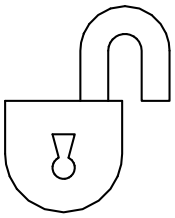
NN32476,00003EC-19-10MAY21

Disengage the Electric Drive—MaxEmerge™ 5e

Perform this service as required.

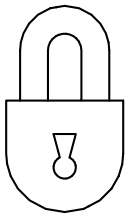
Make sure to comply with all the safety conditions before servicing.

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.



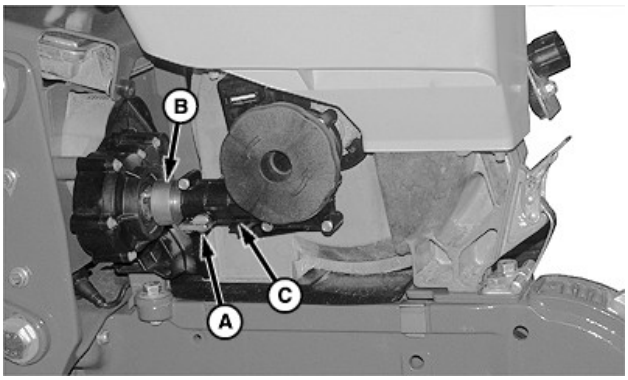
A62348—UN—27MAR08

Unlocked Symbol Up



A62347—UN—27MAR08

Locked Symbol Up



A90664—UN—24MAY16

A—Lock Pin
B—MaxEmerge™ 5e Drive Coupler
C—Gearbox Housing

1. Rotate lock pin (A) 180 degrees until the **unlocked** symbol is on top.
2. Pull the MaxEmerge™ 5e drive coupler (B) from the gearbox housing (C).
3. Rotate lock pin (A) 180 degrees until the **locked** symbol is on the top.

NN32476,00003ED-19-19MAY21

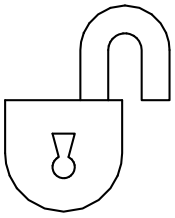
MaxEmerge is a trademark of Deere & Company

Engage the MaxEmerge™ 5e Drive—Only for MaxEmerge™ 5e

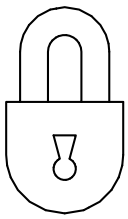
Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

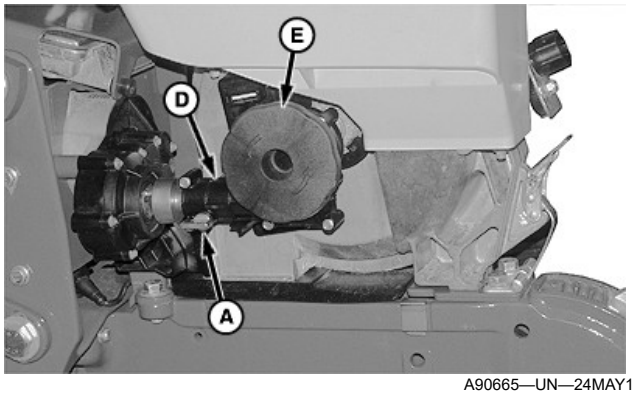
IMPORTANT: MaxEmerge™ 5e drive only needs to be removed when broken or when there are issues with the gear case housing. Standard removal of the seed meter assembly for maintenance or service does not require the drive to be removed from the gear case housing.



A62348—UN—27MAR08
Unlocked Symbol Up



A62347—UN—27MAR08
Locked Symbol Up



A90665—UN—24MAY16



A100473—UN—27APR18

A—Lock Pin
B—Square End
C—MaxEmerge™ 5e Drive Coupler
D—Gearbox Housing
E—Meter Drive Handle

Rotate the lock pin (A) 180 degrees until the **unlocked** symbol is on the top.

NOTE: If the MaxEmerge™ 5e drive coupler does not fully engage the gear case, rotate the meter drive handle (E) until the coupler slides into the gear case.

2. Starting with the square end (B) first, push the MaxEmerge™ 5e drive coupler (C) into the gear case housing (D).
3. Rotate the lock pin (A) 180 degrees until the **locked** symbol is on the top.

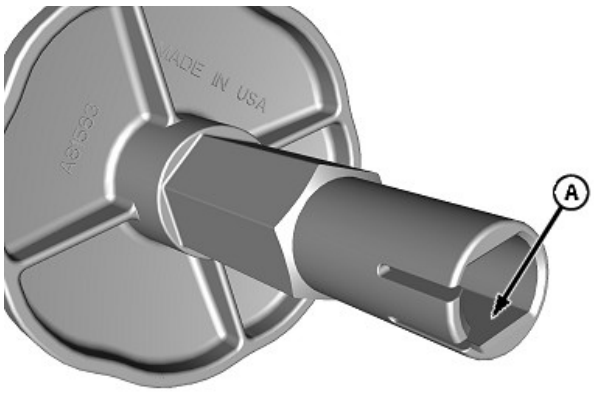
NN32476,00003EE-19-29APR21

Replace the Meter Shear Hub—Only for MaxEmerge™ 5 and MaxEmerge™ 5e

Perform this service as required.

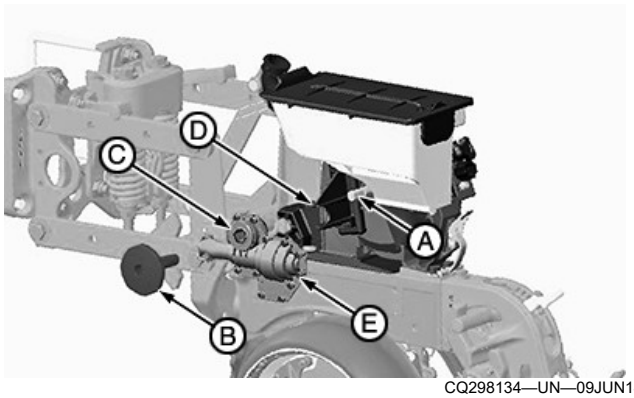
Make sure to comply with all the safety conditions before servicing.

NOTE: The following images show the MaxEmerge™ 5. However, this same procedure is also applicable for the MaxEmerge™ 5e.



A57648—UN—13MAR06

1. Align the flat surfaces (A).



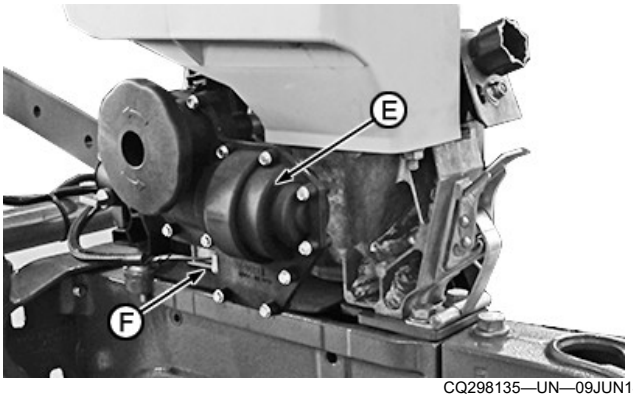
CQ298134—UN—09JUN14

2. Insert the handle (B) through gear case (C) until handle snaps into the shaft groove.

MaxEmerge is a trademark of Deere & Company

NOTE: Gear case must seat into cutout (D).

3. Install the plastic strap to tighten the handle (B) on the seed meter axis.



CQ298135—UN—09JUN14

4. If equipped with the RowCommand™ clutch (E), install the connector (F).

NN32476,00003F0-19-30APR21

RowCommand is a trademark of Deere & Company

Service—Planting Unit—Pneumatic Downforce (PDF) System

Drain the Tank of the Pneumatic Downforce (PDF) System—If Equipped

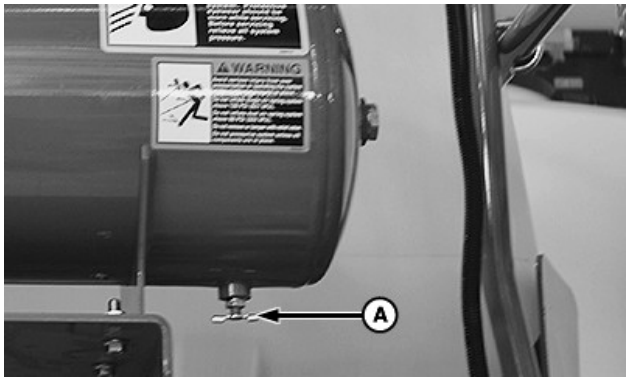
NOTE: If the planter uses the air compressor of the tractor, see the tractor Operator's Manual for correct procedure.

Perform this service every 10 hours of operation or daily, 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.



BM029280—UN—20APR18

2. Open valve (A).
3. Drain water from the pneumatic downforce (PDF) compressor tank.
4. After draining, close valve (A).

h3ymaet,1656934013716-19-15DEC22

Check the Pressure Sensors of the Pneumatic Downforce (PDF) System—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 machine on level ground.
2. Raise the planter and install the safety 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™ 4 monitor.

NOTE: This procedure calibrates all the PDF sensors.

