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DN456 and DN485 Dry Spinner Spreader

OPERATOR'S MANUAL

DN456 and DN485 Dry Spinner Spreader

OM312418 ISSUE H5 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:

⚠ WARNING

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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Des Moines Works

Introduction

Foreword



N11112—UN—29APR14

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 of forward travel.

WRITE PRODUCT IDENTIFICATION NUMBERS (PIN) in the Specification or Identification Numbers 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 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. Installing unauthorized dry spreader box, or modifying John Deere authorized box to exceed design weight limitations will also void warranty.

The DN456 and DN485 are hopper type spreaders. The DN456 (when installed on the R4030 and R4038) and DN485 are intended for spreading free flowing granular agricultural materials, such as chemical fertilizers and gypsum ("Intended Use"). When installed on the R4045 the DN456 can be used to apply agricultural limestone. The DN456 is **NOT** intended to spread agricultural limestone when installed on the R4030 or R4038. A second product bin is available for the DN456 and DN485. It allows you to spread two different types of fertilizer individually or combined. The second product bin is not intended to spread agricultural limestone. The spreaders are designed for use on high-clearance post emergence vehicle—the John Deere 4 series. The application of free flowing granular agricultural materials must be done according to the manufacturers' instruction and legal user regulations. Intended Use also implies the observance of all user and maintenance instructions prescribed by the manufacturer. Any other use is regarded as noncompliant with its purpose including:

- improper use of agrochemicals (herbicides, fungicides, insecticides, growth regulators) and liquid fertilizers
- noncompliance with instructions issued by the manufacturers of fertilizers and crop protection chemicals
- noncompliance with legal requirements applicable to the use of fertilizers and crop protection chemicals including their combination with other chemicals

Continued on next page

CS12167,0000491 -19-27MAR14-1/2

THIS Spreader MUST ONLY be used and serviced by authorized persons who are informed about the hazards and correct operation of the machine. The relevant safety regulations and all other generally accepted safety, technical, medical and traffic instructions must be observed.

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.

CS12167,0000491 -19-27MAR14-2/2

Predelivery

After the machine has been completely assembled, inspect to verify it is in good running order before delivering to the customer. The following checklist is a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustment is made.

- ☐ SMV emblem and reflectors installed.
- ☐ Verify all safety decals are in place. (See Safety Signs Location section in this manual for decal locations.)
- ☐ Verify correct speed limit decal is installed for your location.
- ☐ All fluid levels have been checked. All grease fittings have been lubricated.
- ☐ Tires and suspension are properly inflated. Tighten wheel bolts to specified torque.
- ☐ Perform Spreader Check Test with box empty. Manipulate settings to verify that high and low belt speed

(manual) and high and low spinner speed are within specifications. (See Spreader Check Test in Spreadstar section of Operator's Manual.)

- ☐ Verify proper belt tracking and tension. (See Conveyor Belt Maintenance and Adjustment—As Required in Lubrication and Maintenance section of this manual.)
- ☐ Hydraulic systems operate properly and do not leak.
- ☐ Any parts scratched in shipment have been touched up with paint.
- ☐ Factory made entries in Spreadstar monitor have been confirmed and/or reset to agree with calibration values.
- ☐ This machine has been thoroughly checked and to the best of my knowledge is ready for delivery to the customer.

Signed: _____

Date: _____

CS12167,0000492 -19-15OCT13-1/1

Delivery

At the time the machine is delivered, the following checklist is a reminder of information which should be conveyed directly to the customer. Check off each item as it is fully explained to the customer.

- ☐ Tell the customer to use the proper tools.
- ☐ Explain to the customer that the life expectancy of this or any other machine depends on regular lubrication as directed in the Operator's Manual.
- ☐ Give the Operator's Manual to the customer and explain all operating adjustments.
- ☐ Instruct operator to verify proper belt tracking and tension daily. (See Conveyor Belt Maintenance and Adjustment—As Required in Lubrication and Maintenance section of this manual.)
- ☐ Refer the customer to the Spread Pattern section of the Operator's Manual. Instruct them to perform the tests shown before spreading a new product.

- ☐ Make the customer aware of all the safety precautions that must be exercised while using this machine.

- ☐ When the machine is transported on a road or highway at night or during the day, lights or devices should be used for adequate warning to operators of other vehicles. In this regard, tell customer to check local governmental regulations.

- ☐ To the best of my knowledge, this machine has been delivered ready for field use and the customer has been fully informed as to proper care and operation.

Signed: _____

Date: _____

CS12167,0000493 -19-15OCT13-1/1

After-Sale

The following is a suggested list of items to be checked at a dealer-customer mutually agreeable time during the first operating season, usually after 50 to 100 hours of operation.

- ☐ Check with the customer as to the performance of the machine. Make certain the proper operating adjustments are understood.
- ☐ If possible, operate the machine to see that it is functioning properly.
- ☐ Verify proper belt tracking and tension. (See Conveyor Belt Maintenance and Adjustment—As Required in Lubrication and Maintenance section of this manual.)

- ☐ Go over entire machine for loose or missing hardware.
- ☐ Check for broken or damaged parts.
- ☐ Ask the customer if the recommended periodic lubrication has been performed.
- ☐ Review the Operator's Manual with the customer and stress the importance of proper lubrication and safety precautions.

Signed: _____

Date: _____

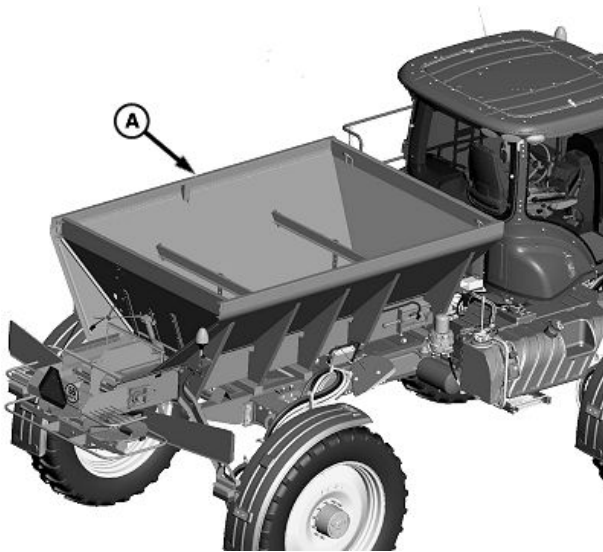
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Owner Register

Name_____	Model Number_____
Address_____	Serial Number_____
City_____	Date Purchased_____
State_____	

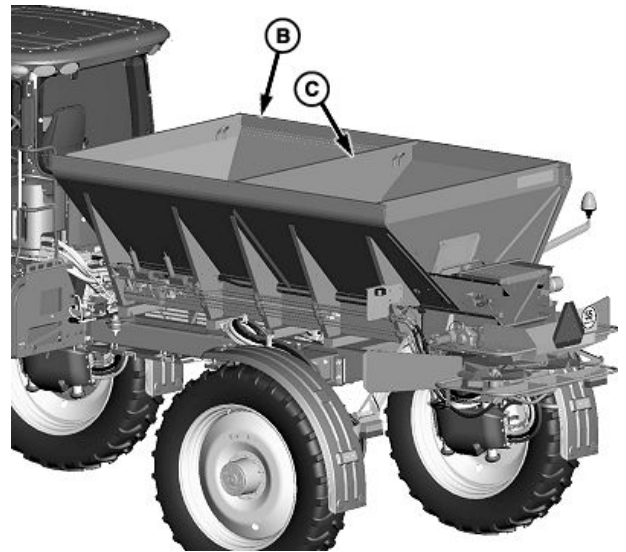
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Component Identification



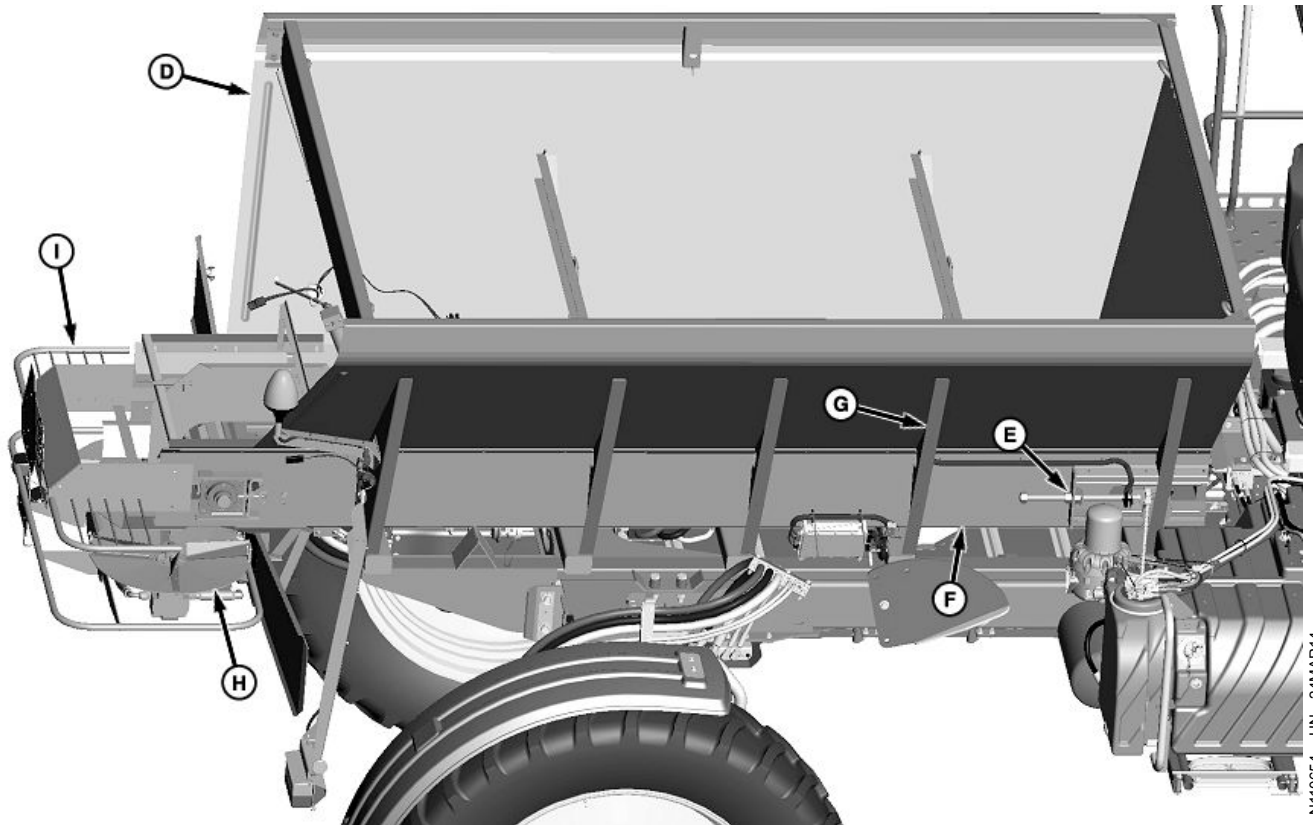
Single Product Spreader

N110819—UN—24MAR14



Dual Product Spreader

N110820—UN—24MAR14



N110654—UN—24MAR14

Spreader Box Components (Side View)

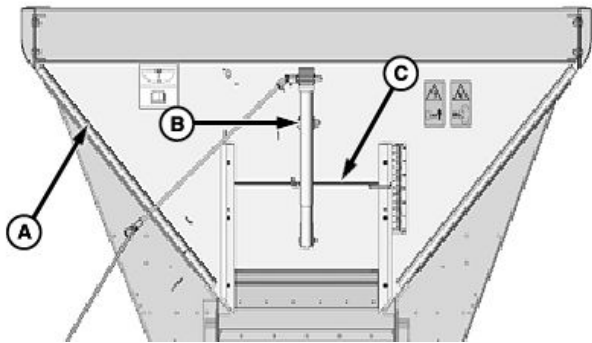
A—Single Product Spreader
B—Dual Product Spreader

C—Second Product Bin
D—Main Hopper
E—Belt/Chain Tension Adjustment

F—Sill
G—Stake
H—Spinner Assembly
I—Spinner Guard

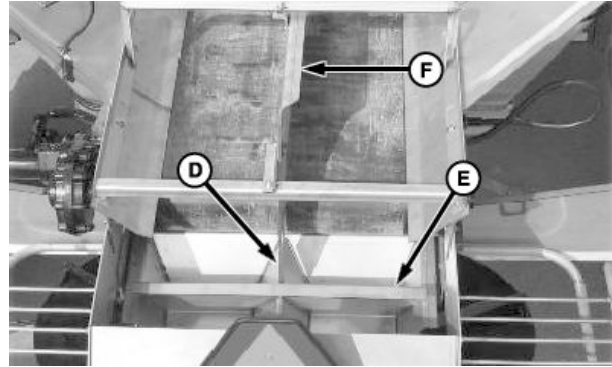
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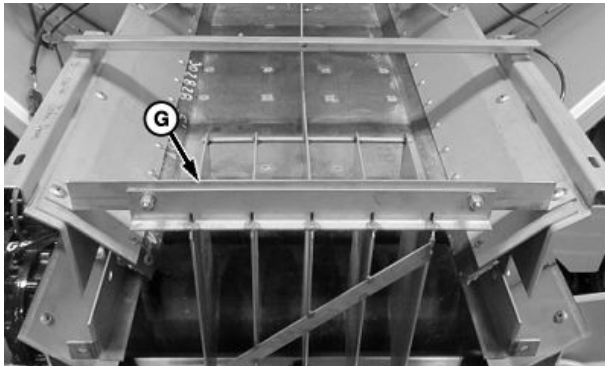
Spreader Box Components (Rear View)

N98633 —UN—23MAY12



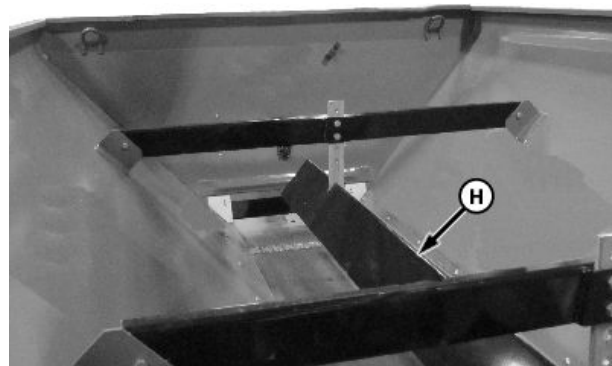
Material Divider

N98634 —UN—23MAY12



Second Product Bin Hillside Divider (Five Finger Divider)

N103527 —UN—26APR13



Inverted V

N101303 —UN—18DEC12

A—Removable Endgate
B—Feedgate Jack
C—Feedgate

D—Material Divider
E—Deflector
F—Hillside Divder (Single Bin)

G—Second Product Bin Hillside Divider (Five Finger Divider)
H—Inverted V

CS12167.00004B5 -19-05MAR14-2/2

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Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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A John Deere ILLUSTRATION™ Manual

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Safety

Recognize Safety Information

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 -19-29SEP98-1/1

T81389 —UN—28JUN13

Understand Signal Words

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.

 **DANGER**

 **WARNING**

 **CAUTION**

DX,SIGNAL -19-03MAR93-1/1

TS187 —19—30SEP88

Follow Safety Instructions

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 -19-16JUN09-1/1

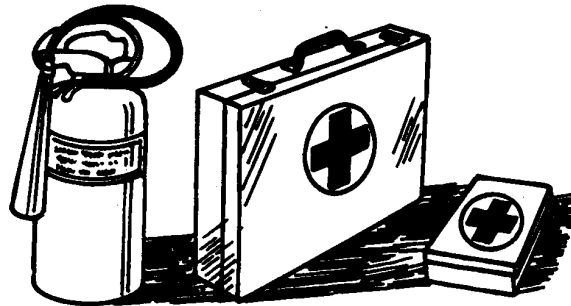
TS201 —UN—15APR13

Prepare for Emergencies

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.



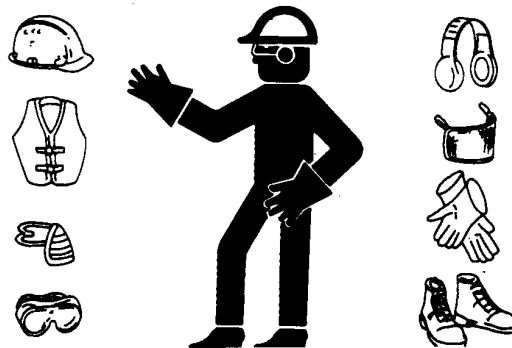
TS291 —UN—15APR13

DX,FIRE2 -19-03MAR93-1/1

Wear Protective Clothing

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.



TS206 —UN—15APR13

DX,WEAR2 -19-03MAR93-1/1

Protect Against Noise

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



TS207 —UN—23AUG88

DX,NOISE -19-03MAR93-1/1

Practice Safe Maintenance

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 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.