KK69021,00009A6-19-27MAY21

Check the Oil Level of the Pneumatic Downforce (PDF) Compressor—If Equipped

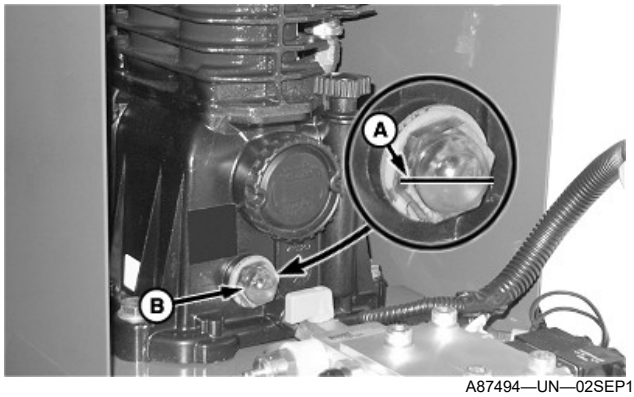
Perform this service every 10 hours of operation or daily.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid injury or death. Deactivate the selective control valve (SCV), 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.

h3ymaet,1656934342779-19-15DEC22

Change the Oil of the Pneumatic Downforce (PDF) Compressor—If Equipped

Perform this service at first 20 hours of operation, at

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every 200 hours of operation, and at the start of the season.

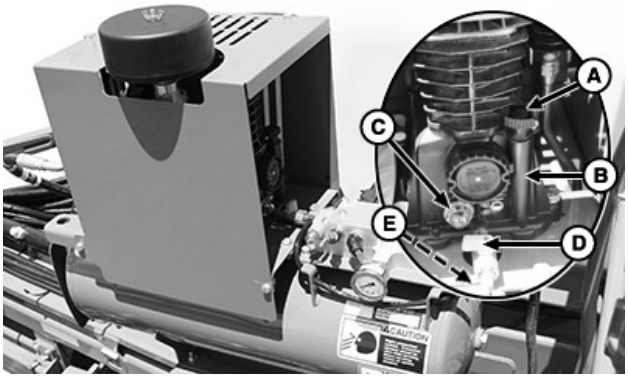
Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid injury or death. Deactivate the selective control valves (SCVs), 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).

h3ymaet,1656934615307-19-07DEC22

Clean the Filter of the Pneumatic Downforce (PDF) Compressor—If Equipped

Perform this service every 50 hours of operation and 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.



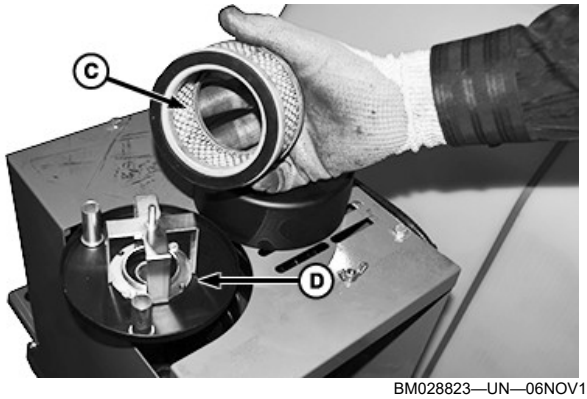
BM028822—UN—01NOV18

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).

h3ymaet,1656934815479-19-15DEC22

Replace the Filter of the Pneumatic Downforce (PDF) Compressor—If Equipped

Perform this service at the start of the season and 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 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.



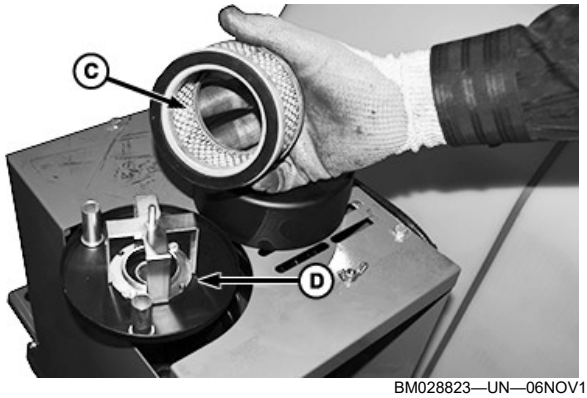
BM028822—UN—01NOV18

2. Remove the wing nut (A).



BM028821—UN—01NOV18

3. Remove the weather shield (B).



BM028823—UN—06NOV18

4. Remove the filter element (C) and replace it with a new one. See your John Deere dealer.

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).

h3ymaet,1656935255540-19-15DEC22

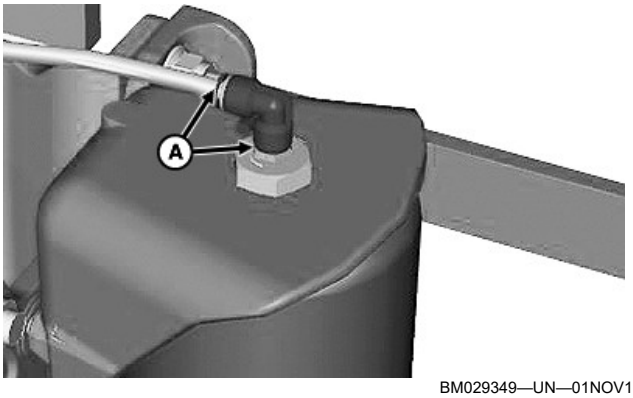
Check for Leaks on Connectors of the Pneumatic Downforce (PDF) System—If Equipped

Perform this service at the start of the season and at the middle of the season.

Make sure to comply with all the safety conditions before servicing.

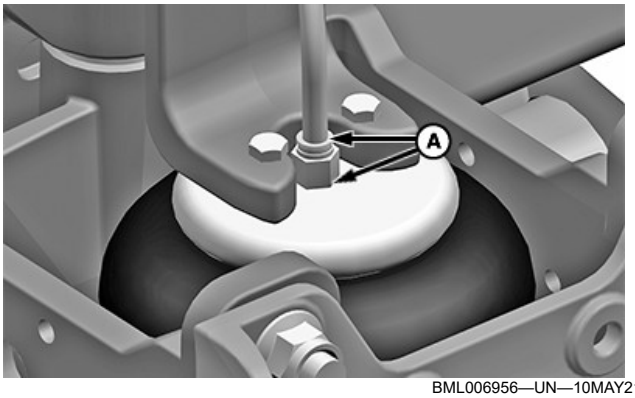
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



BM029349—UN—01NOV18

Connectors—PDF Air Springs of the Row Units



BML006956—UN—10MAY21

Connectors—PDF Air Springs of the Coulter

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.

KK69021,00009AB-19-12MAY21

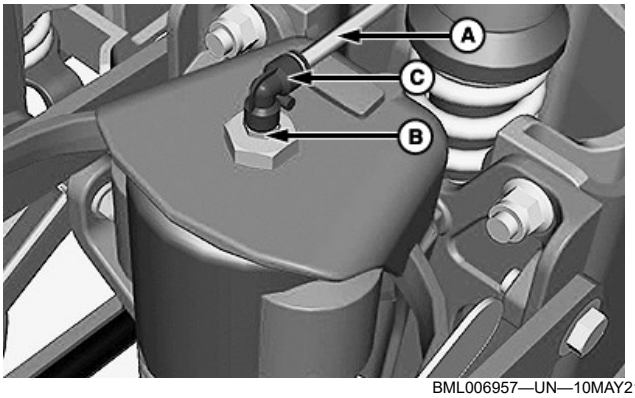
Replace the Connectors of the Pneumatic Downforce (PDF) System—If Equipped

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

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

1. Park the planter on level ground.



BML006957—UN—10MAY21

2. Disengage the hose (A).
3. Loosen the nut (B) and remove the connector (C).
4. To assemble, follow the procedure in reverse order.

KK69021,00009AC-19-12MAY21

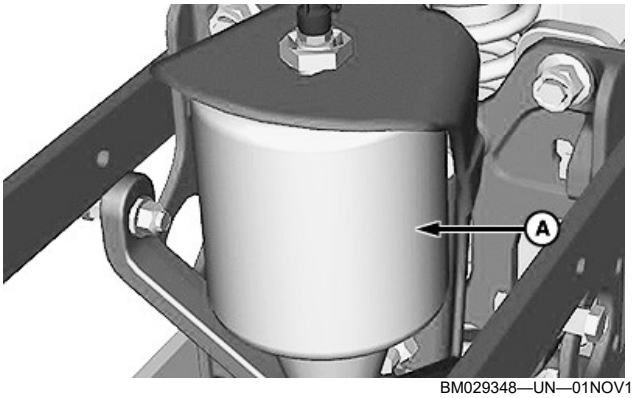
Check for Leaks on the Air Springs of the Pneumatic Downforce (PDF) System—If Equipped

Perform this service at the start of the season and at the middle of the season.

Make sure to comply with all the safety conditions before servicing.

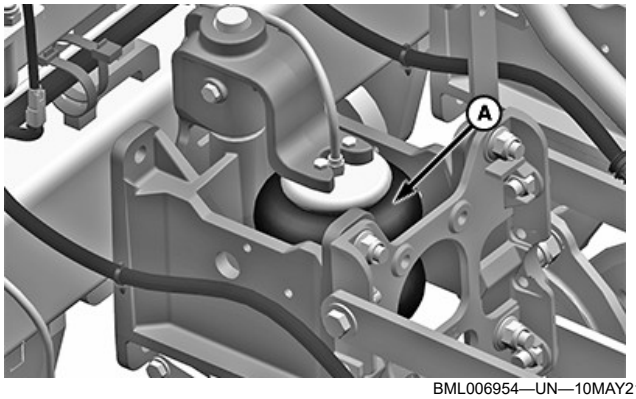
CAUTION: Avoid serious injury or death. Properly support the machine.

1. Park the planter on level ground.



BM029348—UN—01NOV18

PDF Air Springs of the Row Units



BML006954—UN—10MAY21

PDF Air Springs of the Coulter

2. Check the air leakage on the pneumatic downforce (PDF) air springs (A).

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.

KK69021,00009AD-19-12MAY21

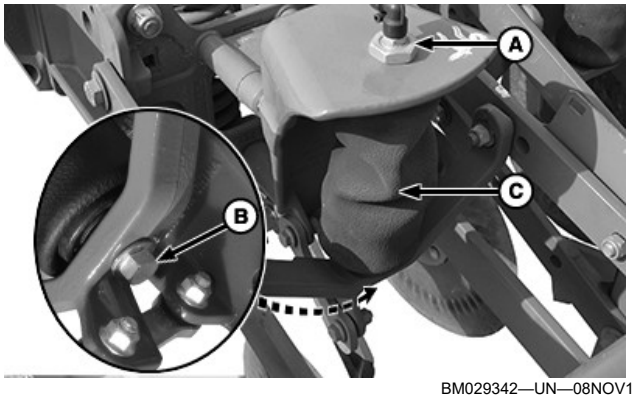
Replace the Air Springs of the Pneumatic Downforce (PDF) System—If Equipped

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

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

1. Park the planter on level ground.
2. **Replacement procedure for the PDF air springs of the row units:**
   a. Remove the pneumatic downforce (PDF) compressor connector. (See Replace the Connectors of the Pneumatic Downforce (PDF) System—If Equipped in this section.)

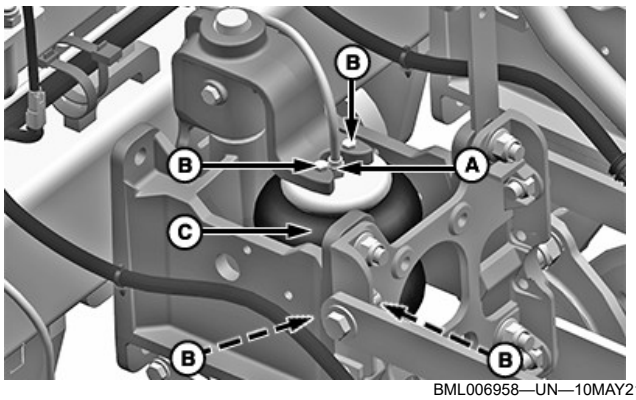


BM029342—UN—08NOV18

   b. Remove the nut (A).
   c. Remove the screw (B) and the air spring (C).
   d. To assemble, follow the procedure in reverse order of removal.
   e. Tighten the nut (A) and the screw (B) to specification:

Specification	
Nut (A)—PDF Row Units—Torque	21 N·m (186 lb·in)
Screw (B)—PDF Row Units—Torque	35 N·m (26 lb·ft)

3. **Replacement procedure for the PDF air springs of the coulter:**



BML006958—UN—10MAY21

   a. Remove the nut (A).
   b. Remove the four screws (B) at the top and at the bottom of the air spring (C).
   c. Remove the air spring (C).
   d. To assemble, follow the procedure in reverse order of removal.
   e. Tighten the nut (A) and the screw (B) to specification:

Specification	
Nut (A)—PDF Coulter—Torque	22 N·m (194.7 lb·in)

Screws (B)—PDF
Coulter—Torque. . . . . 23 N·m (203.5 lb·in)

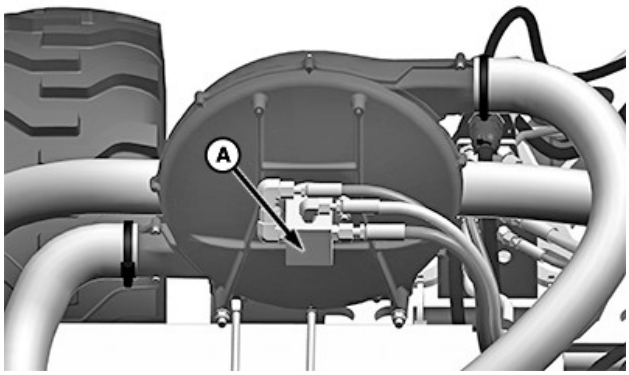
KK69021,00009AE-19-12MAY21

Inspect Vacuum Motor

Perform this service at every 10 hours of operation or daily, and when excessive amount of oil leakage is detected.

Make sure to comply with all the safety conditions before servicing.

NOTE: A small amount of oil leakage is acceptable.



BML006953—UN—05MAY21

Vacuum Motor

1. Check the 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 the vacuum motor (A).

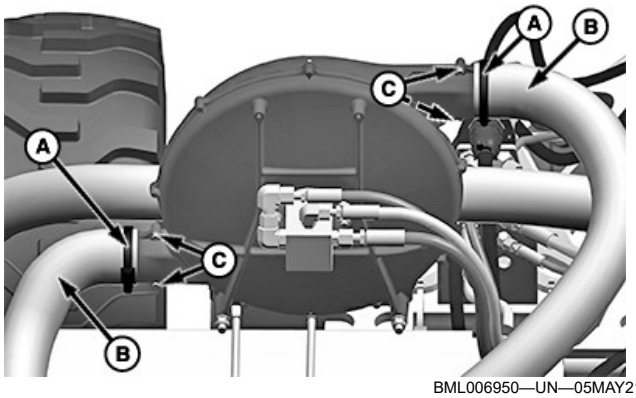
KK69021,00009A1-19-19MAY21

Inspect and Clean Vacuum Impeller and Housing

Perform this service at every 400 hours of operation (end of season).

Make sure to comply with all the safety conditions before servicing.

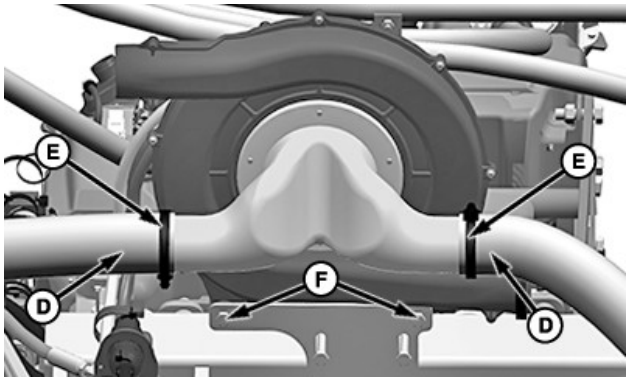
CAUTION: Avoid chemical injury. Follow the precautions of the chemical manufacturer when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.



BML006950—UN—05MAY21

Vacuum Blower

1. Remove the clamps (A) of the top and lower hoses (B). Disconnect the top and lower hoses (B).
2. Remove the screws (C).



BML006949—UN—05MAY21

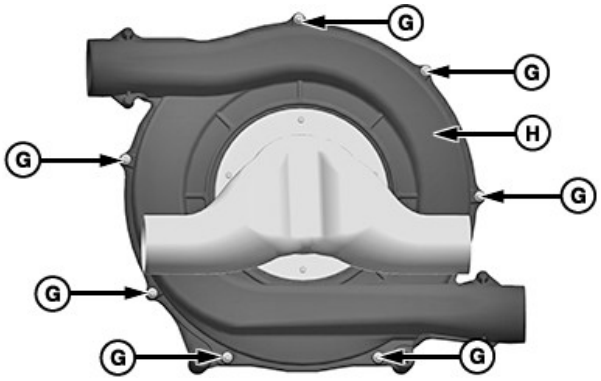
Side Hoses

3. Remove the clamps (E) and the side hoses (D).

CAUTION: Avoid injury. The vacuum blower is heavy. Make sure to support it properly before removing the support screws (F) that fix the blower at the machine.

IMPORTANT: Avoid damage to the hydraulic lines. Make sure to support the vacuum blower properly.

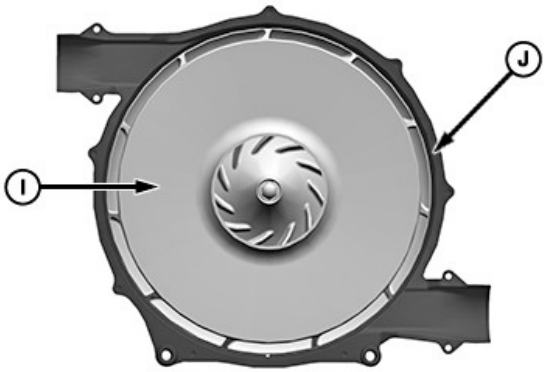
4. Support the vacuum blower and remove the support screws (F).



BML006951—UN—05MAY21

Cover of the Vacuum Blower

5. Remove the cover screws (G) and the cover (H).



BML006952—UN—05MAY21

6. Clean the impeller (I) and the housing.
7. Inspect the impeller (I) for chips and cracks. Replace the impeller (I) if damage is found. See your John Deere dealer.
8. Inspect the vacuum fan housing (J) for signs of impeller contact. Replace the vacuum fan housing (J) and impeller (I) if contact is evident. See your John Deere dealer.
9. Install components in reverse order of removal.