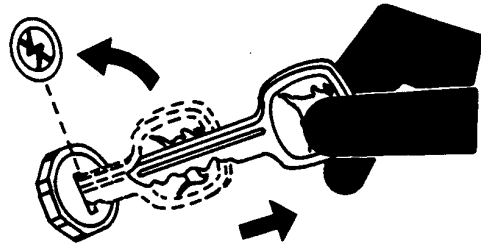
TS218 —UN—23AUG88

DX,SERV -19-17FEB99-1/1

Park Machine Safely

Before working on the machine:

- Park machine on level surface
- Shut off conveyor and spinner drives
- Stop the engine and remove the key
- Hang a "DO NOT OPERATE" tag in operator station.
- Disconnect the battery ground strap
- Wait until all moving parts have stopped



TS230 —UN—24MAY89

OUO6092,000079F -19-29FEB12-1/1

Remove Paint Before Welding or Heating

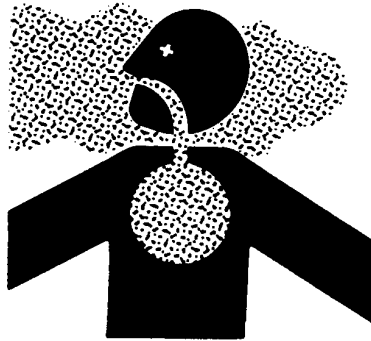
Avoid potentially toxic fumes and dust.

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 -19-24JUL02-1/1

TS220 —UN—15APR13

Avoid Heating Near Pressurized Fluid Lines

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 -19-10DEC04-1/1

TS953 —UN—15MAY90

Avoid High-Pressure Fluids

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.

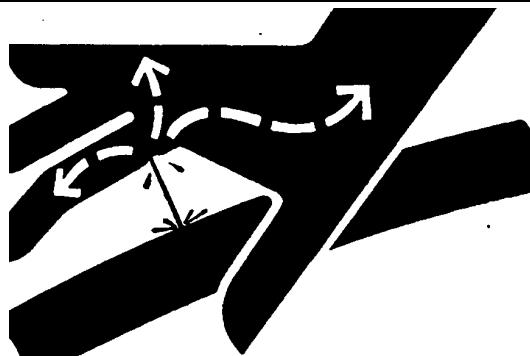
Replace worn or damaged hose assemblies immediately with John Deere approved replacement parts.

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 -19-12OCT11-1/1

X9811 —UN—23AUG88

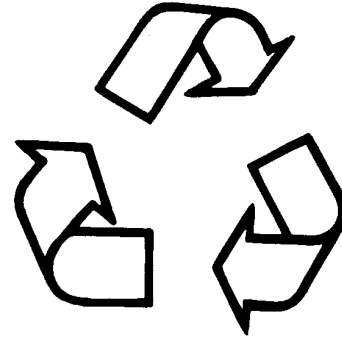
Dispose of Waste Properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.



Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

DX,DRAIN -19-03MAR93-1/1

TS1133—UN—15APR13

Handle Chemical Products Safely

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with John Deere equipment include such items as lubricants, coolants, paints, and adhesives.

A Material Safety Data Sheet (MSDS) provides specific details on chemical products: physical and health hazards, safety procedures, and emergency response techniques.

Check the MSDS before you start any job using a hazardous chemical. That way you will know exactly what the risks are and how to do the job safely. Then follow procedures and recommended equipment.

(See your John Deere dealer for MSDS's on chemical products used with John Deere equipment.)



DX,MSDS,NA -19-03MAR93-1/1

TS1132—UN—15APR13

Service Spreader Equipment Safely

⚠ CAUTION: Treat all chemicals with great caution. DO NOT take chances. When in doubt, proceed as though contamination is present.

- Wear appropriate personal protective equipment (see Handle Agricultural Chemicals Safely in this section)
- Clean vehicle (see Clean Vehicle of Hazardous Chemicals, Including Pesticide in this section)

Before performing any service activity:

OUC6092,0000799 -19-28FEB12-1/1

Use Proper Tools

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.



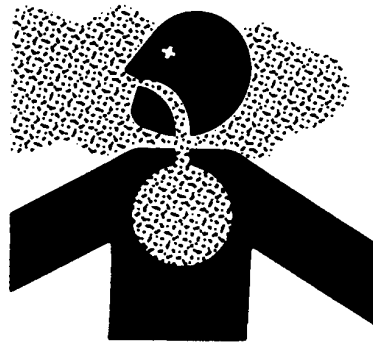
TS779 —UN—08NOV89

DX,REPAIR -19-17FEB99-1/1

Work In Ventilated Area

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



TS220 —UN—15APR13

DX,AIR -19-17FEB99-1/1

Handling Batteries Safely

Battery gas can explode. Keep sparks and flames away from batteries. Use a flashlight to check battery electrolyte level.

Never check battery charge by placing a metal object across the posts. Use a voltmeter or hydrometer.

Always remove grounded (-) battery clamp first and replace grounded clamp last.

Sulfuric acid in battery electrolyte is poisonous and strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid hazards by:

- Filling batteries in a well-ventilated area
- Wearing eye protection and rubber gloves
- Avoiding use of air pressure to clean batteries
- Avoiding breathing fumes when electrolyte is added
- Avoiding spilling or dripping electrolyte
- Using correct battery booster or charger procedure.

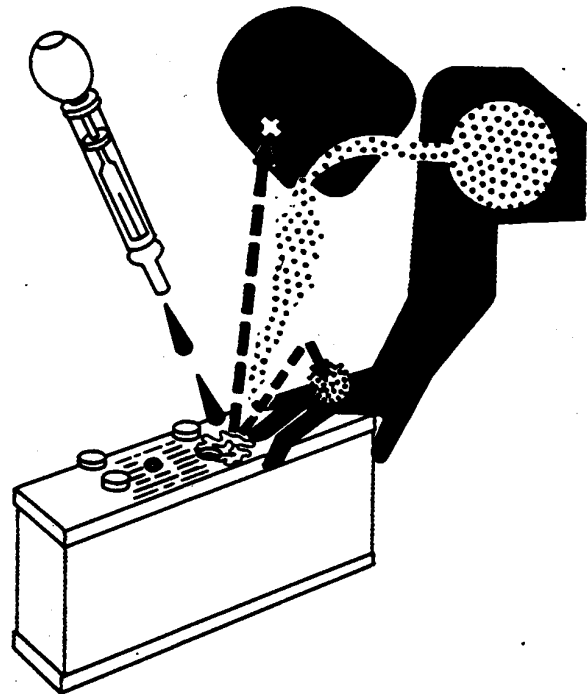
If acid is spilled on skin or in eyes:

1. Flush skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush eyes with water for 15—30 minutes. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2 L (2 qt.).
3. Get medical attention immediately.

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. **Wash hands after handling.**



TS204 —UN—15APR13

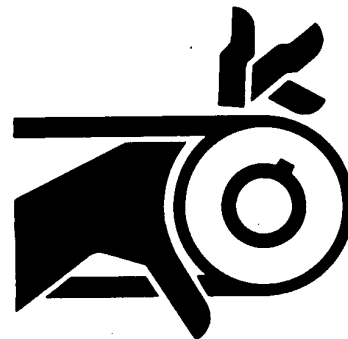
TS203 —UN—23AUG88

DX,WW,BATTERIES -19-02DEC10-1/1

Service Drive Belts Safely

When servicing drive belts always observe these precautions:

- Avoid serious injury from hand or arm entanglement. Never attempt to clean, check or adjust belts while the machine is running. Always shut off the engine, set the parking brake and remove the key.
- Do not attempt to clean belts with flammable cleaning solvents.

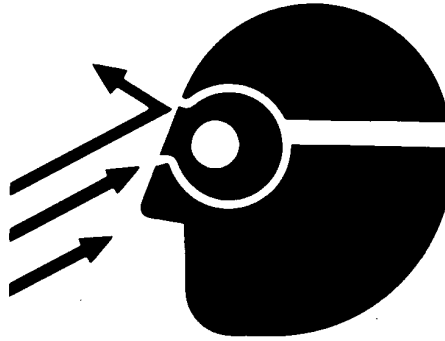


TS285 —UN—23AUG88

OUC6043,00015E3 -19-24MAY04-1/1

Using Compressed Air For Cleaning

⚠ CAUTION: Reduce compressed air to 210 kPa (2 bar) (30 psi) or less when using for cleaning purposes. Clear area of bystanders, guard against flying debris, and wear personnel protective equipment, including eye protection.



TS286 —UN—23AUG88

AG,OUO6043,83 -19-28JUL99-1/1

Maintain a Safety Area Around the Machine

Machine movements and parts in motion can cause serious injury. Spinners cannot be completely shielded

due to their function. Keep away from spinners while they are turning.

OUO6092,00007A2 -19-28FEB12-1/1

Working Area

The working area is defined as follows:

- an area of 1 meter around the machine for lubrication, maintenance, and adjustment of the spreading unit and cleaning of the spreading apparatus
- the seat on the machine from where the crop protection work is carried out

Danger zones are taken to mean:

- the working area of the operator in which adjustment and cleaning of the spreader takes place
- the “manoeuvring zone” of the components of the spreader, and in particular a 1 meter zone around the machine as a whole and the area required to adjust the spreader and the area capable of being spread by the product coming from the spinners

OUO6092,000079A -19-29FEB12-1/1

Avoid Backover Accidents

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.



PC10857XW —UN—15APR13

OUO6092,00007A3 -19-28FEB12-1/1

Before Operating

Become familiar with operator's manual, machine decals, and Safety section of this manual.

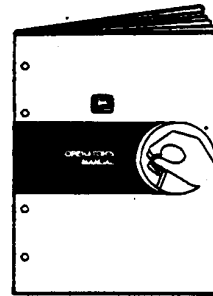
Remove foreign objects from machine.

Become familiar with all controls effecting machine functions.

Make sure everyone is clear of the machine. Never allow riders on the machine or near machine while it is running.

Inspect machine for loose, missing or damaged hardware and parts. Replace any missing or damaged parts with proper specification items.

Verify shields and guards are in place and in good condition before starting.



OUO6092,00007A0 -19-28FEB12-1/1

E23482 —UN—08MAY89

Operate Safely

Always check general operating safety of the machine before using.

Before operating machine always check immediate vicinity of machine for people and obstructions. Ensure adequate visibility.

Operate vehicle only when all guards are fitted and in their correct position.

DO NOT start engine with multifunction control handle engaged.

DO NOT operate close to a ditch or creek.

Avoid distractions such as reading, eating, or operating personal electronics that take your attention away while operating the unit.

Always come to a complete stop before reversing directions.

Drive slowly over rough ground.

Slow down when turning.

Always shut off engine when leaving machine. Remove key when leaving machine unattended. Park brake will engage when engine is turned off regardless of multifunction control handle position.

Keep hands, feet and clothing away from moving parts.

Wear relatively tight and belted clothing to prevent from being caught on some part of the machine.

OUO6092,000079B -19-17APR12-1/1

Avoid Injury from Thrown Objects

Extreme care must be exercised to avoid injury from thrown objects. Do not, under any circumstances, operate the spreader when other people are in the vicinity. Rocks, scrap metal or other material can be thrown off the spinner violently. Stay out of discharge area.



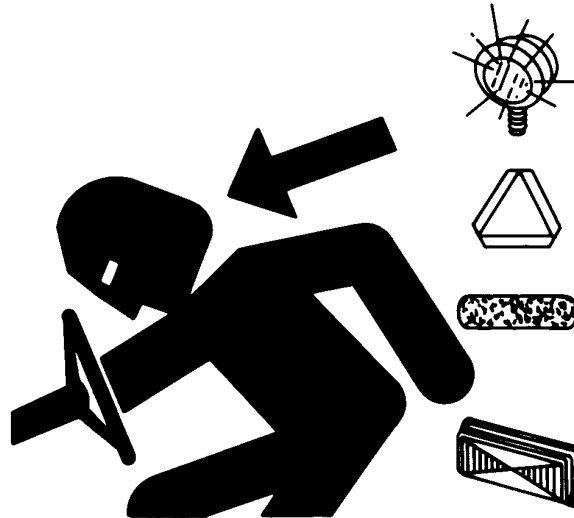
OUO6092,00007A1 -19-28FEB12-1/1

TS265 —UN—23AUG88

Use Safety Lights and Devices

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.



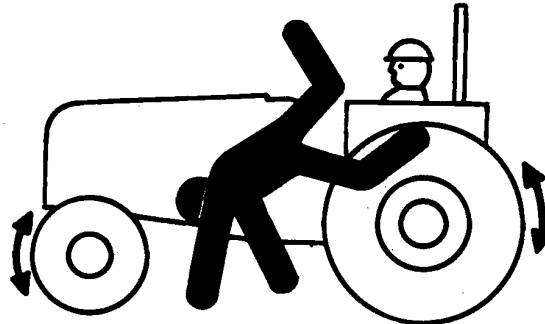
TS951—UN—12APR90

DX,FLASH -19-07JUL99-1/1

Keep Riders Off Machine

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.



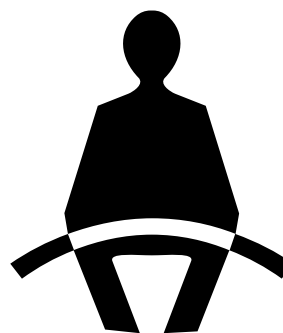
TS290—UN—23AUG88

DX,RIDER -19-03MAR93-1/1

Passenger Seat

The passenger seat is intended only for transport of a passenger in on-road operations (that is, transport from farm to field).

If it is necessary to transport a passenger, the passenger seat is the only means of transport of a passenger condoned by John Deere.



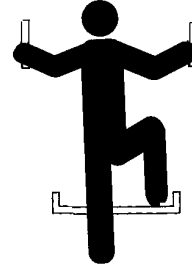
TS1730—UN—24MAY13

DX,SEAT,EU -19-22AUG13-1/1

Use Steps and Handholds Correctly

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 -19-12OCT11-1/1

T133468 —UN—15APR13

Use Seat Belt Properly

Avoid crushing injury or death during rollover.

This machine is equipped with a rollover protective structure (ROPS). USE a seat belt when you operate with a ROPS.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

Replace entire seat belt if mounting hardware, buckle, belt, or retractor show signs of damage.

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear,



discoloration, or abrasion. Replace only with replacement parts approved for your machine. See your John Deere dealer.

DX,ROPS1 -19-22AUG13-1/1

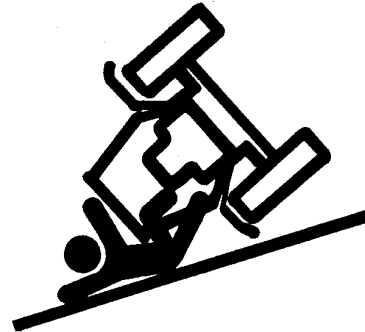
TS1729 —UN—24MAY13

Use Caution On Hillsides

Avoid holes, ditches, and obstructions which may cause machine roll-over, especially on hillsides. Avoid sharp turns on hills.

Never drive near the edge of a gully or steep embankment.

Stay off slopes that are too steep for operation.



OOU6092,000079C -19-28FEB12-1/1

RW13093 —UN—07DEC88

Transport and Operate Safely

Keep away from overhead power lines. Serious injury or death to you or others can result should machine contact electrical wires. Know the transport height of your machine.

Perform a complete assessment of the field before performing any spreading operations to decide the best working method.

Stop slowly to avoid “nose diving”.

Keep SMV emblem and reflectors clean and in place.

Do not exceed maximum transport speed specified in the operator manual.

Reduce speeds for icy, wet, graveled or soft roadway surfaces.

Check and follow local regulations for equipment size, lighting and marking before driving on public roadways.

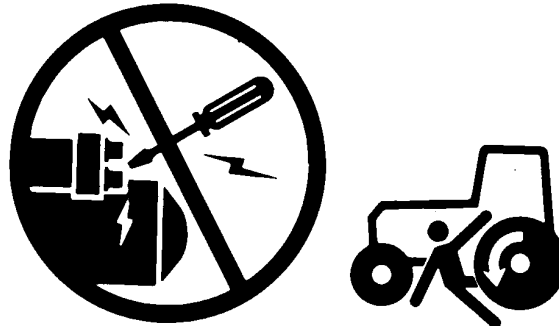
OUC6092,000079D -19-29FEB12-1/1

Prevent Machine Runaway

Avoid possible injury or death from machinery runaway.

Do not start engine by shorting across starter terminals. Machine will start in gear if normal circuitry is bypassed.

NEVER start engine while standing on ground. Start engine only from operator's seat, with transmission in neutral or park.



TS177 —UN—11JAN89

DX,BYPAS1 -19-29SEP98-1/1

Handle Fuel Safely—Avoid Fires

Handle fuel with care: it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop engine before refueling machine. Fill fuel tank outdoors.

Prevent fires by keeping machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.

Use only an approved fuel container for transporting flammable liquids.

Never fill fuel container in pickup truck with plastic bed liner. Always place fuel container on ground before refueling. Touch fuel container with fuel dispenser nozzle before removing can lid. Keep fuel dispenser nozzle in contact with fuel container inlet when filling.



TS202 —UN—23AUG88

Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.

DX,FIRE1 -19-12OCT11-1/1

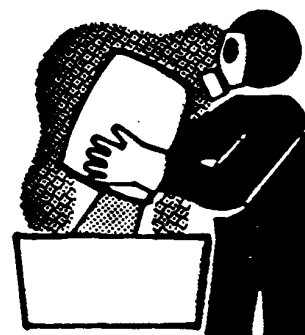
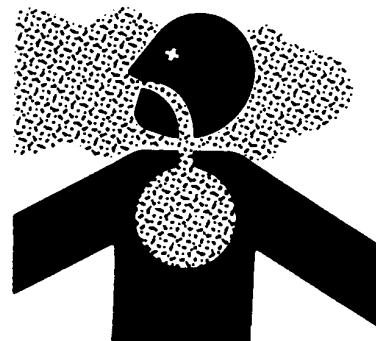
Handle Agricultural Chemicals Safely

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 spray or dusts.
- 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.



A34471

- Store chemicals in a secure, locked area way 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 -19-05APR04-1/1

TS220 —UN—15APR13

A34471 —UN—11OCT88

Spreading Dusty Materials

Cover all loads that can spill or blow away. Do not spread dusty materials where dust may create pollution or a traffic visibility problem.