KK69021,00009A2-19-03MAY21

Clean the Hose of the Vacuum Pressure Sensor

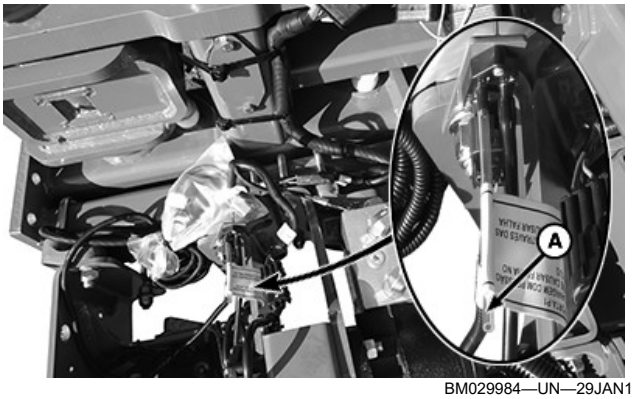
Perform this service at the start of the season and as necessary.

Make sure to comply with all the safety conditions before servicing.

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

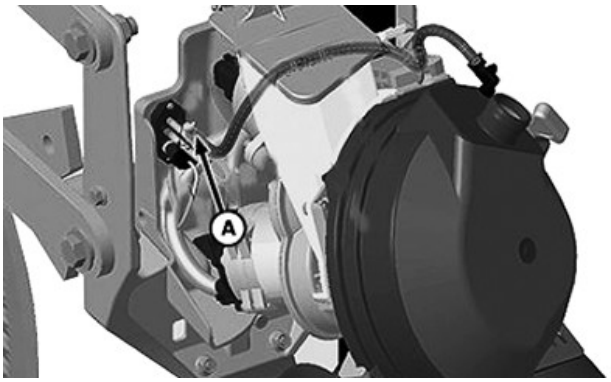
IMPORTANT: This procedure is recommended to avoid damage in the vacuum system.

1. Park the planter on level ground.



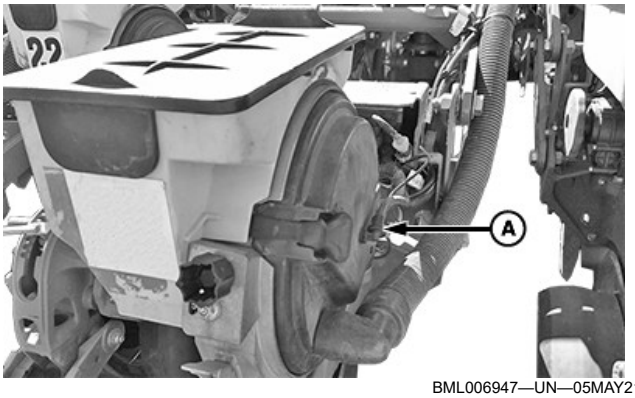
BM029984—UN—29JAN19

Hose of the Vacuum Pressure Sensor—MaxEmerge



BM029360—UN—30OCT18

Hose of the Vacuum Pressure Sensor—ExactEmerge



BML006947—UN—05MAY21

Hose of the Vacuum Pressure Sensor—MaxEmerge

2. Disengage the hose (A) and check the system for dirt.
3. Remove the hoses (A) at both sides.
4. If necessary, clean the system.

KK69021,00009A3-19-12MAY21

Clean the Vacuum System

Perform this service at every 50 hours of operation and as necessary. Clean the vacuum system at least once a week during operation or more often in

severe dusty conditions due to accumulation of straw and/or foreign material in the ends of the vacuum system hoses.

Make sure to comply with all the safety conditions before servicing.

Dirt or seed innoculant/treatment may build up in the vacuum system and cause low vacuum at the planting units, resulting in loss of seed metering accuracy.

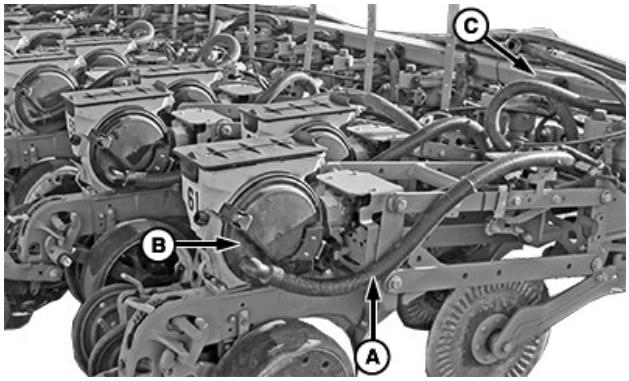
CAUTION: Avoid chemical injury. Follow the precautions of the chemical manufacturer when handling parts coated with seed treatments. Use proper skin, eye, and respiratory protection.

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 is for reference only. The procedure for other planter models is similar.



BML006948—UN—05MAY21

Vacuum Hose

2. One planting unit at a time, remove the vacuum hose (A) from the seed meter (B). Inspect and clean all the straw and/or foreign material from both attaching hose (A) ends. Shake the hose (A) for a few seconds and replace it on the seed meter (B).
3. Remove the vacuum inspection plates in the frame tube (C), one at a time, then reinstall.
4. Repeat the procedure for all the planting units.

KK69021,00009A4-19-03MAY21

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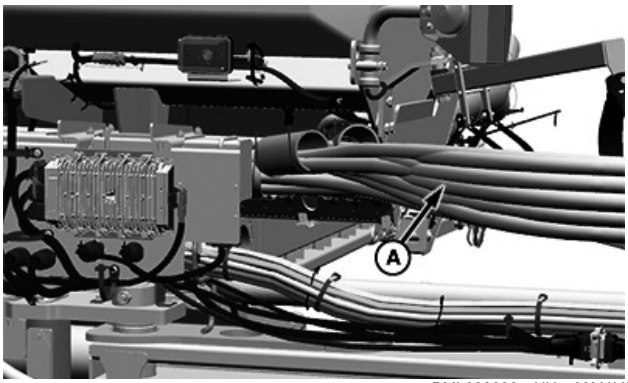
Check Routing of Central Commodity System (CCS™) Hoses

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.



BML020638—UN—03MAY21

2. Check if the hoses (A) are properly routed.
3. Check if hoses are folded or damaged.
4. Replace or repair, if necessary.

NN32476,0000401-19-03MAY21

Check Central Commodity System (CCS™) Sensor

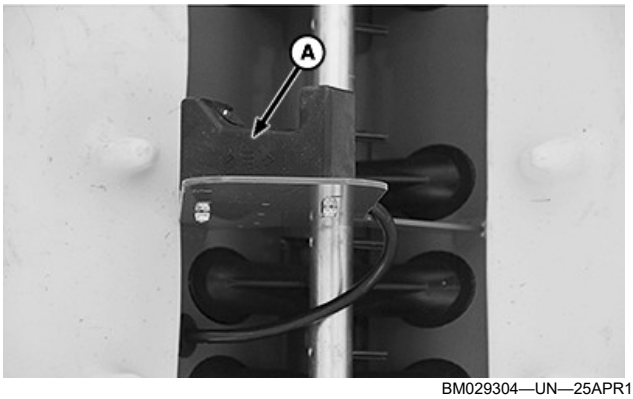
Perform this service at the start of the season.

Make sure to comply with all the safety conditions before servicing.

CAUTION: Avoid serious injury or death. Properly support the machine.

To avoid errors in the central commodity system (CCS™) sensor readings:

1. Park the planter on level ground.



BM029304—UN—25APR18

2. Check if the sensor (A) is clean.
3. Check if the sensor is in perfect condition.
4. Clean or replace, if necessary.

NN32476,0000400-19-03MAY21

Clean Central Commodity System (CCS™) Manifold

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.

1. Park the planter on level ground.



BM029325—UN—30OCT18

2. Open the handle (A).
3. Check the central commodity system (CCS™) manifold for dirt.
4. Clean, if necessary.

NN32476,0000402-19-03MAY21

Clean the Central Commodity System (CCS™) Tank Level Sensors

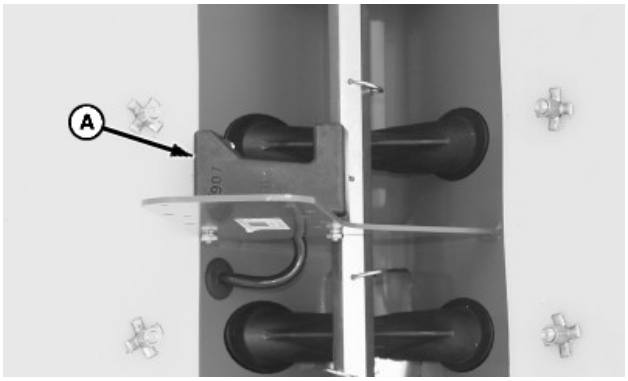
Perform this service as required.

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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. Open the CCS™ tank.



A49868—UN—12AUG02

3. Clean the tank level sensors (A) before filling the CCS™ tanks.
4. Clean the sensors with a stiff bristled, 203 mm (8 in) wide broom with a 1.4 m (4.5 ft) long handle..

NN32476,0000403-19-03MAY21

Zeroing Central Commodity System (CCS™) Fan Pressure Gauge

Perform this service as required.

Make sure to comply with all the safety conditions before servicing.

NOTE: To zero monitor vacuum gauge, see SeedStar™ Operator´s Manual.

1. Shut off the vacuum commodity system (CCS™) fan.
2. With vacuum gauge in a vertical position, disconnect the CCS™ fan monitor line to equalize the gauge with atmospheric pressure.



BM029824—UN—31OCT18

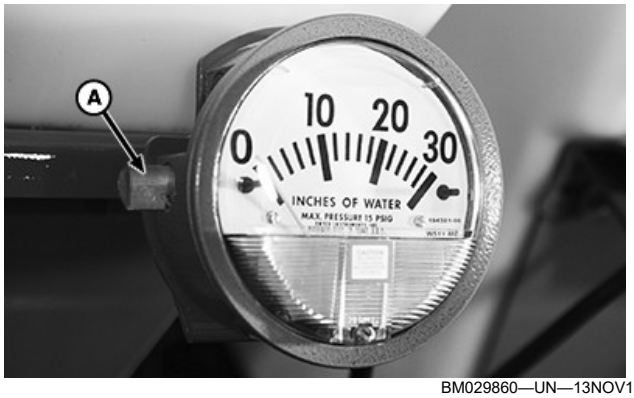
3. Use the zero adjusting screw (A) to set the gauge pointer exactly on zero mark.
4. Connect the monitor line.

NN32476,0000404-19-03MAY21

Check Central Commodity System (CCS™) Blower Gauge Filter

Perform this service at every 400 hours of operation.

Make sure to comply with all the safety conditions before servicing.



BM029860—UN—13NOV18

1. If the central commodity system (CCS™) blower gauge filter (A) becomes clogged with dust, clean it.

NOTE: Annually inspect the CCS™ blower gauge filter.

2. Replace, if necessary.

NN32476,0000405-19-03MAY21

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SeedStar is a trademark of Deere & Company

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.
	Plant/Trans switch in wrong position.	Check to make sure that TRANS-PLANT switch is in the PLANT position.
	Low hydraulic oil.	Check the oil level in tractor and SCV lock out if equipped. (See your tractor Operator's Manual.)

NN32476,0000407-19-27MAY21

Hydraulic Drive System (VRD)

Symptom	Problem	Solution
Row units on the right-hand side of machine not planting.	Right-hand driveshaft cotter pin sheared.	Repair cause of pin shearing and replace cotter pin.
	Half-Width Drive Disconnect is engaged.	Move switch to middle position.
Row units on the left-hand side of machine not planting.	Left-hand driveshaft cotter pin sheared.	Repair cause of pin shearing and replace cotter pin.
	Half-Width Drive Disconnect is engaged.	Move switch to middle position.

N8XR12J,00006D1-19-15MAR22

Vacuum Meter

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

NOTE: The adjust of vacuum and central commodity system (CCS) for DB40, DB50, D74 Type B, and DB90 is performed only on tractor SCVs. For DB40, DB50, and DB74 Type A it can also be adjusted on flow control valve.

Symptom	Problem	Solution
False monitor reading.	Dirty seed tube sensors.[1]	Clean the sensors. (See Service—Planting Unit—Seed Meter and Hopper section.)
	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.
No seed being planted.	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.[1]	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.
	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.
Poor seed spacing.	Seed disk vacuum holes are plugged.	Clean seed disks.
		Inspect the knockout wheel assembly. Clean or replace as needed.

[1] Only for MaxEmerge 5 and MaxEmerge 5e
[2] Only for ExactEmerge

Symptom	Problem	Solution
	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 misadjusted.	Readjust the hubs.
	Incorrect vacuum for the seed being planted.	Adjust vacuum level to recommended setting.
	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.[3]	Clean off mud with cleaning brush.
	Worn seed tube guard.[3]	Replace guard.
	The BrushBelt Cartridge is improperly installed or worn.[4]	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.[4]	Remove the BrushBelt, clean it, and reinstall it.
	The seed sensor is installed improperly.[4]	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.[4]	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.

[3] Only for MaxEmerge 5 and MaxEmerge 5e
[4] Only for ExactEmerge

Symptom	Problem	Solution
	"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.
	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.[5]	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.

[5] *Only for MaxEmerge 5 and MaxEmerge 5e.*

Symptom	Problem	Solution
	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.
	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.

Symptom	Problem	Solution
	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.[6]	Machine rolling backward when lowering.	Lower machine while moving forward.
	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.[7]	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.[6]	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.
		Increase the downforce pressure being applied to the row unit.
Too many skips.	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.

[6] *Only for MaxEmerge 5 and MaxEmerge 5e*
[7] *Only for ExactEmerge*

Symptom	Problem	Solution
	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.
	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.
	For Type A planters: flow control valve misadjusted.	Adjust control valve knob.
	For Type B planters and DB90: tractor selective control valve (SCV) flow misadjusted.	Adjust tractor SCV.
	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.

Symptom	Problem	Solution
	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.
	For Type A planters: Control valve failed.	Replace the flow control valve.
	Tractor oil level low.	Add oil to the tractor oil reservoir.
	The tractor is not stabilizing the flow (when controlled with the tractor SCV).	See your John Deere dealer.
	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: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

NOTE: The adjust of vacuum and central commodity system (CCS) for DB40, DB50, D74 Type B, and DB90 is performed only on tractor SCVs. For DB40, DB50, and DB74 Type A it can also be adjusted on flow control valve.

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. See your John Deere dealer.
	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. See your John Deere dealer.
	Faulty CCS fan motor.	Repair or replace motor. See your John Deere dealer.
	Faulty CSS flow control valve (if equipped).	Repair or replace valve. See your John Deere dealer.
	Row unit switch is depressed.	Lower machine to the ground and adjust the switch as needed.

Symptom	Problem	Solution
	Row unit switch faulty.	Replace the switch.
	For Type A planters: flow control valve incorrectly set	Increase flow control setting.
	For Type B planters and DB 90: selective control valve (SCV) flow incorrectly set.	Increase SCV flow setting.
	Return hose not fully engaged in SCV outlet.	Check the connections.
CCS fan vibrates.	Dirty fan blades.	Clean the fan.
	Broken fan blades; fan out of balance.	Replace the fan blade assembly.
CCS fan surges.	For Type A planters: flow control valve incorrectly set.	Adjust flow control valve or replace.
	For Type B planters and DB90: 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).
For Type A planters: 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. See your John Deere dealer.
	Machine flow control valve set incorrect.	Increase valve setting.
	Tractor pressure too low.	Check and repair tractor hydraulic system. See your John Deere dealer.
	CCS fan motor seal leaking.	Replace seal. See your John Deere dealer.
	Faulty CCS fan motor.	Repair or replace motor. See your John Deere dealer.
	CCS fan turning backward.	Check valve removed from return line. Check and correct hose connections to tractor.
	Excessive air leakage from tank.	Install lids.

Symptom	Problem	Solution
	Pressure gauge broken.	Repair or replace gauge.
For Type B planters and DB90: tank Pressure too low.	Selective Control Valve (SCV) flow set too low.	Repair or replace SCV. See your John Deere dealer.
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.
CCS fan turning on and off while going though the field.	Frame height too high causing the row unit switch to open and close.	Adjust frame height. (See Adjust the Main Frame Height in Preparing the Planter section.)
	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.	See your John Deere dealer.
	Check CCS blower solenoid for magnetism.	Check the solenoids
	Check CCS row unit push-button switch (left center row unit on parallel arms).	Adjust the switch.
		Replace as needed.

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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.

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Symptom	Problem	Solution
	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.
	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.

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Symptom	Problem	Solution
	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.
	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.

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Symptom	Problem	Solution
		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.
	CCS™ tanks empty.	Fill CCS™ tanks.
	Nozzle inserts installed.	Remove nozzle inserts when planting other crops.
Seed damage.	Air volume too high.	Reduce CCS™ tank pressure.
		Add graphite.
	Old, dry seeds.	Use fresh seeds.
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™.)

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Symptom	Problem	Solution
		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.
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.
		Adjust the fan switch of the row unit.
Machine raises slowly.	CCS™ fan is running during raise cycle.	Fan switch of the row unit is not functioning.
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.

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Symptom	Problem	Solution
	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.

NN32476,0000412-19-27MAY21

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™ 4 manual for more information).
	The hydraulic hoses are connected wrong.	Follow the guidelines in Attaching and Detaching section.
	The selective control valves (SCVs) are not assigned.	See the SCV Assignment procedure in SeedStar™ 4 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. (See your John Deere dealer 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%.

NN32476,000040E-19-06MAY21

SeedStar

Symptom	Problem	Solution
Singulation and coefficient of variation are not available.	Indicators disabled when the system limitations are exceeded.	For SeedStar 2—MaxEmerge 5, the functions are only available for target seed rate below 40 seeds per second, considering that speed is limited to 12 km/h (7.5 mph) and the number of row units is 48 rows or fewer. For SeedStar 4—MaxEmerge 5e, the functions are only available for target seed rate up to 40 seeds per second, considering that speed is limited to 12 km/h (7.5 mph) and the number of row units is 48 rows or more.

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Symptom	Problem	Solution
		SeedStar 4—ExactEmerge does not have restriction.

NOTE: Line spacing 0.45 m (17.7 in) with approximate maximum system capacity 266.000 sem/ha.

Line spacing 0.50 m (19.7 in) with approximate maximum system capacity 240.000 sem/ha.

Line spacing 0.76 m (30 in) with approximate maximum system capacity 158.000 sem/ha.

Line spacing 0.90 m (35.4 in) with approximate maximum system capacity 133.000 sem/ha.