OOU6435,000075D -19-21MAY12-1/1

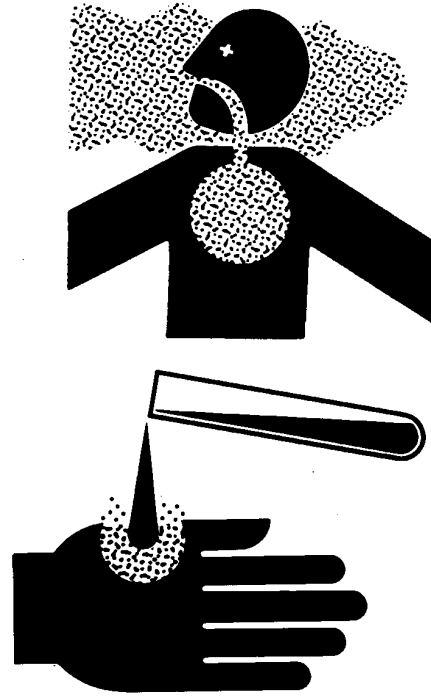
Avoid Exposure To Chemicals

⚠ CAUTION: Exposure to chemicals, including pesticides, can cause injury or death.

DO NOT RELY ON THIS CAB, CAB PRESSURE INDICATOR, OR CAB AIR FILTERS TO PROTECT AGAINST CHEMICAL EXPOSURE.

To reduce risk of chemical exposure:

- Wear PERSONAL PROTECTIVE EQUIPMENT in accordance with chemical manufacturer's label
- Allow only trained, certified applicators to apply chemicals
- Always close the windows and doors during spreading
- Verify that John Deere activated carbon filters, or appropriate substitutes, are installed at all times (see Checking and Replacing Cab Air Filters in the Cab and Air Conditioning section of machine Operator's Manual)
- Keep chemicals out of the cab
- Clean or remove contaminated shoes or clothing before entering the cab
- Keep cab interior clean
- Read and follow all instructions in:
 - Manufacturer's label for each chemical applied
 - U.S. Environmental Protection Agency (EPA) Worker Protection Standard for Agricultural Pesticides
 - State or regional guidelines for worker safety and health
 - Operator's Manual for this machine
- Numerous requirements must be met, including but not limited to EPA regulations
- Even while inside cab, always wear long sleeves, long pants, shoes, and socks when applying chemicals, including pesticides



- If necessary to leave cab when chemicals, including pesticides, are present, always use personal protective equipment recommended by chemical manufacturer
- Before reentering cab, remove personal protective equipment used to handle chemicals, including pesticides, and store equipment in accordance with EPA guidelines to prevent contaminating cab

OJ06092.000079E -19-04JUN12-1/1

TS220 — UN — 15APR13

TS272 — UN — 23AUG88

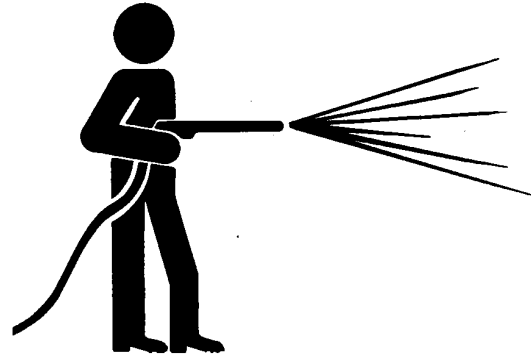
Clean Vehicle of Hazardous Chemicals, Including Pesticides

CAUTION: During application of hazardous chemicals, including pesticides, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical.

When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.

IMPORTANT: Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.



3. Wash entire exterior of vehicle.
4. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

OUC6092,000081B -19-23JUN05-1/1

T6642EJ —UN—18OCT88

Non-Permissible Use

Pay attention to the following applications for which the machine is NOT SUITABLE:

Spreading of substances other than crop protection chemicals, dry fertilizers, and agriculture products.

Spreading of agricultural limestone with DN456 installed on the R4030 or R4038, the DN485 or the second product bin.

Use of the spreader box as a storage medium for substances not intended for crop protection or fertilization purposes.

CAUTION: Working on an uncleaned machine poses unnecessary danger and is therefore forbidden.

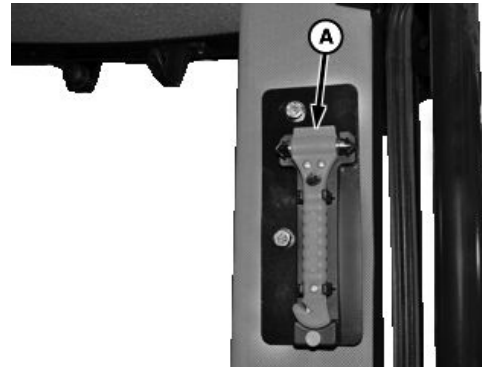
CS12167,00004A7 -19-30OCT13-1/1

Emergency Exit

CAUTION: Cover eyes, face and uncovered skin from jagged or broken glass when using break glass hammer.

In an emergency, exit the cab through the entrance door when possible. In the event an exit cannot be achieved via the entrance door, a hammer (A) is fitted in the cab that can be used to break a window to use as an exit.

A—Hammer



OUC6092,00007E8 -19-30OCT12-1/1

N93801 —UN—15AUG11

Safety Signs Location

Replace Safety Signs

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.



TS201 —UN—15APR13

DX,SIGNS -19-18AUG09-1/1

Safety Signs

Decal A

Warning: MOVING PART HAZARD

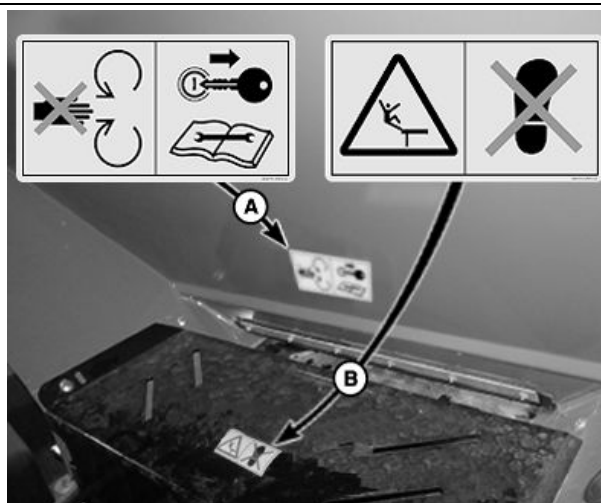
To prevent death or serious injury:

- Close and secure guards before starting.
- Do not stand or climb on machine.
- Disconnect and lockout power source before adjusting or servicing.
- Keep hands, feet, and hair away from moving parts.

Decal B

Warning: FALLING HAZARD

To prevent death, serious injury or machine damage: Do not stand or climb on guard.



Spreader Front Decal Location

N97502 —UN—14NOV12

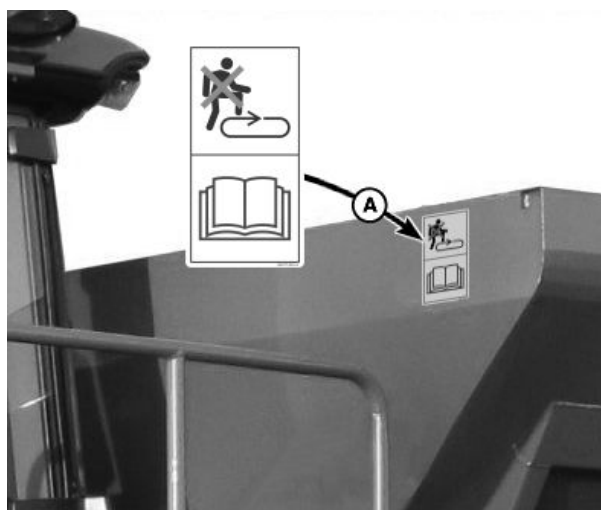
TB90758,0001A2F -19-11MAY15-1/13

Decal A

Danger: MOVING PART HAZARD

To avoid death or serious injury:

- Stay out of product bin while conveyor is moving.
- Disconnect and lockout power source before adjusting or servicing.
- Do not ride on spreader.

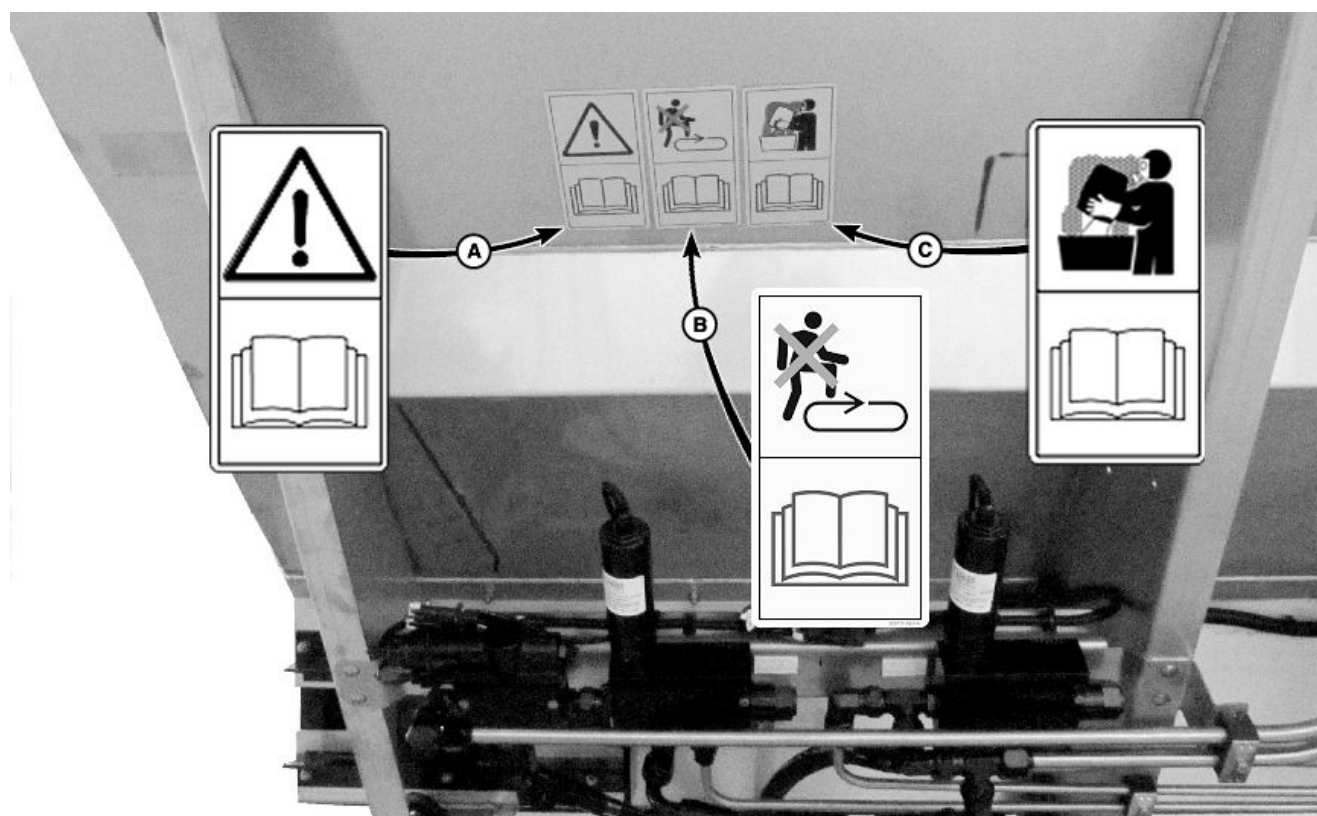


Upper Left Front Decal

N95917 —UN—13APR12

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TB90758,0001A2F -19-11MAY15-2/13



Left Front Corner Decals

Decal A

⚠ CAUTION: TO AVOID INJURY OR MACHINE DAMAGE:

- Do not operate or work on this machine without reading and understanding the operators manual.
- Keep hands, feet, hair, and clothing away from moving parts.
- Do not allow riders on machine.
- Avoid unsafe operation or maintenance.
- Disengage power take-off and shut off engine before removing guards, servicing, or unclogging machine.
- Keep unauthorized people away from machine.
- Keep all guards in place when machine is in use.
- If manual is missing contact dealer for replacement.

Decal B

Danger: MOVING PART HAZARD

To avoid death or serious injury:

- Stay out of product bin while conveyor is moving.
- Disconnect and lockout power source before adjusting or servicing.
- Do not ride on spreader.

Decal C

⚠ CAUTION: HAZARDOUS MATERIALS

To avoid injury or machine damage:

- Materials to be spread can be dangerous.
- Improper selection, application, use, or handling may be a hazard to persons, animals, crops, or other property.
- Follow instructions and precautions given by the material manufacturer.

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TB90758,0001A2F -19-11MAY15-3/13

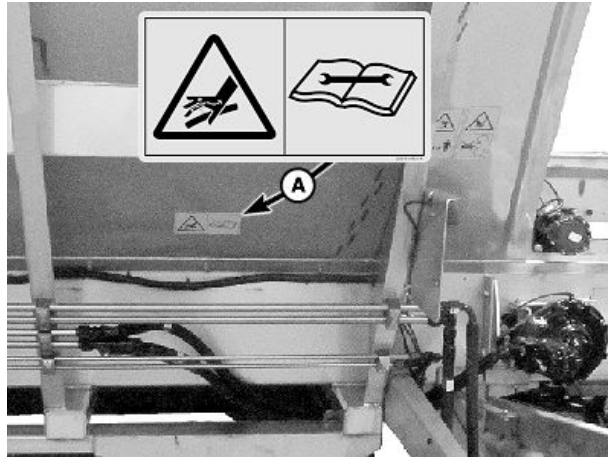
N101126—UN—13DEC12

Decal A

Warning: HIGH PRESSURE FLUID HAZARD

To prevent death or serious injury:

- Relieve pressure on system before repairing, adjusting, or disconnecting.
- Keep all lines, fittings, and couplers tight and free of leaks.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Do not use hydraulic lines for hand holds or steps.
- Components may be hot.



Left Rear Side Decal

TB90758,0001A2F -19-11MAY15-4/13

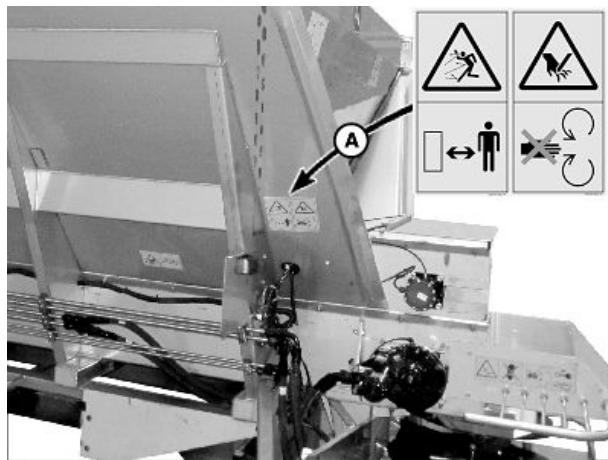
N101206—UN—13DEC12

Decal A

Danger: FLYING MATERIAL & ROTATING SPINNER HAZARD

To prevent death or serious injury:

- Wear eye protection.
- Stop machine before servicing or adjusting.
- Keep bystanders at least 60 feet away.



Left Rear Corner Decals

Continued on next page

TB90758,0001A2F -19-11MAY15-5/13

N101207—UN—13DEC12

Decal A

Warning: FALLING HAZARD

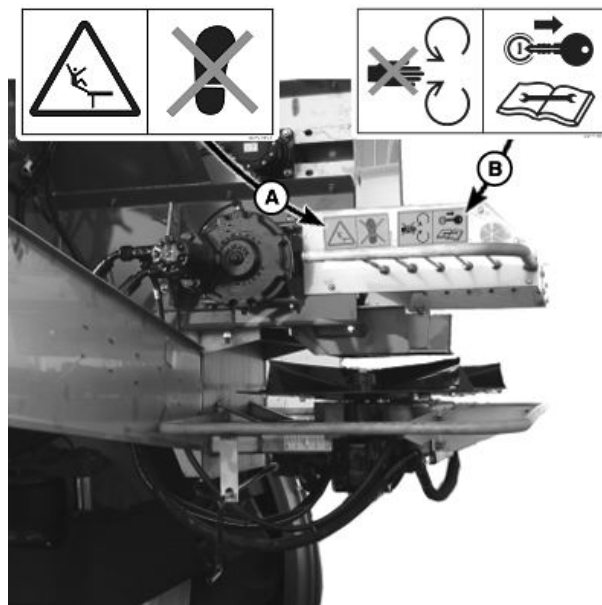
To prevent death, serious injury or machine damage: Do not stand or climb on guard.

Decal B

Warning: MOVING PART HAZARD

To prevent death or serious injury:

- Close and secure guards before starting.
- Do not stand or climb on machine.
- Disconnect and lockout power source before adjusting or servicing.
- Keep hands, feet, and hair away from moving parts.



Rear Left Decals

TB90758,0001A2F -19-11MAY15-6/13

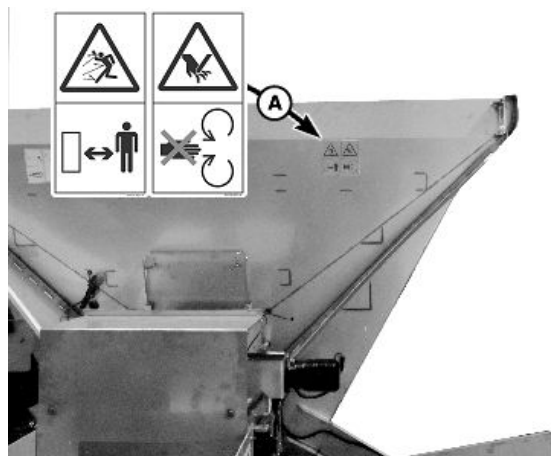
N95919 —UN—13APR12

Decal A

Danger: FLYING MATERIAL & ROTATING SPINNER HAZARD

To prevent death or serious injury:

- Wear eye protection.
- Stop machine before servicing or adjusting.
- Keep bystanders at least 60 feet away.



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TB90758,0001A2F -19-11MAY15-7/13

N101381 —UN—02JAN13

Decal A

Warning: MOVING PART HAZARD

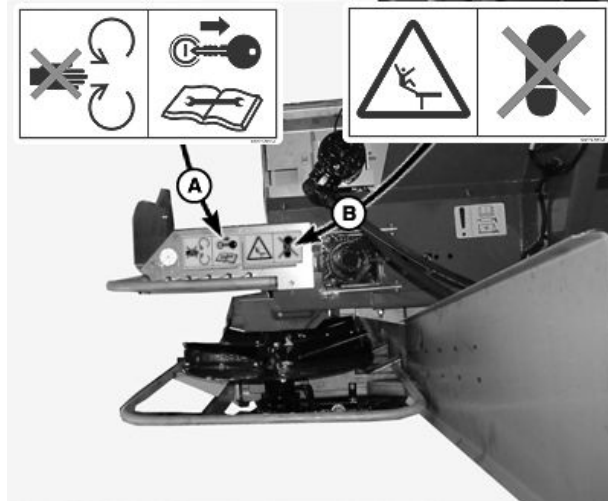
To prevent death or serious injury:

- Close and secure guards before starting.
- Do not stand or climb on machine.
- Disconnect and lockout power source before adjusting or servicing.
- Keep hands, feet, and hair away from moving parts.

Decal B

Warning: FALLING HAZARD

To prevent death, serious injury or machine damage: Do not stand or climb on guard.



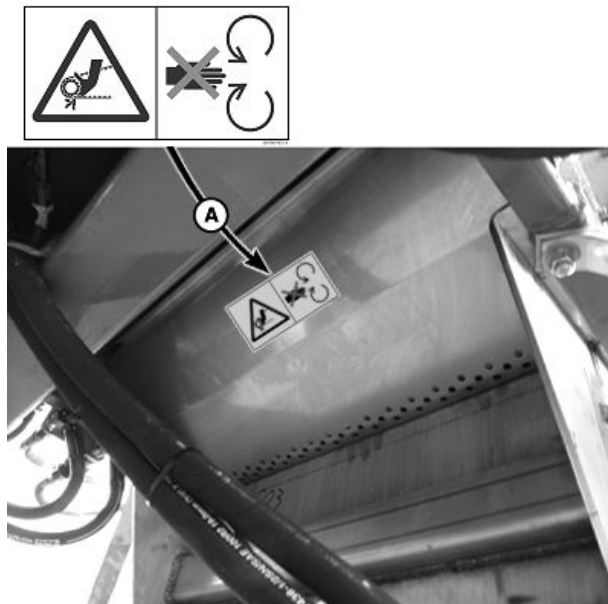
N95920 —UN—13APR12

TB90758,0001A2F -19-11MAY15-8/13

Warning: MOVING PART HAZARD

To prevent death or serious injury:

- Close and secure guards before starting.
- Do not stand or climb on machine.
- Disconnect and lockout power source before adjusting or servicing.
- Keep hands, feet, and hair away from moving parts.



N95924 —UN—13APR12

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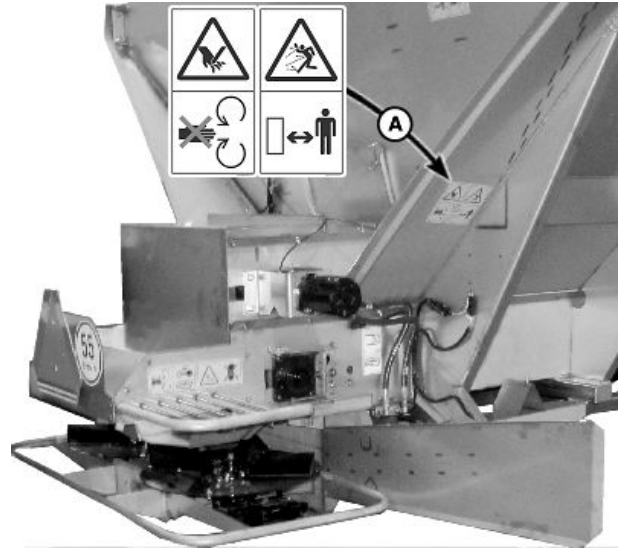
TB90758,0001A2F -19-11MAY15-9/13

Decal A

Danger: FLYING MATERIAL & ROTATING SPINNER HAZARD

To prevent death or serious injury:

- Wear eye protection.
- Stop machine before servicing or adjusting.
- Keep bystanders at least 60 feet away.



N101382 —UN—02JAN13

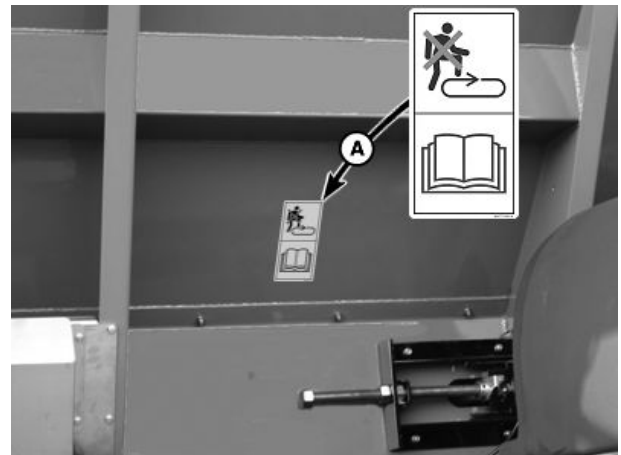
TB90758,0001A2F -19-11MAY15-10/13

Decal A

Danger: MOVING PART HAZARD

To avoid death or serious injury:

- Stay out of product bin while conveyor is moving.
- Disconnect and lockout power source before adjusting or servicing.
- Do not ride on spreader.



N95925 —UN—13APR12

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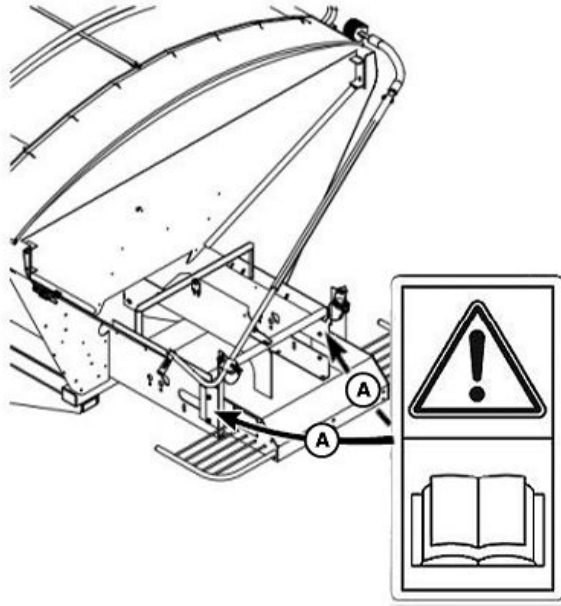
TB90758,0001A2F -19-11MAY15-11/13

Decal A

CAUTION : TO AVOID INJURY OR MACHINE DAMAGE:

To avoid minor or moderate injury:

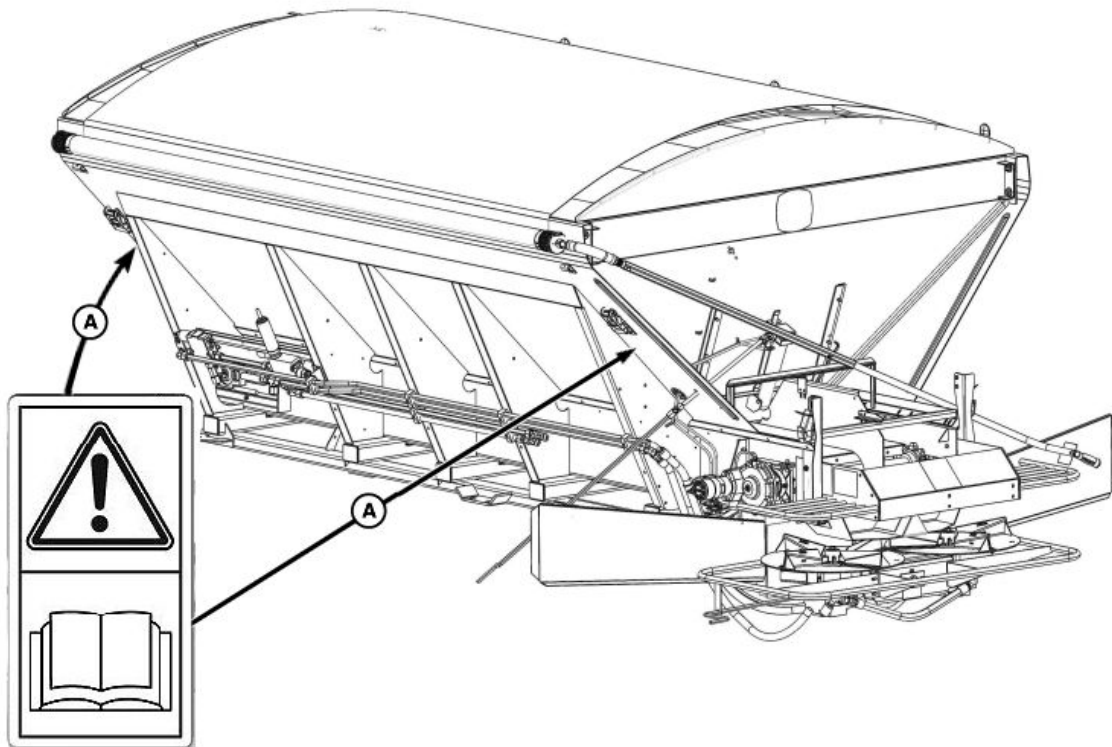
- Hold crank handle firmly with both hands while operating.



N117366 —UN—30APR15

Continued on next page

TB90758,0001A2F -19-11MAY15-12/13



Decal A

CAUTION : TO AVOID INJURY OR MACHINE DAMAGE:

To avoid minor or moderate injury:

- Do not adjust ratchets while operating tarping system.

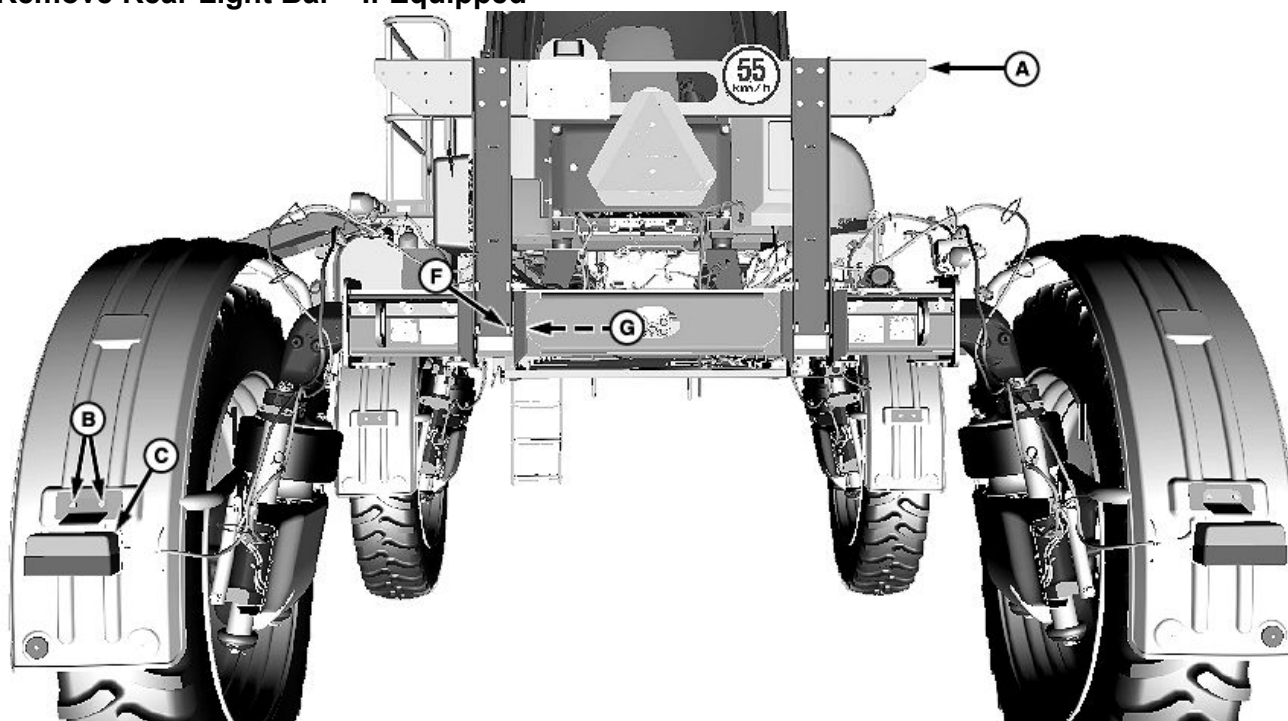
- Do not load or unload box while tarp is closed.
- Do not stand or walk on tarp or end caps.
- Do not drive machine at highway speeds unless tarp is open or closed (fully closed is recommended.)

TB90758,0001A2F -19-11MAY15-13/13

N117800 —UN—30APR15

Installation Instructions

Remove Rear Light Bar—If Equipped



N101375—UN—19DEC12

NOTE: After removal retain all components of the light bar assembly (A) so they can be reinstalled if the machine is to be transported as bareback.

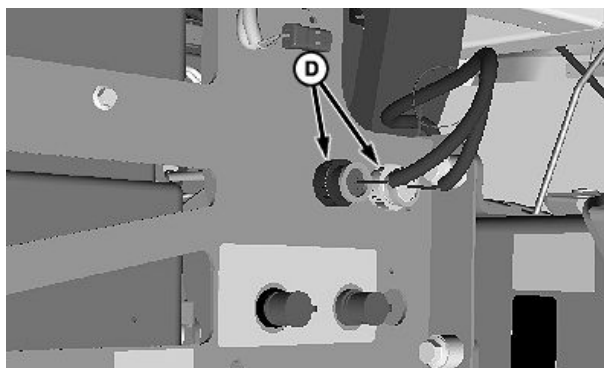
1. Remove and retain cap screws (B) and fender lights (C).
2. Disconnect harness from connectors (D).
3. Remove and retain harness (E) and lights.

NOTE: Approximate weight of light bar assembly is 22.7 kg (50 lb.).

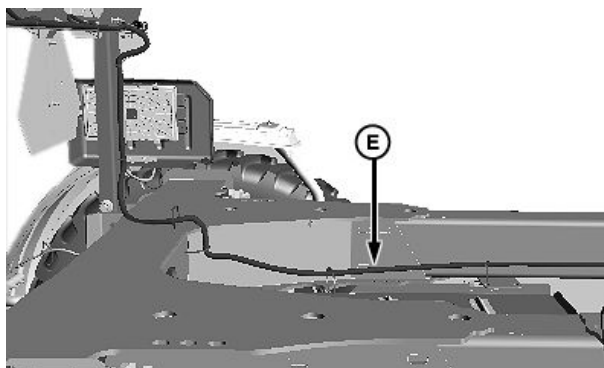
4. Support light bar assembly with proper lifting device.
5. Remove and retain cap screws (F) and nuts (G).
6. Remove and retain light bar assembly.

A—Light Bar Assembly
B—Cap Screw (4 used)
C—Fender Light
D—Harness Connections

E—Harness
F—Cap Screw (8 used)
G—Nut (8 used)



N101376—UN—19DEC12



N101377—UN—19DEC12

CS12167,00002B0 -19-19DEC12-1/1

Install Dry Spreader Body

CAUTION: Crane or hoist must have a rated lifting capacity of at least 2268 kg (5000 lb.). Verify any additional lifting or connecting devices, such as anchor shackles or clevises, are properly rated for the job.

Faulty strap lift points or lift straps can allow dry spreader to fall causing severe injury or death to you or others. Inspect strap lifting points and lift straps for wear before attaching and lifting.

Approximate weight of dry spreader is 1469 kg (3240 lb.) for DN456, 1696 kg (3740 lb.) for DN485, and 431 kg (950 lb.) for second product bin insert.

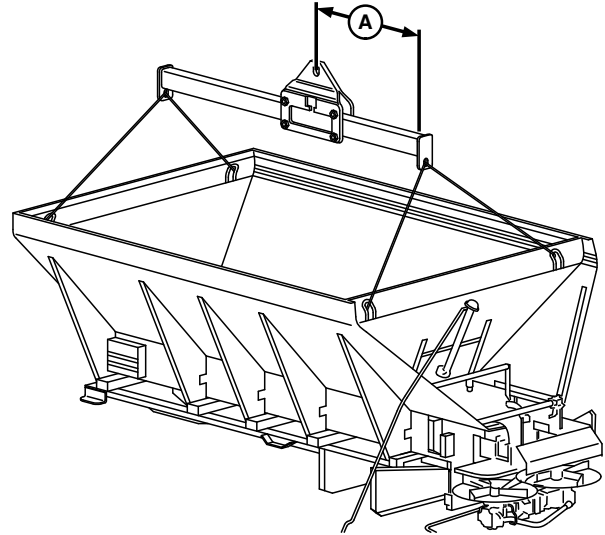
NOTE: If machine is equipped with a liquid system, it must be removed before dry spreader body can be installed. (See Liquid System Removal and Installation section in John Deere R4030, R4038 and R4045 operator's manual.)