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Specifications

Tractor Requirements

NOTE: Type A planters use multiple selective control valves (SCVs) for the vacuum function, while Type B planters use only one SCV for the vacuum function.

DB40 Planters

Minimum Engine Power (MaxEmerge 5) . . . . . 166 kW (222 hp)
Minimum Engine Power (MaxEmerge 5e) . . . . . 201 kW (270 hp)
Minimum Engine Power (ExactEmerge). . . . . 276 kW (370 hp)
Number of Required Selective Control Valves (SCVs)—Type A (MaxEmerge 5) 3
Number of Required Selective Control Valves (SCVs)—Type A (ExactEmerge or MaxEmerge 5e) 4
Number of Required Selective Control Valves (SCVs)—Type B (Max Emerge 5) 4
Number of Required Selective Control Valves (SCVs)—Type B (ExactEmerge or MaxEmerge 5e) 3
SCVs with Detent Feature . . . . . .Yes
SCVs with Flow Control Valve. . . . . .Yes
Minimum Hydraulic Pressure . . . .19 700 kPa (197 bar) (2857 psi)
Maximum Hydraulic Pressure . . . .20 700 kPa (207 bar) (3000 psi)
Drawbar Type . . . . . Drawbar with a Support System
Minimum Drawbar Support Strap Rating . . . . . 3493 kg (7700 lb)

DB50 Planters

Minimum Engine Power (MaxEmerge 5) . . . . . 201 kW (270 hp)
Minimum Engine Power (MaxEmerge 5e) . . . . . 201 kW (270 hp)
Minimum Engine Power (ExactEmerge). . . . . 298 kW (400 hp)
Number of Required Selective Control Valves (SCVs)—Type A (MaxEmerge 5) 4
Number of Required Selective Control Valves (SCVs)—Type A (ExactEmerge or MaxEmerge 5e) 5
Number of Required Selective Control Valves (SCVs)—Type B (MaxEmerge 5) 4
Number of Required Selective Control Valves (SCVs)—Type B (ExactEmerge or MaxEmerge 5e) 3
SCVs with Detent Feature . . . . . .Yes
SCVs with Flow Control Valve. . . . . .Yes
Power Beyond (PB) . . . . . .Yes
AutoTrac . . . . . .Yes
Minimum Hydraulic Pressure . . . .19 700 kPa (197 bar) (2857 psi)
Maximum Hydraulic Pressure . . . .20 700 kPa (207 bar) (3000 psi)
Drawbar Type . . . . . Drawbar with a Support System
Minimum Drawbar Support Strap Rating . . . . . 4536 kg (10 000 lb)

DB74 Planters

Minimum Engine Power (MaxEmerge 5) . . . . . 239 kW (320 hp)
Minimum Engine Power (MaxEmerge 5e) . . . . . 239 kW (320 hp)
Minimum Engine Power (ExactEmerge). . . . . 388 kW (520 hp)
Number of Required Selective Control Valves (SCVs)—Type A (MaxEmerge 5) 5
Number of Required Selective Control Valves (SCVs)—Type A (ExactEmerge or MaxEmerge 5e) 6
Number of Required Selective Control Valves (SCVs)—Type B (MaxEmerge 5) 4
Number of Required Selective Control Valves (SCVs)—Type B (ExactEmerge or MaxEmerge 5e) 3
SCVs with Detent Feature . . . . . .Yes
SCVs with Flow Control Valve. . . . . .Yes
Power Beyond (PB) . . . . . .Yes
AutoTrac . . . . . .Yes
Minimum Hydraulic Pressure . . . .19 700 kPa (197 bar) (2857 psi)
Maximum Hydraulic Pressure . . . .20 700 kPa (207 bar) (3000 psi)
Drawbar Type . . . . . Drawbar with a Support System
Minimum Drawbar Support Strap Rating . . . . . 5624 kg (12 399 lb)

DB90 Planters

Minimum Engine Power (MaxEmerge 5) . . . . . 343 kW (460 hp)
Minimum Engine Power (MaxEmerge 5e) . . . . . 343 kW (460 hp)
Number of Required Selective Control Valves (SCVs) (MaxEmerge 5) 5
Number of Required Selective Control Valves (SCVs) (MaxEmerge 5e) 4
SCVs with Detent Feature . . . . . .Yes
SCVs with Flow Control Valve. . . . . .Yes
Power Beyond (PB) . . . . . .Yes
AutoTrac . . . . . .Yes
Minimum Hydraulic Pressure . . . .19 700 kPa (197 bar) (2857 psi)
Maximum Hydraulic Pressure . . . .20 700 kPa (207 bar) (3000 psi)
Drawbar Type . . . . . Drawbar with a Support System
Minimum Drawbar Support Strap Rating . . . . . 8200 kg (18 078 lb)

Required Tractor Hydraulic System Specifications—ExactEmerge and MaxEmerge 5e—Type A

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB40 DB50 DB74	SCV1	Lift/Central Commodity System (CCS)/ Compressor	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV2	Wings (fold/unfold)	60.0 (15.8)	Intermittent
	SCV3	Vacuum	18.6 (5.0)	Continuous
	SCV4	Vacuum	18.6 (5.0)	Continuous
DB50 DB74	SCV5	Vacuum	18.6 (5.0)	Continuous

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB74	SCV6	Vacuum	18.6 (5.0)	Continuous

Required Tractor Hydraulic System Specifications—ExactEmerge and MaxEmerge 5e—Type B

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB40 DB50 DB74	SCV1	Lift	60.0 (15.8)	Intermittent
	SCV2	Wings (fold/unfold)/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV3	Vacuum	37.2 (9.8)/55.8 (14.7)/74.4 (19.6)	Continuous
	SCV4 or Power Beyond (PB)	Compressor	19.2 (5.1)	Intermittent

Required Tractor Hydraulic System Specifications—Only DB90 MaxEmerge 5e

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB90	SCV1	Lift	60.0 (15.8)	Intermittent
	SCV2	Wings (fold/unfold)/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV3	Vacuum	74.4 (19.7)	Continuous
	SCV4 or Power Beyond (PB)	Compressor	19.2 (5.1)	Intermittent

Required Tractor Hydraulic System Specifications—Only DB90 MaxEmerge 5

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB90	SCV1	Lift	60.0 (15.8)	Intermittent
	SCV2	Wings (fold/unfold)/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV3	Vacuum	74.4 (19.7)	Continuous
	SCV4	Header Cylinder	20 (5.3)	Intermittent
	SCV5 or Power Beyond (PB)	Variable Rate Drive (VRD)	31.5 (8.3)	Continuous

Required Tractor Hydraulic System Specifications—MaxEmerge 5—Type A

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB40	SCV1	Lift/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV2	Wings (fold/unfold)	60.0 (15.8)	Intermittent
	SCV3	Vacuum	37.2 (9.8)	Continuous
	SCV4 or Power Beyond (PB)	Variable Rate Drive (VRD) Motor	31.5 (8.3)	Continuous
DB50	SCV1	Lift/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
	SCV2	Wings (fold/unfold)	60.0 (15.8)	Intermittent
	SCV3	Vacuum	37.2 (9.8)	Continuous
	SCV4	Vacuum	18.6 (5.0)	Continuous
	SCV5 or Power Beyond (PB)	Variable Rate Drive (VRD) Motor	31.5 (8.3)	Continuous
DB74	SCV1	Lift/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV2	Wings (fold/unfold)	60.0 (15.8)	Intermittent
	SCV3	Header Cylinder	20 (5.2)	Intermittent
	SCV4	Vacuum	37.2 (9.8)	Continuous
	SCV5	Vacuum	37.2 (9.8)	Continuous
	SCV6 or Power Beyond (PB)	Variable Rate Drive (VRD) Motor	31.5 (8.3)	Continuous

Required Tractor Hydraulic System Specifications—MaxEmerge 5—Type B

Models	Selective Control Valve (SCV)	SCV Function	Minimum Flow Rate Available per Selective Control Valve (SCV) L/min (gal/min)	Rate
DB40	SCV1	Lift	60.0 (15.8)	Intermittent
	SCV2	Wings (fold/unfold)/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV3	Vacuum	37.2 (9.8)	Continuous
	SCV4	Variable Rate Drive (VRD) Motor	31.5 (8.3)	Continuous
DB50	SCV1	Lift	60.0 (15.8)	Intermittent
	SCV2	Wings (fold/unfold)/Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV3	Vacuum	55.8 (14.7)	Continuous
	SCV4	Variable Rate Drive (VRD)	31.5 (8.3)	Continuous
DB74	SCV1	Lift	60.0 (15.8)	Intermittent
	SCV2	Wings (fold/unfold)/ Central Commodity System (CCS)	60.0 (15.8)/26.4 (7.0)	Intermittent/Continuous
	SCV3	Vacuum	74.4 (19.6)	Intermittent
	SCV4	Header Cylinder	20 (5.2)	Intermittent
	SCV5 or Power Beyond (PB)	Variable Rate Drive (VRD) Motor	31.5 (8.3)	Continuous

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Frame Specifications

DB40 Planters

Frame Type . . . . . .Three-Section, Front-Fold
Wheel Modules Cylinders 4
Tongue Cylinders 1
Folding Cylinders 2
Latch Cylinders 1

DB50 Planters

Frame Type . . . . . .Three-Section, Front-Fold
Wheel Modules Cylinders 4
Tongue Cylinders 1
Folding Cylinders 2
Latch Cylinders 1