If machine is equipped with bareback light bar it must be removed before dry spreader body can be installed. (See Remove Rear Light Bar in this section.)

1. Position chassis with adequate room around the unit. Make sure endgate or second product bin insert is securely installed.

IMPORTANT: Lifting tools available as part of conversion bundle. See your John Deere dealer to order lifting tools.

2. Attach John Deere lifting device to each corner lift hook inside spreader.



A—Dimension

3. Adjust lifting device per dimension given in table.

Dry Spreader Body	Dimension A
With Second Product Bin	91.4 cm (36 in.)
Without Second Product Bin	101.6 cm (40 in.)

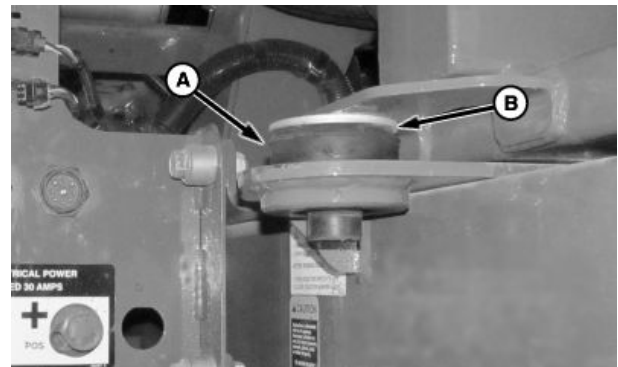
N88104 —UN—10MAR10

BB83525,0000011 -19-02JAN14-1/3

4. Install rubber mount (A) and washer (B) at front of chassis on both sides of machine.
5. Position spreader with mounts located directly over chassis.

A—Rubber Mount

B—Washer



N97504 —UN—14NOV12

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BB83525,0000011 -19-02JAN14-2/3

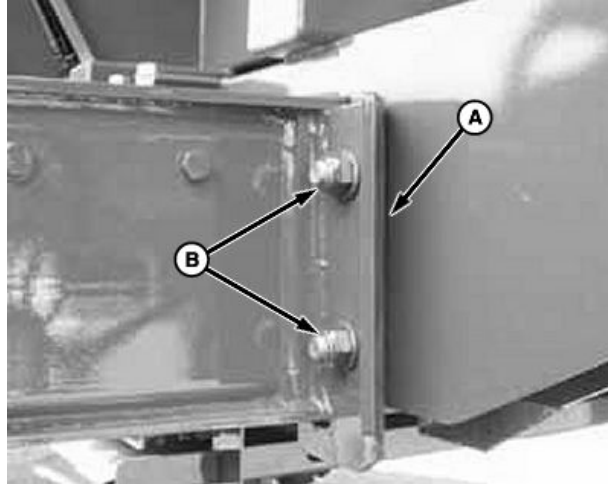
CAUTION: DO NOT WELD VEHICLE FRAME!
Such welding can lead to fatigue cracking and must be avoided.

6. Attach unit to chassis by loosely installing mounting hardware, starting at the rear and moving forward. Add shims to rear mount between box and chassis.
7. Tighten mounting hardware as specified.

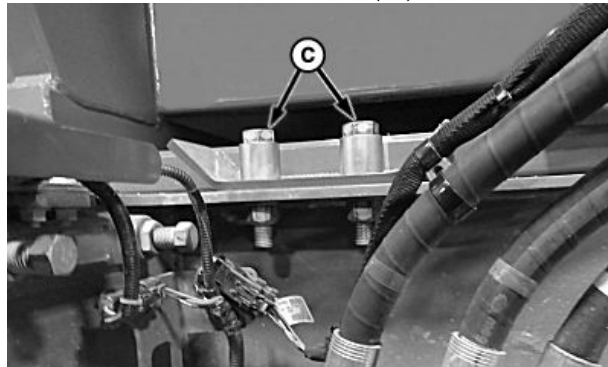
Specification

Rear Mounts	
(1st)—Torque.....	425 N·m (315 lb.-ft.)
Center Mounts	
(2nd)—Torque.....	425 N·m (315 lb.-ft.)
Front Mounts	
(3rd)—Torque.....	425 N·m (315 lb.-ft.)

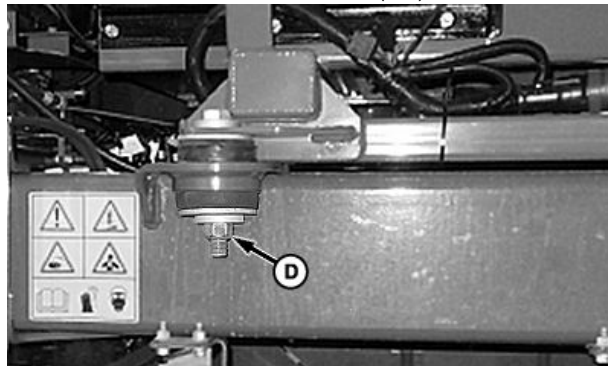
A—Shims
B—Hardware, Rear Mount
C—Hardware, Center Mount
D—Hardware, Front Mount



Rear Mounts (1st)



Center Mounts (2nd)



Front Mounts (3rd)

N97030 —UN—27FEB12

N97505 —UN—14NOV12

N101379 —UN—26APR13

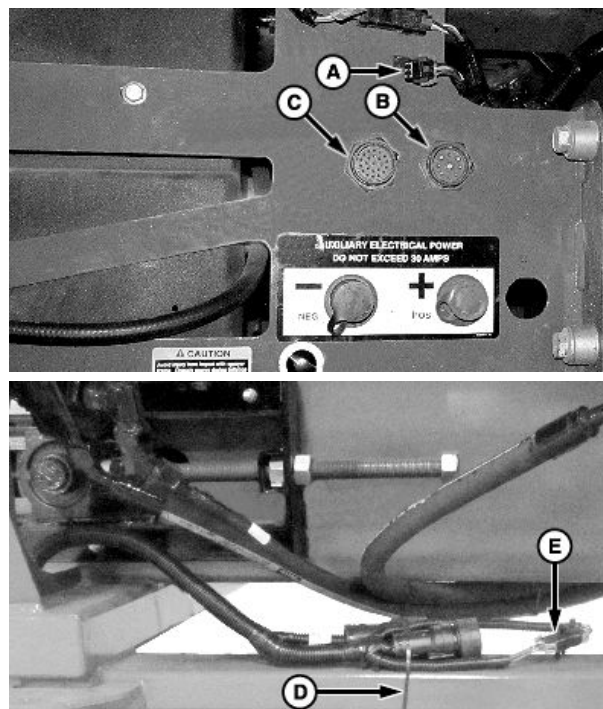
BB83525,0000011 -19-02JAN14-3/3

Attach Harness Connectors

1. Locate harness connection points (A, B, and C).
2. Remove CAN terminator from CAN harness connector.
3. Remove tie band (D).
4. Disconnect CAN harness (E).

A—CAN Harness Connector
B—9 Pin Connector
C—23 Pin Connector

D—Tie Band
E—CAN Harness



N100787—UN—14NOV12

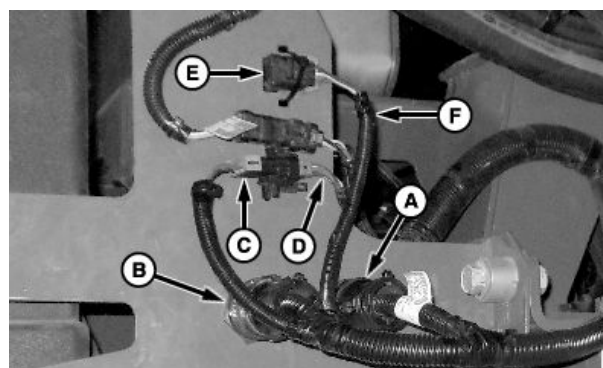
N100788—UN—14NOV12

CS12167,000026A -19-21NOV12-1/2

5. Connect 9 and 23 pin connectors (A and B) to machine.
6. Connect CAN harness (C) to machine harness (D).
7. Install previously removed CAN terminator (E) to spreader CAN harness (F).
8. Retain CAN terminator as shown and any loose harness with tie bands to prevent damage.

A—9 Pin Connector
B—23 Pin Connector
C—CAN Harness Connection

D—Machine Harness Connection
E—CAN Terminator
F—Spreader CAN Harness Connection



N100789—UN—14NOV12

CS12167,000026A -19-21NOV12-2/2

Install Hydraulic Hoses

IMPORTANT: If a threaded connection is tightened too tightly, the fitting or housing into which the fitting is placed could be distorted and an unstoppable leak could occur.

See **HOSE INSTALLATION GUIDE** in this section for proper hose assembly.

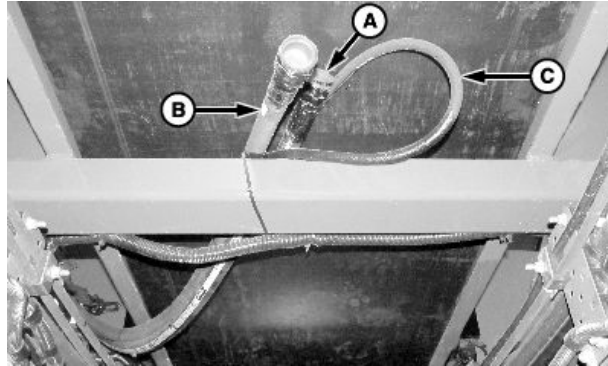
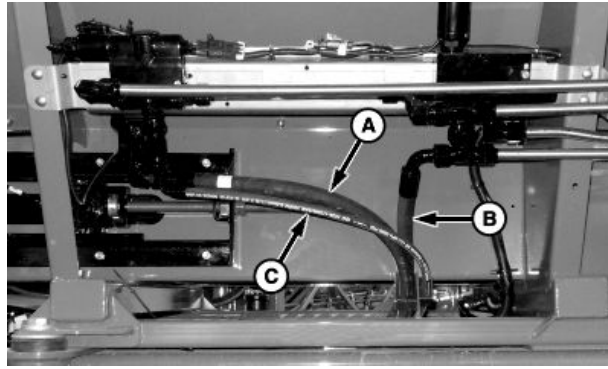
NOTE: Use thread sealer on all fittings, except O-ring and JIC adapters, O-ring valves and motors, etc. When using thread sealer, do not put it on the first three threads of the fitting. Too much on the fitting or on the first three threads will force it into the oil stream where it could damage the system.

See *Metric Face Seal and O-Ring Stud End Fitting Torque Chart* in the *Specifications* section of this manual for proper fitting torque values.

1. Identify hydraulic lines (A, B and C) on spreader.

A—Pressure Line
B—Return Line

C—Load Sense Line



Behind Cab - Between Frame Rails

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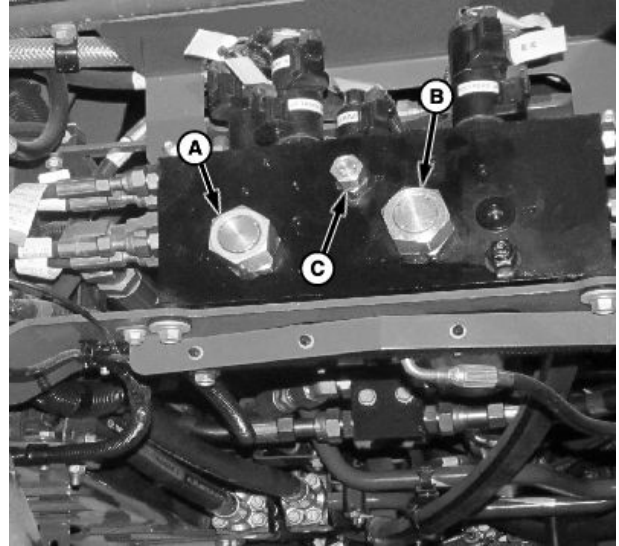
CS12167,000026B -19-03JAN13-1/2

N101109—UN—26APR13

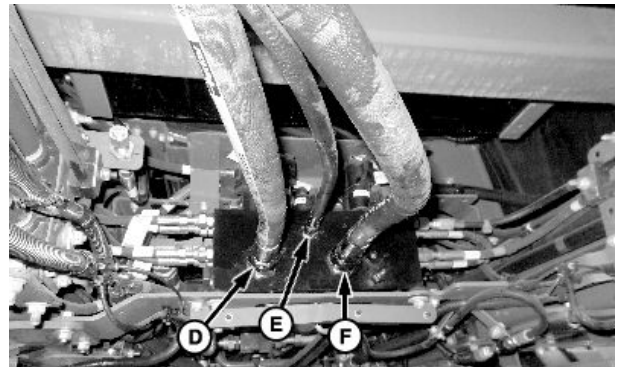
N101110—UN—14NOV12

2. Remove and retain caps from ports (A—C).
3. Install pressure line (D) to M port.
4. Install load sense line (E) to BLS port.
5. Install return line (F) to MT port.
6. Tighten all connections to specification.

A—Pressure Port—M	D—Pressure Line
B—Return Port—MT	E—Load Sense Line
C—Load Sense Port—BLS	F—Return Line



N101113 —UN—14NOV12



N101114 —UN—14NOV12

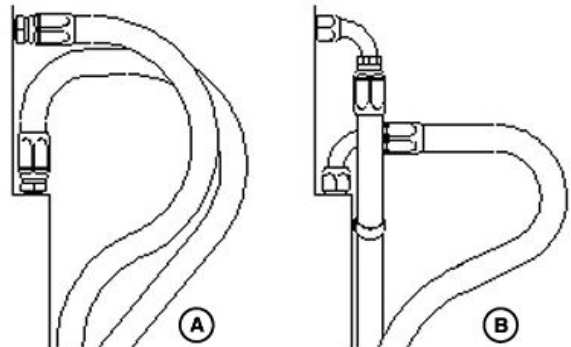
CS12167,000026B -19-03JAN13-2/2

Hose Installation Guide

Use elbows and adapters in the installation to relieve strain on the assembly, and to provide easier and neater installations that are accessible for inspection and maintenance. Remember that metal end fittings cannot be considered as part of the flexible portion of the assembly.

A—Wrong

B—Right



N97036 —UN—27FEB12

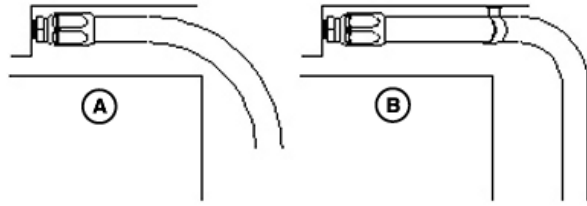
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OUC6435,0000696 -19-07MAR12-1/6

Install hose runs to avoid rubbing or abrasion. Clamps are often needed to support long runs of hose or to keep hose away from moving parts. It is important that the clamps be of the correct size. A clamp that is too large will allow the hose to move in the clamp causing abrasion at this point.

A—Wrong

B—Right



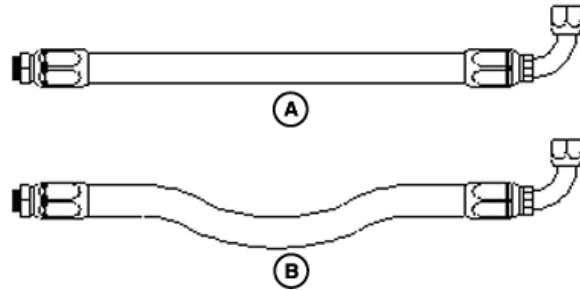
N97037 —UN—27FEB12

OOU6435,0000696 -19-07MAR12-2/6

In straight hose installations allow enough slack in the hose line to provide for changes in length that will occur when pressure is applied. This change in length can be from +2% to -4%.

A—Wrong

B—Right



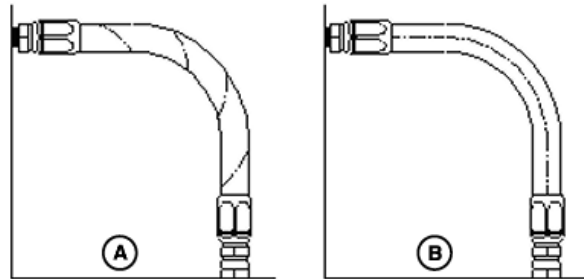
N97038 —UN—27FEB12

OOU6435,0000696 -19-07MAR12-3/6

Do not twist hose during installation. This can be determined by the printed layline on the hose. Pressure applied to a twisted hose can cause hose failure or loosening of the connections.

A—Wrong

B—Right



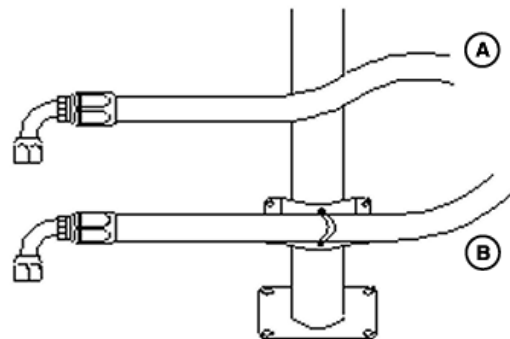
N97039 —UN—27FEB12

OOU6435,0000696 -19-07MAR12-4/6

Keep hose away from hot parts. High ambient temperature will shorten hose life. If you cannot route it away from the heat source, insulate it.