DB74 Planters

Frame Type . . . . . .Three-Section, Front-Fold
Wheel Modules Cylinders 4

Tongue Cylinders	1
Folding Cylinders	2
Latch Cylinders	1

DB90 Planters

Frame Type	Five-Section, Front-Fold
Wheel Modules Cylinders	6
Tongue Cylinders	1
Folding Cylinders	2
Latch Cylinders	1

LS87647,00007B7-19-11FEB20

Rows and Spacing Specifications

DB40 Planters

Option 1	14 rows of 90 cm (35.4 in)
Option 2	16 rows of 76 cm (29.9 in)
Option 3	23 rows of 50 cm (19.6 in)
Option 4	23 rows of 52.5 cm (20.7 in)
Option 5	25 rows of 45 cm (17.7 in)
Option 6	27 rows of 45 cm (17.7 in)

DB50 Planters

Option 1	16 rows of 90 cm (35.4 in)
Option 2	20 rows of 76 cm (29.9 in)
Option 3	29 rows of 52.5 cm (20.7 in)
Option 4	31 rows of 50 cm (19.6 in)
Option 5	32 rows of 45 cm (17.7 in)
Option 6	35 rows of 45 cm (17.7 in)

DB74 Planters

Option 1	24 rows of 90 cm (35.4 in)
Option 2	30 rows of 76 cm (29.9 in)
Option 3	43 rows of 52.5 cm (20.7 in)
Option 4	45 rows of 50 cm (19.6 in)
Option 5	48 rows of 45 cm (17.7 in)
Option 6	49 rows of 45 cm (17.7 in)

DB90 Planters

Option 1	31 rows of 90 cm (35.4 in)
Option 2	36 rows of 76 cm (29.9 in)
Option 3	51 rows of 52.5 cm (20.7 in)
Option 4	55 rows of 50 cm (19.6 in)
Option 5	61 rows of 45 cm (17.7 in)

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Tire Specification

DB40 Planters

Transport Tires	four 400/55R22.5
Drive/Wing Tires	four 330/55R16.5

DB50 Planters

Transport Tires	four 400/55R22.5
Drive/Wing Tires	four 330/55R16.5

DB74 Planters

Transport Tires	four 600/40R22.5
Drive/Wing Tires	four 330/55R16.5

DB90 Planters

Transport Tires	four 600/40R22.5
Drive/Wing Tires	eight 330/55R16.5

LS87647,00007B9-19-05MAR20

Planting Unit Specifications

Planter Model	DB40	DB50	DB74	DB90
CCS™[a] Metering System	Vacuum Meters			
Vacuum Blowers	2	3	4	
Drives	3 Hydraulic Motors for Variable Rate Drive (VRD)			
Row Pressure System	Heavy-Duty Springs for MaxEmerge™ 5			
	Pneumatic Downforce for ExactEmerge™ and MaxEmerge™ 5e			

CCS is a trademark of Deere & Company
MaxEmerge is a trademark of Deere & Company
ExactEmerge is a trademark of Deere & Company
[a]*Central Commodity System*

N8XR12J,00006D4-19-06APR22

Estimated Weights—Empty

DB40 Planter

Empty Weight . . . . . .14 144 kg (31 182 lb)

DB50 Planter

50 cm spacing . . . . . 15 805 kg (34 844 lb)
45 cm spacing . . . . . 15 980 kg (35 230 lb)

DB74 Planter

50 cm spacing . . . . . 20 733 kg (45 708 lb)
45 cm spacing . . . . . 21 279 kg (46 912 lb)

DB90 Planter

50 cm spacing . . . . . 28 200 kg (62 170 lb)
45 cm spacing . . . . . 29 500 kg (65 036 lb)

LS87647,00007BC-19-11FEB20

Dimensions

DB40 Planters

Work Width . . . . . 12.35 m (486.2 in)
Transport Width . . . . . 6.20 m (244.0 in)
Transport Length . . . . . 12.15 m (478.3 in)

DB50 Planters

Work Width . . . . . 15.40 m (606.3 in) to 17.7 m (618.1 in)
Transport Width . . . . . 6.20 m (244.0 in)
Transport Length . . . . . 12.50 m (492.0 in)

DB74 Planters

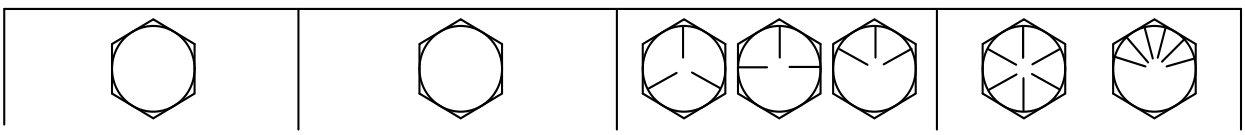
Work Width . . . . . 22.50 m (885.8 in)
Transport Width . . . . . 6.20 m (244.0 in)
Transport Length . . . . . 16.20 m (637.8 in)

DB90 Planters

Work Width . . . . . 27.40 m (1078.7 in)
Transport Width . . . . . 6.20 m (244.0 in)
Transport Length . . . . . 18.30 m (720.5 in)

N8XR12J,00006D5-19-31MAR22

Unified Inch Bolt and Screw Torque Values



TS1671—UN—01MAY03

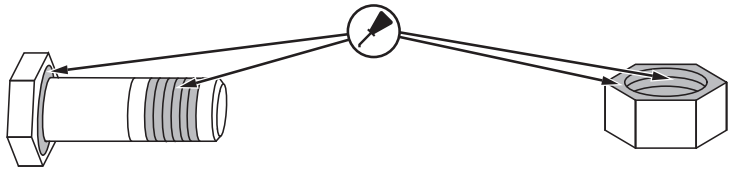
Bolt or Screw Size	SAE Grade 1[a]				SAE Grade 2[b]				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]		Hex Head[c]		Flange Head[d]	
	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in	N·m	lb·in
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

Bolt or 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·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.
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.

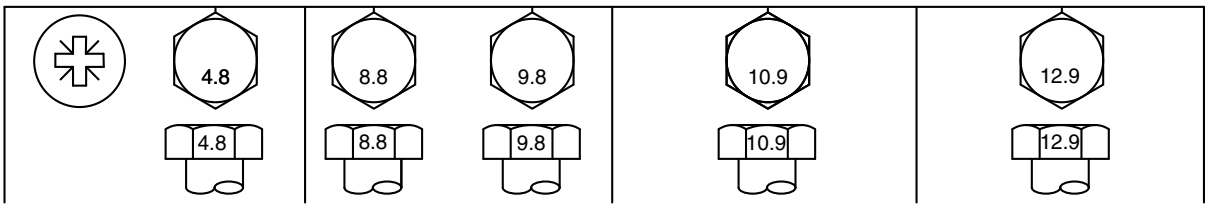


TS1741—UN—22MAY18

[a]*Grade 1 applies for hex cap screws over 6 in (152 mm) long, and for all other types of bolts and screws of any length.*
[b]*Grade 2 applies for hex cap screws (not hex bolts) up to 6 in (152 mm) long.*
[c]*Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.*
[d]*Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.*

DX,TORQ1-19-09MAY22

Metric Bolt and Screw Torque Values



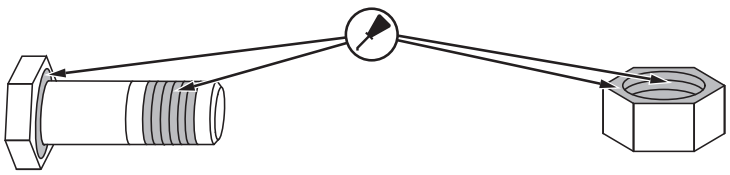
TS1742—UN—31MAY18

Bolt or 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

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.

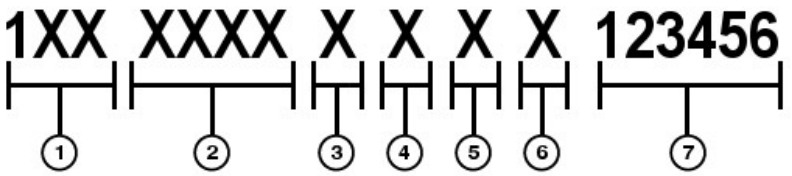


TS1741—UN—22MAY18

[a]Hex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts.
[b]Hex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-09MAY22

Interpreting Machine Serial Number



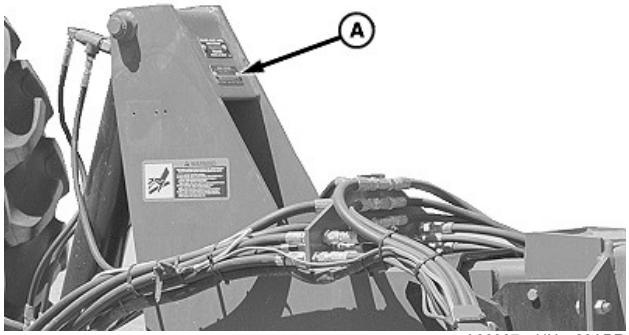
H105725—UN—22AUG12

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 NX - 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 Fabriek 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 Zweibrucken 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

ER40675,0000BB4-19-07FEB19

Machine Identification Plate



A66987—UN—28APR10

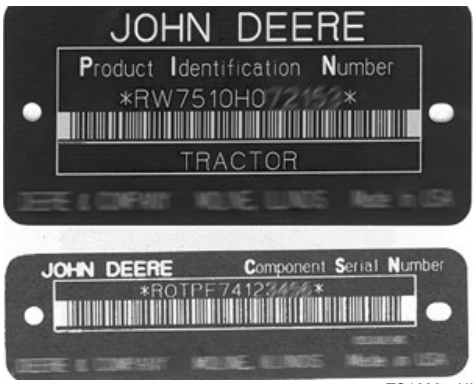
A—Serial Number Plate

The serial number plate (A) is on the main frame. Record in the spaces provided.