A—Wrong

B—Right



N97040 —UN—27FEB12

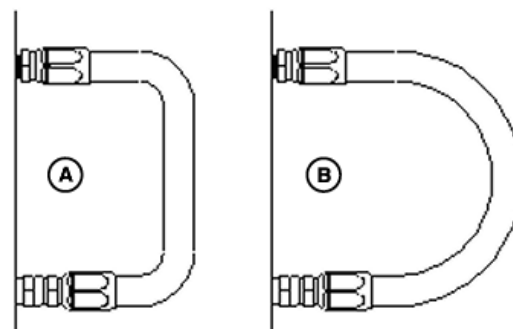
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OOU6435,0000696 -19-07MAR12-5/6

Keep the bend radius of the hose as large as possible to avoid hose collapsing and restriction of flow. Follow catalog specs on minimum bend radius.

A—Wrong

B—Right



N97041 —UN—27FEB12

OUO6435,0000696 -19-07MAR12-6/6

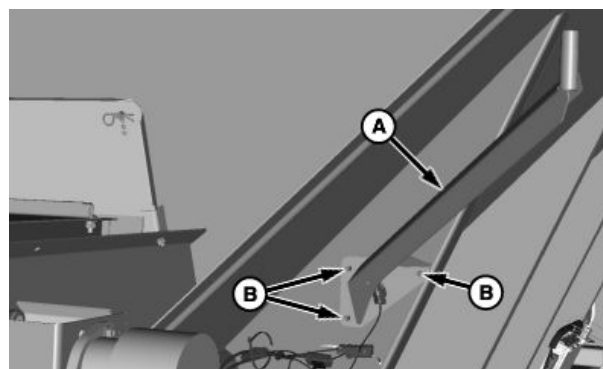
Install Beacon Light Kit—If Equipped

NOTE: Cabs not factory equipped with beacon light option do not have a beacon light switch. Contact your local John Deere dealer for the necessary parts.

1. Install beacon light bracket (A) as shown with supplied hardware.

A—Beacon Light Bracket

B—Hardware



N103528 —UN—26APR13

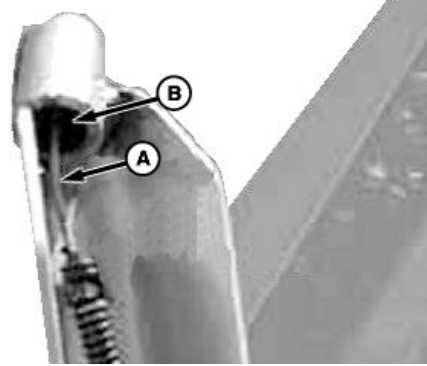
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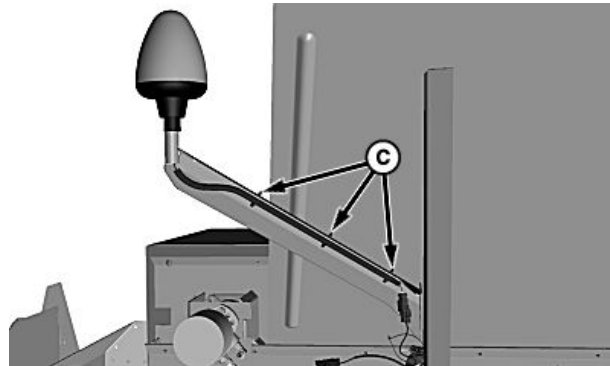
2. Thread electrical wire (A) through bottom of hole on bracket top.
3. Connect electrical wire to connector (B).
4. Route electrical harness down bracket and retain with tie bands (C).
5. Attach beacon light (D) to connector at bracket top and tighten wing screw.

A—Electrical Wire
B—Connector

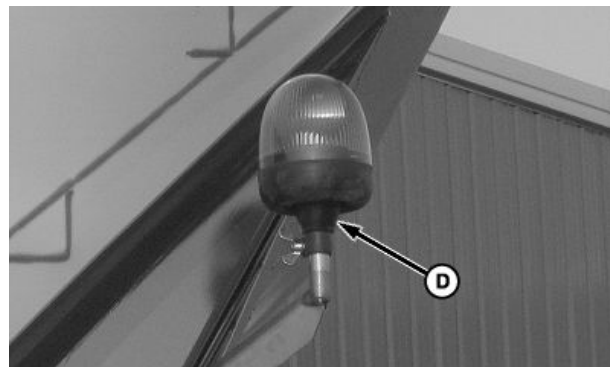
C—Tie Bands
D—Beacon



N103529 —UN—26APR13



N103530 —UN—26APR13



N97118 —UN—02APR12

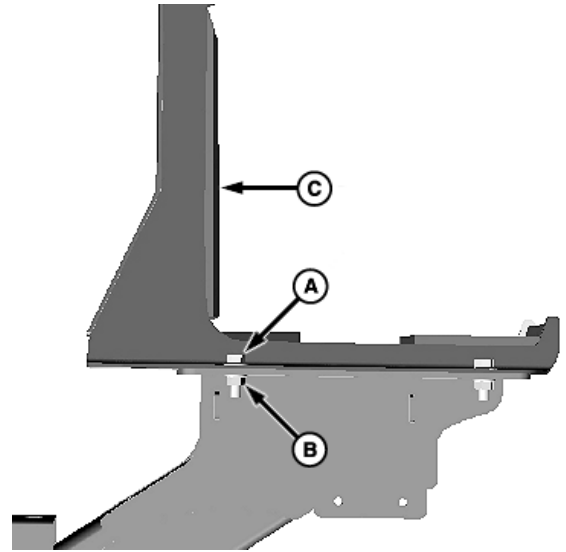
OUO6077,0000013 -19-07JUN13-2/2

Install Mirrors and Mirror Brackets

1. Remove and retain cap screws (A), nuts (B) and boom cradle (C). Repeat for opposite side.

A—Cap Screw, 4 Used
B—Nut, 4 Used

C—Boom Cradle



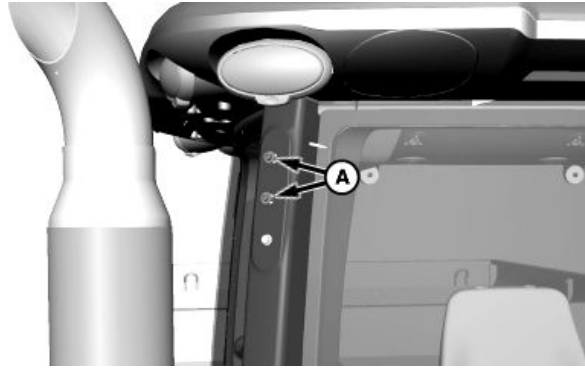
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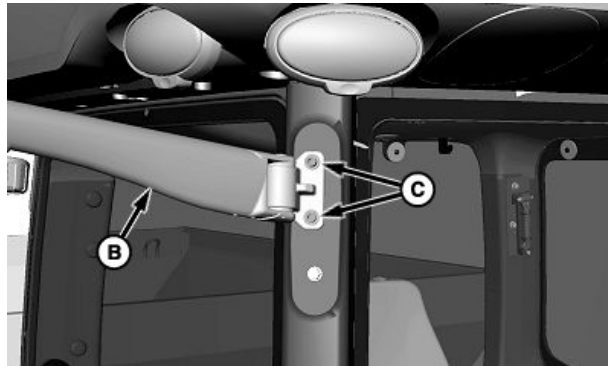
N101122 —UN—14NOV12

2. Remove and retain cap screws (A).
3. Install mirror arm (B) as shown. Retain with supplied socket head screws and washers (C).
4. Install mirror arm extension (D) to mirror arm.
5. Install mirror (E) to mirror arm extension.
6. Adjust mirror for desired visibility.
7. Tighten screws (F) and knob (G) to retain mirror in desired position.

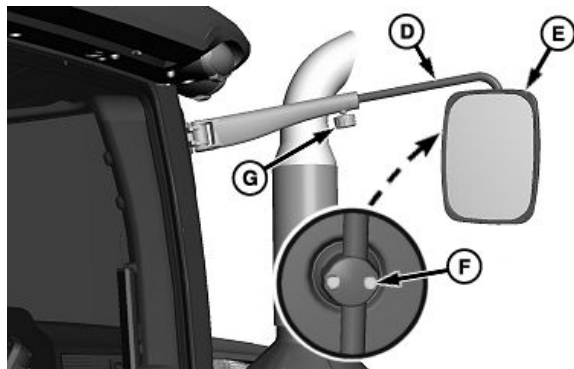
A—Cap Screw	E—Mirror
B—Mirror Arm	F—Screw, 2 used
C—Socket Head Screw and Washer, 2 used	G—Knob
D—Mirror Arm Extension	



N104339 —UN—10JUN13



N104340 —UN—10JUN13



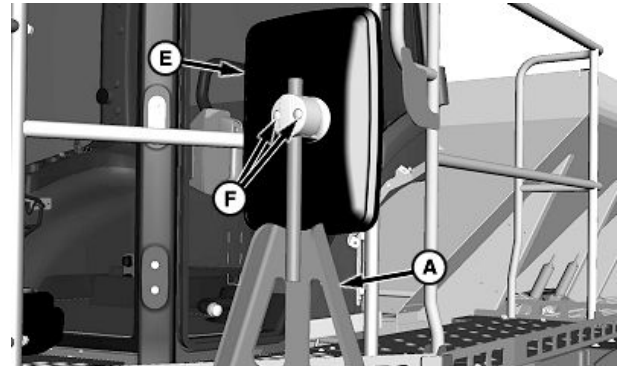
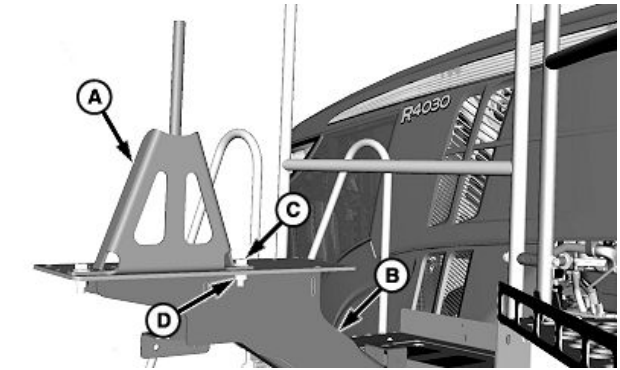
N104341 —UN—10JUN13

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CS12167,0000271 -19-10JUN13-2/3

8. Install left-hand mirror bracket (A) to boom support (B) using previously removed cap screws (C) and nuts (D).
9. Install left-hand mirror (E).
10. Adjust mirror for desired visibility.
11. Tighten screws (F) to retain mirror in desired position.

A—Left-Hand Mirror Bracket	D—Nut, 2 used
B—Boom Support	E—Mirror
C—Cap Screw, 2 used	F—Screws



N104337—UN—10JUN13

N104338—UN—10JUN13

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Install Inverted V—DN456

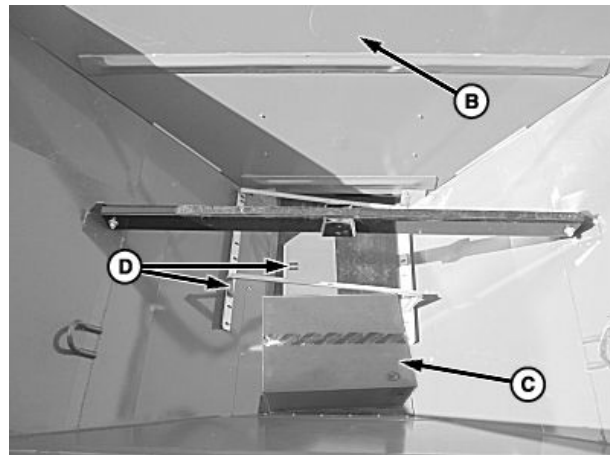
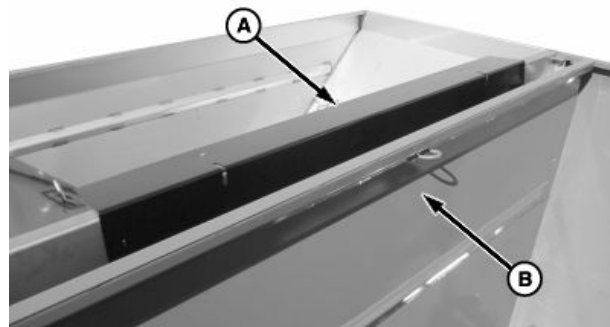
IMPORTANT: If machine has second product bin insert installed, and a removable endgate (B) ordered as an option, the removable endgate will be mounted in the box in front of the second product bin and the hillside divider parts (D) along with Inverted V parts (A) will be in the product bin. Hardware and small parts for hillside divider are in cardboard box (C). Remove all parts before beginning assembly.

NOTE: Inverted V is only used in boxes that do not have second product bin inserts.

1. Remove packaged Inverted V parts from machine prior to use.

A—Inverted V
B—Endgate

C—Cardboard Box
D—Hillside Divider



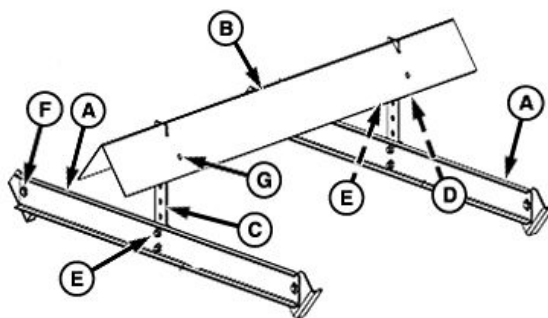
Parts Shipped in Product Bin

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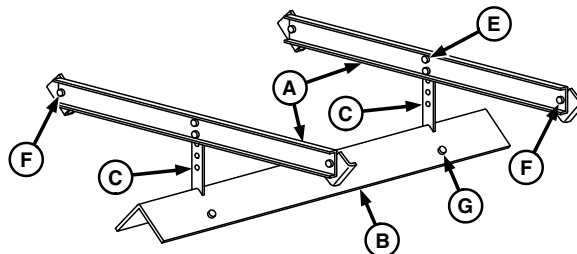
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N98646—JUN—23MAY12

N98645—JUN—23MAY12



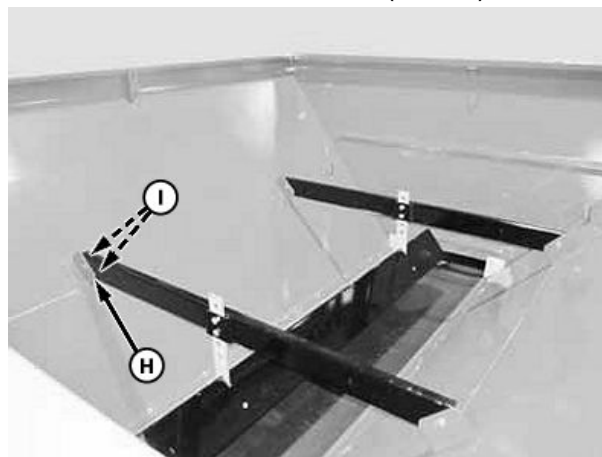
High Yield Position Shown—Lime (R4045 Only)



Standard Yield Shown (Fertilizer)

2. Assemble inverted V to desired configuration using parts (A—G).
3. Set inverted V inside unit.
4. Attach brackets (H) to sides of unit with flanges facing rearward using hardware (I).
5. Position inverted V at desired level.

A—Hanger—V Weldment	F—Cap Screw, Washer and Nut, 1/2 x 1-1/4 in. (4 used)
B—Inverted V—7 ft.	G—Cap Screw, Washer and Nut, 5/16 x 1 in. (4 used)
C—Bar—Adjusting	H—Bracket (4 used)
D—Bracket—V (2 used)	I—Cap Screw, Washer and Nut, 1/2 x 1-1/4 in. (8 used)
E—Cap Screw, Washer and Nut, 5/8 x 1-3/4 in. (4 used)	



CS12167,0000542 -19-30JAN14-2/2

Install Inverted V—DN485

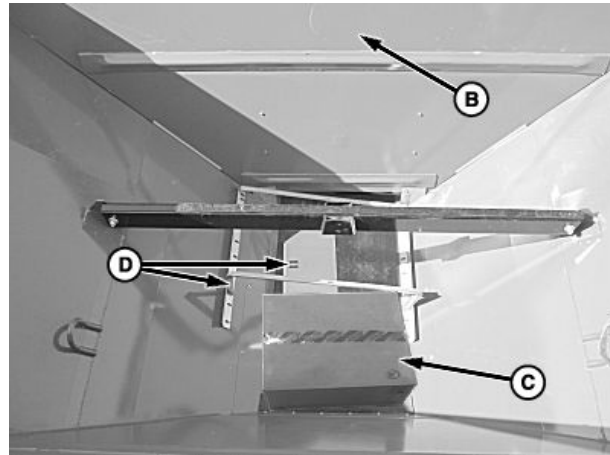
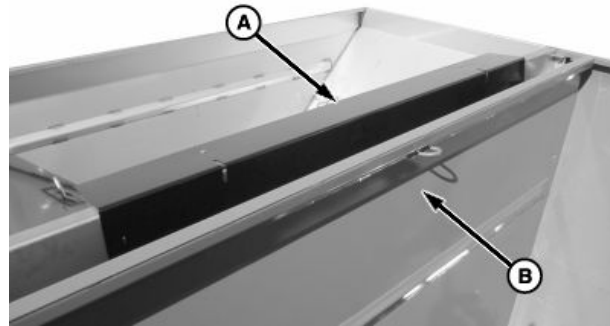
IMPORTANT: If machine has second product bin insert installed, and a removable endgate (B) ordered as an option, the removable endgate will be mounted in the box in front of the second product bin and the hillside divider parts (D) along with Inverted V parts (A) will be in the product bin. Hardware and small parts for hillside divider are in cardboard box (C). Remove all parts before beginning assembly.