Machine Model	
Serial Number	

OU90500,000061E-19-05APR16

Keep Proof of Ownership

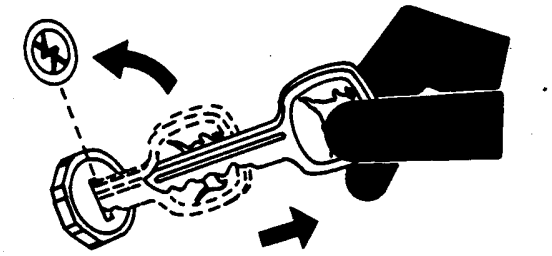


TS1680—UN—09DEC03

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 service technician or dealer.

Always keep all charts updated to create a historical record of all service and maintenance done on your machine. Such information can help dealers with better troubleshooting, and even add more value to your machine in a sale.

KK69021,00009B2-19-27MAY21

Service—As Required

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Adjust the row unit sensor.
- Clean the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
- Clean the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
- Adjust the depth gauge wheels.
- Install depth gauge wheel bearings (if equipped with shielded bearings)
- Inspect the scrapers of the double disk blade.
- Inspect and adjust the double disk blade.
- Install double disk blade bearings (if equipped with shielded bearings)
- Install closing wheel bearings (if equipped with shielded bearings)
- Clean seed manifold.
- Clean seed tube (only for MaxEmerge™ 5 and MaxEmerge™ 5e).
- Clean seed meter drive.
- Clean row unit hopper screen (only for MaxEmerge™ 5 and MaxEmerge™ 5e).
- Replace BrushBelt™ (only for ExactEmerge™).
- Replace or clean the seed guide (only for ExactEmerge™).
- Replace meter motor and Brushelt™ 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™ 5 and MaxEmerge™ 5e).

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MaxEmerge is a trademark of Deere & Company

BrushBelt is a trademark of Deere & Company

- 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™ 5 and MaxEmerge™ 5e).
- Clean the filter of the pneumatic downforce (PDF) compressor (if equipped).
- Replace the connectors of the pneumatic downforce (PDF) system (if equipped).
- Replace the air springs of the pneumatic downforce (PDF) system (if equipped).
- Clean the hose of the vacuum pressure sensor.
- Clean the vacuum system.
- Clean central commodity system (CCS™) manifold.
- Clean central commodity system (CCS™) tank level sensors.
- Zero the central commodity system (CCS™) fan pressure gauge.

K2F379Y,000064F-19-30MAR22

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Service—Start of Season

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check the electrical routing.
- Clean the electronic power take-off (EPTO) Alternator (only for MaxEmerge™ 5 and MaxEmerge™ 5e).
- Lubricate the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
- Change the gear case oil of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
- Check the filter of the variable rate drive system (only for MaxEmerge™ 5).
- Check torque of the wheel screws.
- Check torque of the U-bolt.
- Check torque of the parallel arm screws.
- Lubricate the variable rate drive roller chain (only for MaxEmerge™ 5).
- Check the torque of the screws of the coulter support.
- Check torque of the coulter cast bracket.
- Lubricate the coulter pivot arms.
- Lubricate the coulter adjustment spring (only for mechanical spring downforce).
- Inspect the scrapers of the double disk blade.
- Clean seed manifold.
- Clean seed tube (only for MaxEmerge™ 5 and MaxEmerge™ 5e).
- Adjust the meter latch (only for ExactEmerge™).
- Check the cartridge guard (only for ExactEmerge™).
- Drain the tank of the pneumatic downforce (PDF) system (if equipped).
- Change the oil of the pneumatic downforce (PDF) compressor (if equipped).
- Check the pressure sensors of the pneumatic downforce (PDF) system (if equipped).
- Replace the filter of the pneumatic downforce (PDF) compressor (if equipped).
- Check for leaks on connectors of the pneumatic downforce (PDF) system (if equipped).
- Check for leaks on the air springs of the pneumatic downforce (PDF) system (if equipped).
- Clean the hose of the vacuum pressure sensor.
- Check central commodity system (CCS™) sensor.
- Check routing of central commodity system (CCS™) hoses.
- Clean central commodity system (CCS™) manifold.

N8XR12J,00006D6-19-25MAR22

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ExactEmerge is a trademark of Deere & Company

CCS is a trademark of Deere & Company

Service—First 10 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check torque of the wheel screws.
- Check torque of the U-bolt.
- Check torque of the parallel arm screws.
- Check the torque of the screws of the coulter support.
- Check torque of the coulter cast bracket.
- Check torque of the depth gauge wheel pivot arm.

KK69021,00009B5-19-06MAY21

Service—First 20 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Change the oil of the pneumatic downforce (PDF) compressor (if equipped).

KK69021,00009B6-19-06MAY21

Service—Daily or Every 10 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check the filter of the variable rate drive system (only for 5).
- Check torque of the center wheel bracket.
- Lubricate the wing wheel pivots.
- Lubricate the frame bearing.
- Lubricate the wing fold pivots.
- Lubricate the wing flex pivots.
- Drain the tank of the pneumatic downforce (PDF) system (if equipped).
- Check the oil level of the pneumatic downforce (PDF) compressor (if equipped).
- Inspect vacuum motor.

ph5u3bx,1715279743564-19-09MAY24

Service—Every 50 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Lubricate the lift cylinders.
- Lubricate the fold cylinders.
- Lubricate the hitch link.
- Lubricate the front hitch pivots.
- Lubricate the rear hitch pivots.
- Lubricate the wishbone pivot.
- Lubricate the rear center hitch roller.
- Lubricate vacuum seal and seed disk.
- Clean the filter of the pneumatic downforce (PDF) compressor (if equipped).
- Clean the vacuum system.

KK69021,00009B8-19-06MAY21

Service—Every 100 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Lubricate the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge and MaxEmerge 5e).
- Clean the gear case of the electronic power take-off (EPTO) alternator (only for ExactEmerge and MaxEmerge 5e).
- Check the gear case oil level of the electronic power take-off (EPTO) alternator (only for ExactEmerge and 5e).
- Check torque of the wheel screws.
- Clean cartridge.
- Replace the filter of the pneumatic downforce (PDF) compressor (if equipped).
- Lubricate the depth gauge wheel arms.

ph5u3bx,1715273953147-19-09MAY24

Service—Every 200 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Change the gear case oil of the electronic power take-off (EPTO) alternator (only for ExactEmerge™ and MaxEmerge™ 5e).
- Check torque of bearing support structure.
- Check torque of the pillow block central support nuts.
- Change the oil of the pneumatic downforce (PDF) compressor (if equipped).

N8XR12J,00006D7-19-25MAR22

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Service—Middle of Season

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Check the filter of the variable rate drive system (only for MaxEmerge™ 5).
- Check torque of the U-bolt.
- Check torque of the parallel arm screws.
- Check the torque of the screws of the coulter support.
- Check torque of the coulter cast bracket.
- Check for leaks on connectors of the pneumatic downforce (PDF) system (if equipped).
- Check for leaks on the air springs of the pneumatic downforce (PDF) system (if equipped).

KK69021,00009BB-19-06MAY21

MaxEmerge is a trademark of Deere & Company

Service—Every 400 Hours or End of Season

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Lubricate the variable rate drive roller chain (only for MaxEmerge™ 5).
- Check double disk blade bearings.
- Inspect and adjust the double disk blade.
- Inspect the scrapers of the double disk blade.
- Check depth gauge wheel bearings.
- Check closing wheel bearings.
- Clean seed meter.
- Inspect and service the seed meter (only for MaxEmerge™ and MaxEmerge™ 5e).
- Inspect and service the seed meter (only for ExactEmerge™).
- Adjust the meter latch (only for ExactEmerge™).
- Inspect and clean vacuum impeller and housing.
- Lubricate the center wheel hub.
- Check central commodity system (CCS™) blower gauge filter.

N8XR12J,00006D8-19-05APR22

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CCS is a trademark of Deere & Company

Service—Every 1500 Hours

Date	Hour	Signature	Date	Hour	Signature	Date	Hour	Signature

- Replace the coulter joint grease.

KK69021,00009BD-19-06MAY21

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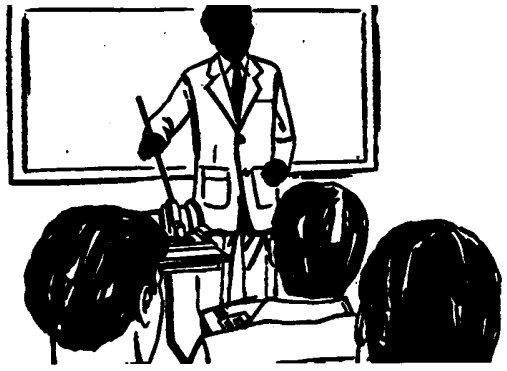


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