NOTE: Inverted V is only used in boxes that do not have second product bin inserts.

1. Remove packaged Inverted V parts from machine prior to use.

A—Inverted V
B—Endgate

C—Cardboard Box
D—Hillside Divider



Parts Shipped in Product Bin

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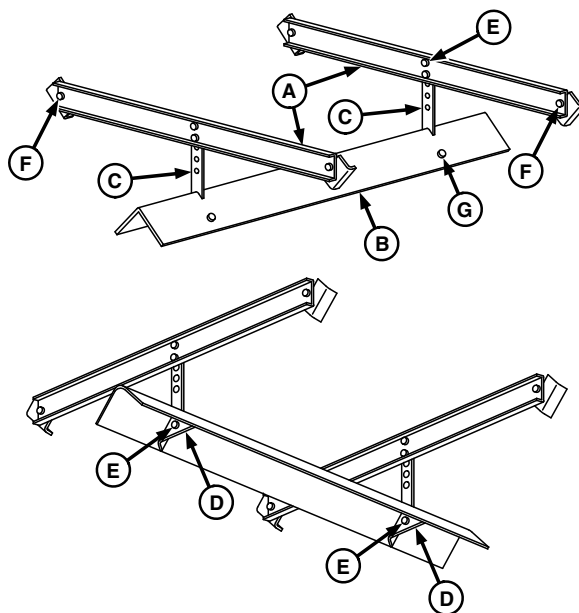
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N98646—JUN—23MAY12

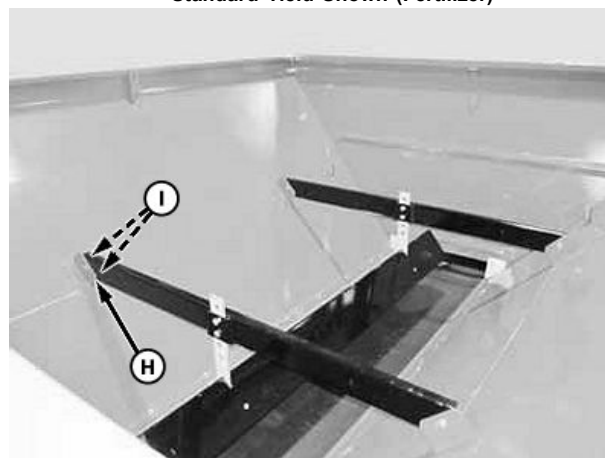
N98645—JUN—23MAY12

2. Assemble inverted V to desired configuration using parts (A—G).
3. Set inverted V inside unit.
4. Attach brackets (H) to sides of unit with flanges facing rearward using hardware (I).
5. Position inverted V at desired level.

A —Hanger—V Weldment	F —Cap Screw, Washer and Nut, 1/2 x 1-1/4 in. (4 used)
B —Inverted V—7 ft.	G —Cap Screw, Washer and Nut, 5/16 x 1 in. (4 used)
C —Bar—Adjusting	H —Bracket (4 used)
D —Bracket—V (2 used)	I —Cap Screw, Washer and Nut, 1/2 x 1-1/4 in. (8 used)
E —Cap Screw, Washer and Nut, 5/8 x 1-3/4 in. (4 used)	



Standard Yield Shown (Fertilizer)



N97429 —UN—13MAR12

N97121 —UN—24MAY12

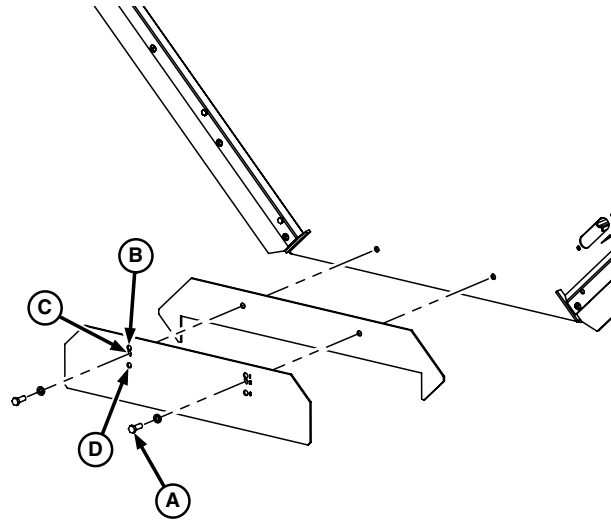
CS12167,00004A9 -19-30OCT13-2/2

Install Second Product Bin—Spreaders with Belt Over Chain Conveyors

CAUTION: Stay out of the spreader. If it's necessary to enter the spreader, return to the shop, empty body, turn off all power, set vehicle brakes, lock engine starting switch and remove keys before entering. Tag all controls to prohibit operation. Tags should be placed, and later removed, only by person working in the body.

Use only lifting devices that meet or exceed OSHA standard 1910.184. Never exceed work load limits or lift equipment over people. Empty spreader before lifting. Loads may shift or fall if improperly supported, causing injury.

1. To adjust main bin's feedgate opening when a second product bin will be installed: position front feedgate on second product bin as necessary to achieve a 38 mm (1-1/2 in.) (B), 51 mm (2 in.) (C), or 76 mm (3 in.) (D) opening.



A—Hardware
B—38 mm (1-1/2 in.) Position

C—51 mm (2 in.) Position
D—76 mm (3 in.) Position

N111111 —UN—21MAR14

Continued on next page

CS12167,000056F -19-20MAR14-1/9

2. Disconnect bin level sensor (A) from harness on removable endgate (B).
3. Remove and retain nuts (C) and bin level sensor.

NOTE: Retain grease line to prevent damage during endgate removal.

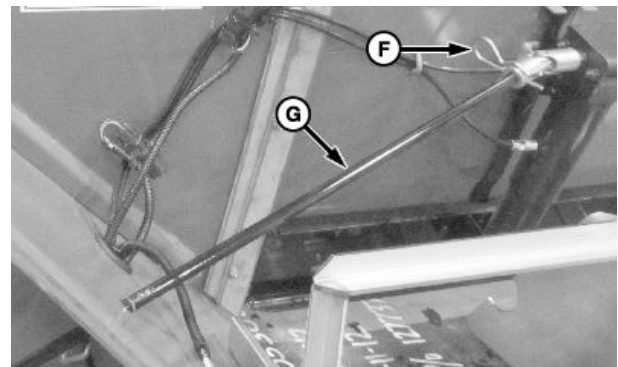
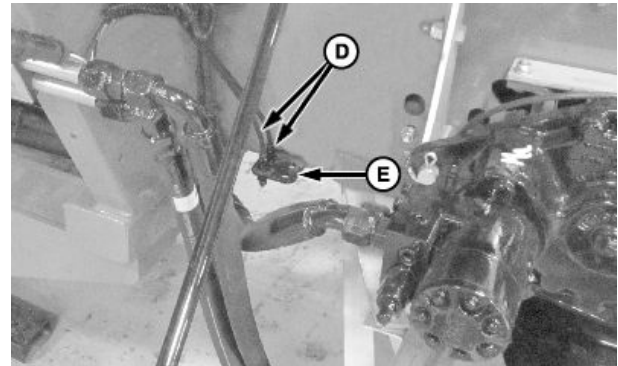
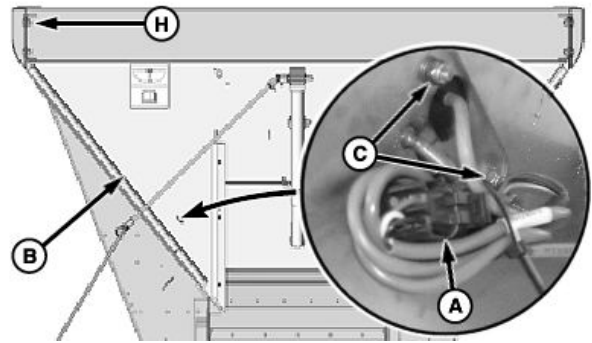
4. Remove grease lines (D) from bracket (E).
5. Remove and retain spring pin (F) and jack rod (G).

NOTE: Removable endgate weighs approximately 158 kg (350 lb.), use appropriately rated lifting equipment.

6. Remove cap screws (H), nuts and removable endgate.

A—Bin Level Sensor
Connector
B—Removable Endgate
C—Nut
D—Grease Line

E—Bracket
F—Spring Pin
G—Jack Rod
H—Cap Screw (4 used)



CS12167,000056F -19-20MAR14-2/9

N101385 —UN—02JAN13

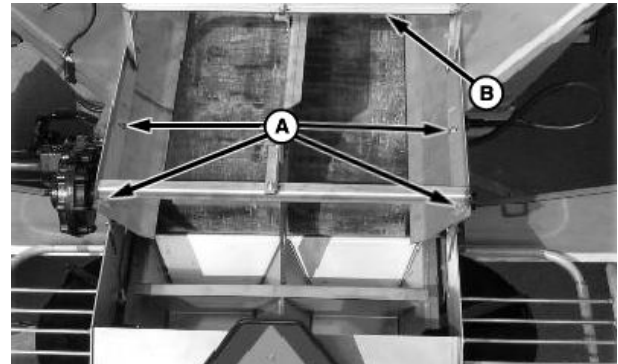
N101383 —UN—02JAN13

N101384 —UN—02JAN13

7. Remove and retain cap screws (A) and hillside divider (B).

A—Cap Screw

B—Hillside Divider



Continued on next page

CS12167,000056F -19-20MAR14-3/9

N98626 —UN—23MAY12

NOTE: Before placing the second product bin in hopper spray a light silicone film on hopper side sheets where insert seals will set.

8. Fasten a 4-point lifting device (A) to lift hooks.
9. Hoist empty second product bin into spreader as shown.
10. Use a large drift punch or equivalent to align slots and attach hardware (see table). Tighten to recommended torque.

Needed Hardware		
Description	Size	Quantity
Cap Screw	1/2 x 1-1/4 in. Grade 8	8
Flat Washer	1/2 in. Grade 8	16
Lock Washer	1/2 in. Grade 8	8
Hex Nut	1/2 in. Grade 8	8

11. Ensure a complete seal (B) is covering the gap between the second product bin and side sheets of spreader as shown. Tighten hardware.

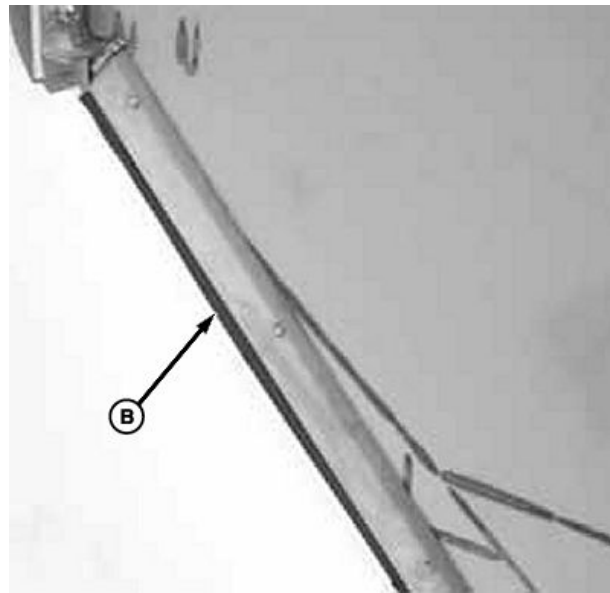
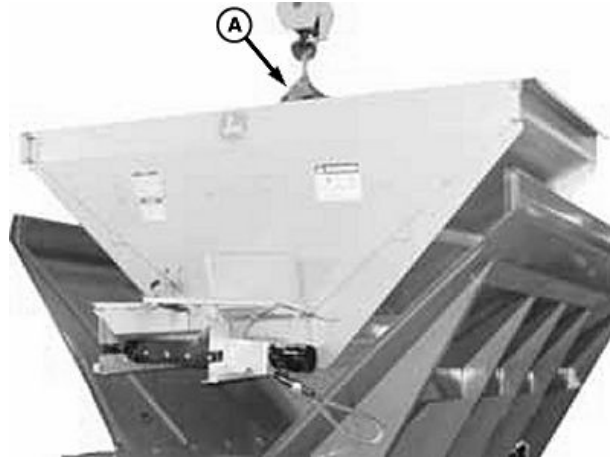
NOTE: Leakage of material may occur if the sealer belts are not set properly on the front of the second product bin. Manufacturer is not liable for lost material due to improperly installed sealer belts.

See General Operating Procedures in operator's manual for feedgate adjustment instructions.

12. Install previously removed bin level sensor in rear of second product bin.

A—4-Point Lifting Device

B—Seal



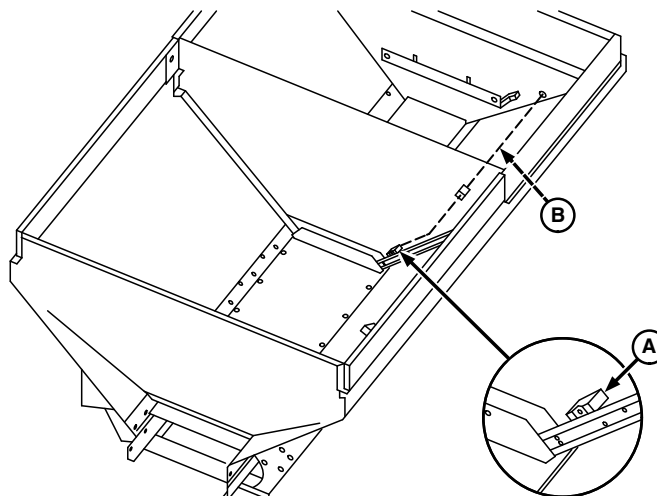
Second Product Bin Seal

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CS12167,000056F -19-20MAR14-4/9

N97126—UN—27FEB12

N97127—UN—27FEB12



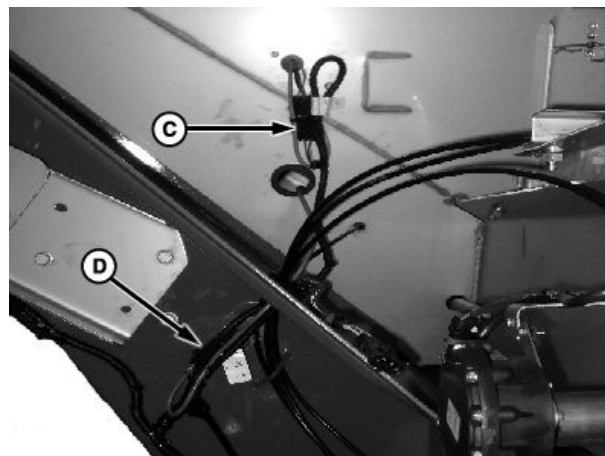
Bin 1 Extension Harness

NOTE: Bin 1 sensor (A) connects to an extension harness (B) routed along second product bin.

13. Plug bin level sensors into appropriately marked wiring harness connector (C and D) at rear of machine.

A—Bin 1 Sensor (Sensor 2)
B—Extension Harness

C—Bin 1 Connector
D—Bin 2 Connector



CS12167,000056F -19-20MAR14-5/9

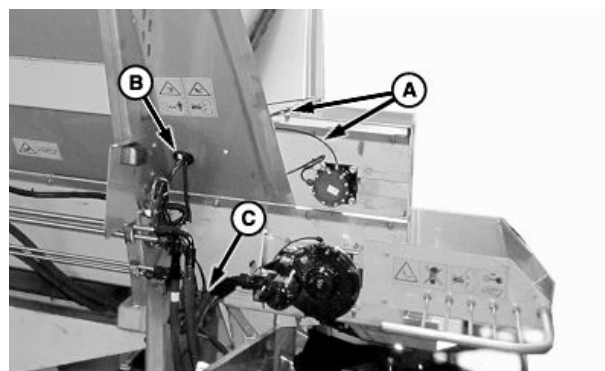
N98583 —UN—17MAY12

N98584 —UN—21MAY12

14. Route lubrication lines (A) through hole (B) as shown and install in grease bank (C).

A—Lubrication Lines
B—Hole

C—Grease Bank



Continued on next page

CS12167,000056F -19-20MAR14-6/9

N109663 —UN—30JAN14

15. Disconnect hoses at spreader connection (A) and second product bin motor (B) as shown.

A—Spreader Connection

B—Second Product Bin Motor



Detach Hoses

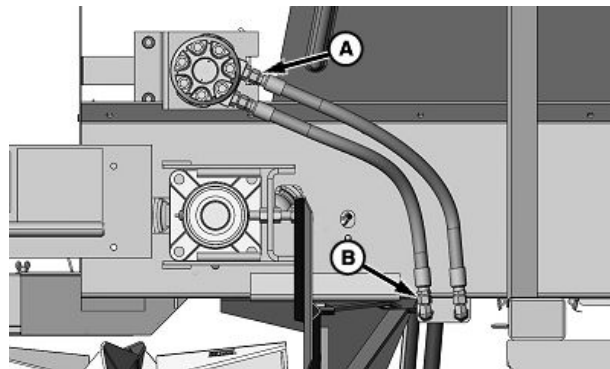
CS12167,000056F -19-20MAR14-7/9

N103531—UN—15MAY13

16. Attach second product bin hoses to spreader connection points as shown.

A—Female Connection from Spreader

B—Female Connection from Motor



Second Product Bin Hydraulic Connections

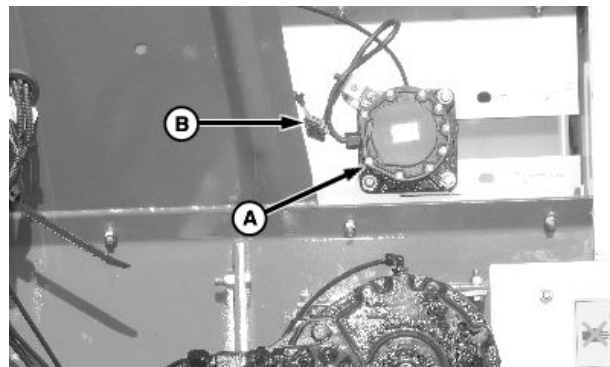
CS12167,000056F -19-20MAR14-8/9

N101305—UN—26APR13

17. Plug in rate controller (A) using connector (B).

A—Rate Controller

B—Connector



CS12167,000056F -19-20MAR14-9/9

N98625—UN—30MAY12

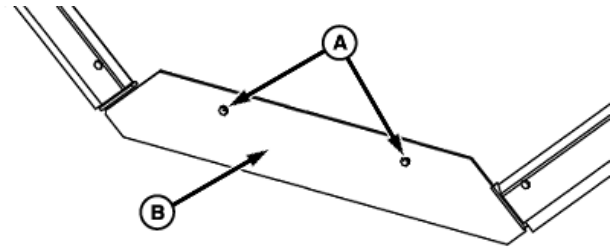
Install Second Product Bin—Spreaders with Straight Belt Conveyors

CAUTION: Stay out of the spreader. If it's necessary to enter the spreader, return to the shop, empty body, turn off all power, set vehicle brakes, lock engine starting switch and remove keys before entering. Tag all controls to prohibit operation. Tags should be placed, and later removed, only by person working in the body.

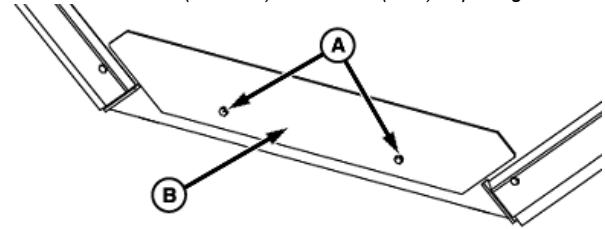
Use only lifting devices that meet or exceed OSHA standard 1910.184. Never exceed work load limits or lift equipment over people. Empty spreader before lifting. Loads may shift or fall if improperly supported, causing injury.

1. To adjust main bin's feedgate opening when a second product bin will be installed: position front feedgates on second product bin as necessary to achieve a 38 mm (1-1/2 in.), 51 mm (2 in.) or 76 mm (3 in.) opening.

Position both feedgates with short side down for a 3" (76 mm) opening. **Both feedgates are installed for shipping.**



38 mm (1 1/2 in.) or 51 mm (2 in.) Opening



76 mm (3 in.) Opening

A—Hardware

B—Front Feedgate

Continued on next page

CS12167,000053B -19-20MAR14-1/9

N97125—UN—27FEB12

N97124—UN—27FEB12

2. Disconnect bin level sensor (A) from harness on removable endgate (B).

3. Remove and retain nuts (C) and bin level sensor.

NOTE: Retain grease line to prevent damage during endgate removal.

4. Remove grease lines (D) from bracket (E).

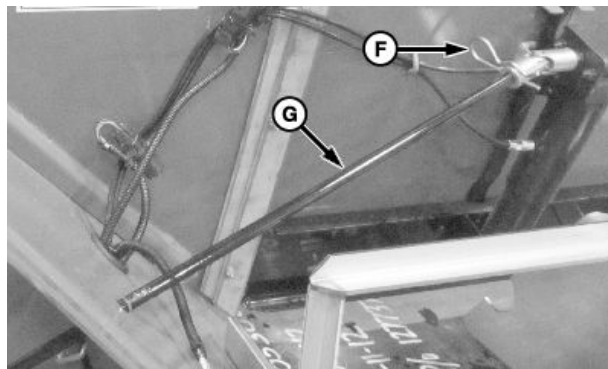
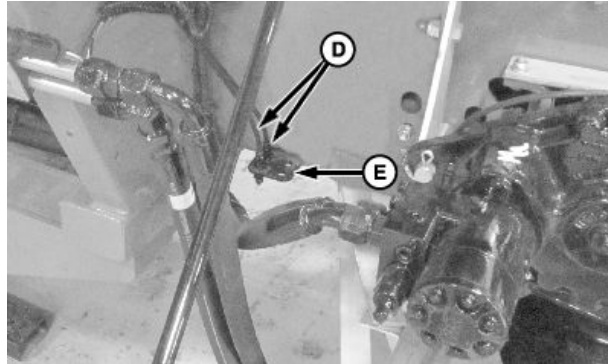
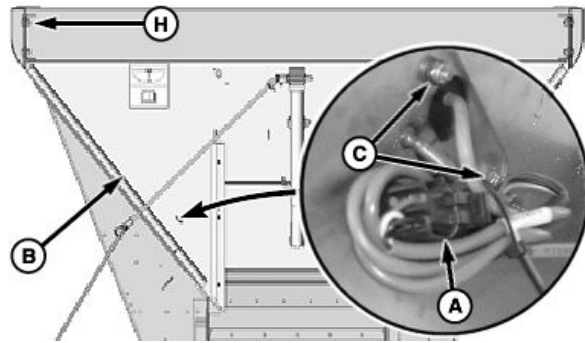
5. Remove and retain spring pin (F) and jack rod (G).

NOTE: Removable endgate weighs approximately 158 kg (350 lb.), use appropriately rated lifting equipment.

6. Remove cap screws (H), nuts and removable endgate.

A—Bin Level Sensor
Connector
B—Removable Endgate
C—Nut
D—Grease Line

E—Bracket
F—Spring Pin
G—Jack Rod
H—Cap Screw (4 used)

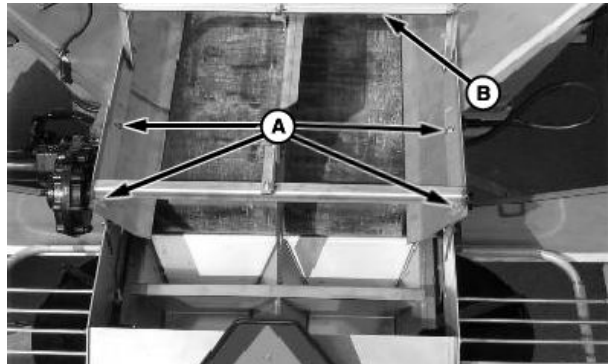


CS12167,000053B -19-20MAR14-2/9

7. Remove and retain cap screws (A) and hillside divider (B).

A—Cap Screw

B—Hillside Divider



Continued on next page

CS12167,000053B -19-20MAR14-3/9

NOTE: Before placing the second product bin in hopper spray a light silicone film on hopper side sheets where insert seals will set.

8. Fasten a 4-point lifting device (A) to lift hooks.
9. Hoist empty second product bin into spreader as shown.
10. Use a large drift punch or equivalent to align slots and attach hardware (see table). Tighten to recommended torque.

Needed Hardware		
Description	Size	Quantity
Cap Screw	1/2 x 1-1/4 in. Grade 8	8
Flat Washer	1/2 in. Grade 8	16
Lock Washer	1/2 in. Grade 8	8
Hex Nut	1/2 in. Grade 8	8

11. Ensure a complete seal (B) is covering the gap between the second product bin and side sheets of spreader as shown. Tighten hardware.

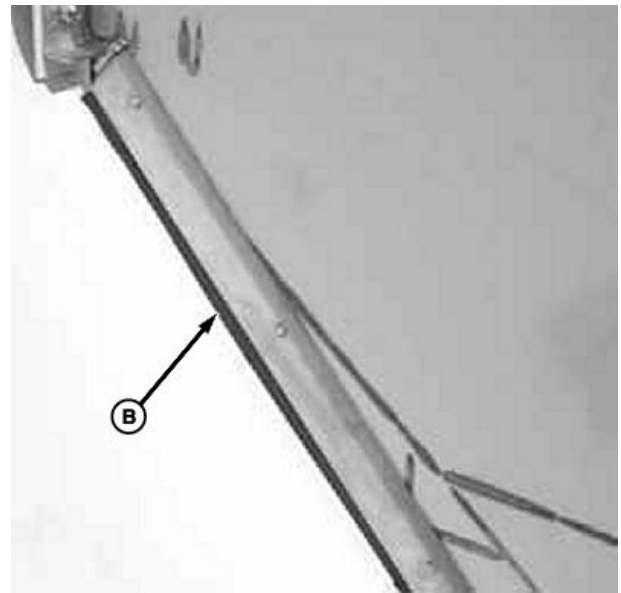
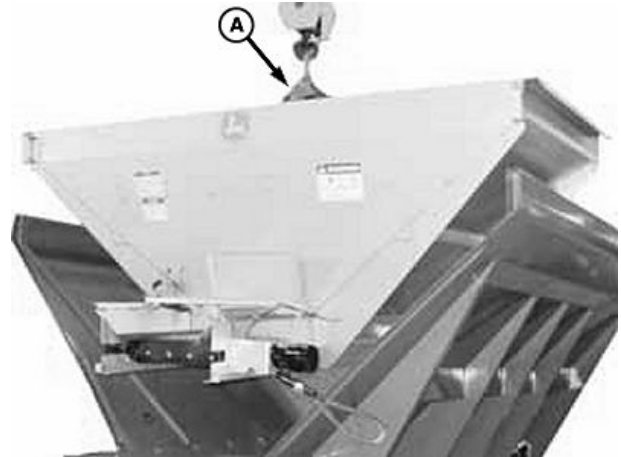
NOTE: Leakage of material may occur if the sealer belts are not set properly on the front of the second product bin. Manufacturer is not liable for lost material due to improperly installed sealer belts.

See General Operating Procedures in operator's manual for feedgate adjustment instructions.

12. Install previously removed bin level sensor in rear of second product bin.

A—4-Point Lifting Device

B—Seal



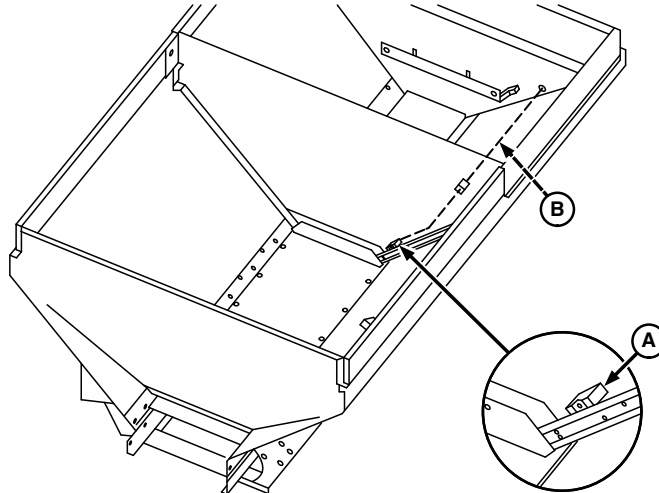
Second Product Bin Seal

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CS12167,000053B -19-20MAR14-4/9

N97126—UN—27FEB12

N97127—UN—27FEB12



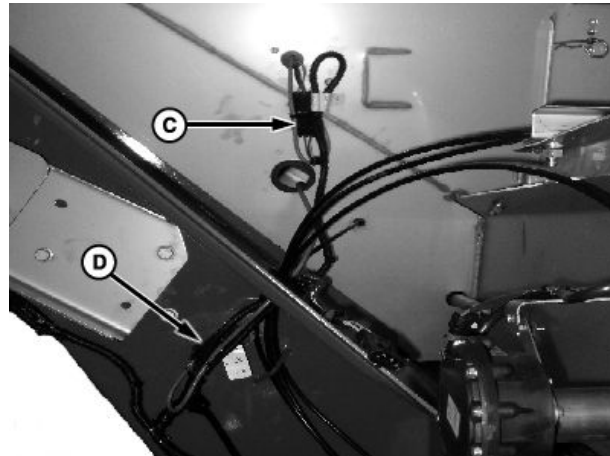
Bin 1 Extension Harness

NOTE: Bin 1 sensor (A) connects to an extension harness (B) routed along second product bin.

13. Plug bin level sensors into appropriately marked wiring harness connector (C and D) at rear of machine.

A—Bin 1 Sensor (Sensor 2)
B—Extension Harness

C—Bin 1 Connector
D—Bin 2 Connector



CS12167,000053B -19-20MAR14-5/9

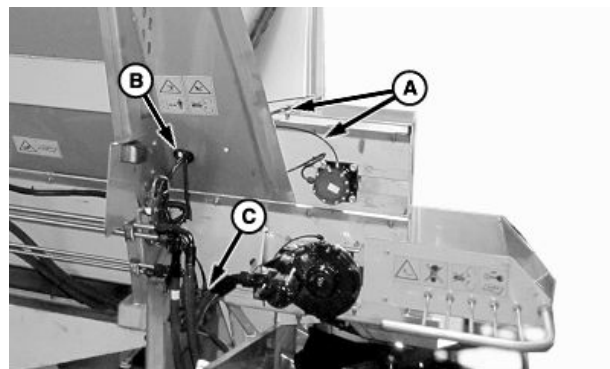
N98583 —UN—17MAY12

N98584 —UN—21MAY12

14. Route lubrication lines (A) through hole (B) as shown and install in grease bank (C).

A—Lubrication Lines
B—Hole

C—Grease Bank



Continued on next page

CS12167,000053B -19-20MAR14-6/9

N108683 —UN—30JAN14

15. Disconnect hoses at spreader connection (A) and second product bin motor (B) as shown.

A—Spreader Connection

B—Second Product Bin Motor



Detach Hoses

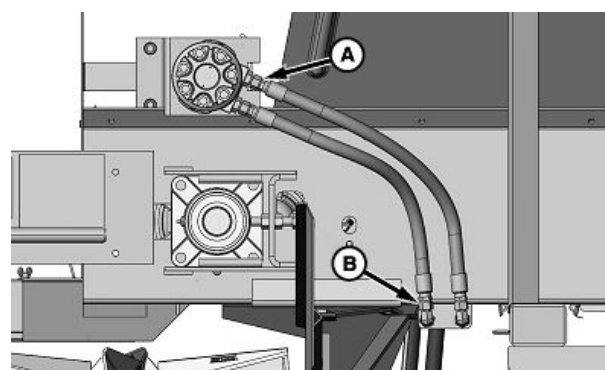
CS12167,000053B -19-20MAR14-7/9

N103531 —UN—15MAY13

16. Attach second product bin hoses to spreader connection points as shown.

A—Female Connection from Spreader

B—Female Connection from Motor



Second Product Bin Hydraulic Connections

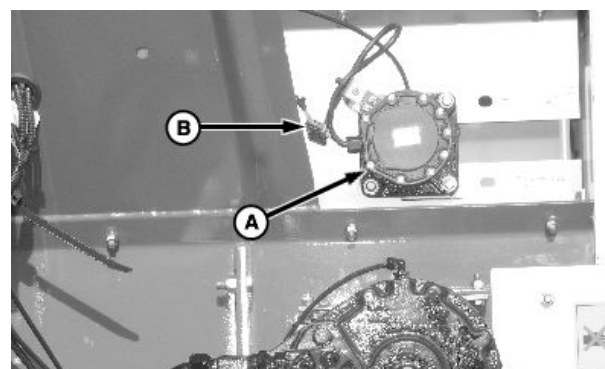
CS12167,000053B -19-20MAR14-8/9

N101305 —UN—26APR13

17. Plug in rate controller (A) using connector (B).

A—Rate Controller

B—Connector



CS12167,000053B -19-20MAR14-9/9

N98625 —UN—30MAY12

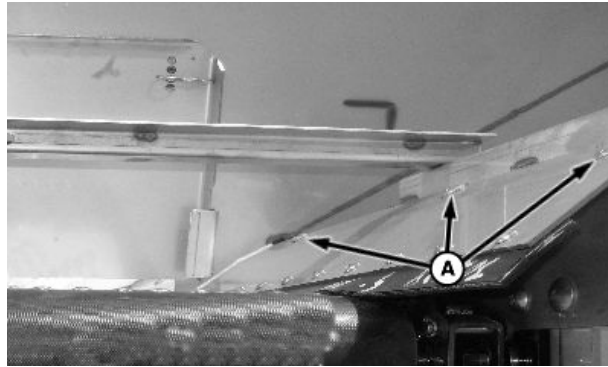
Install Second Product Bin Hillside Divider

NOTE: Deere and Company will not be liable for misapplied material due to an improperly adjusted divider, spreader or both.

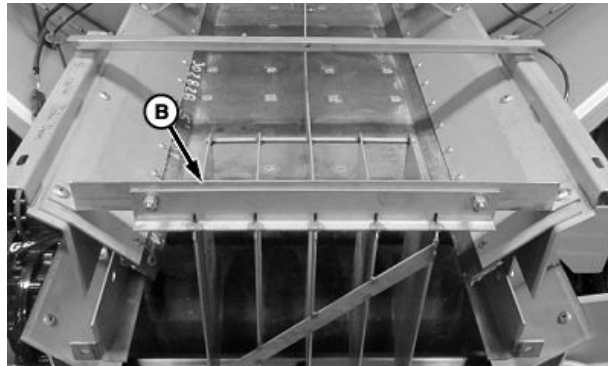
1. Remove and retain hardware (A) from both sides of chain shield.
2. Install second product bin hillside divider (B) over conveyors and retain using previously removed chain shield hardware.

A—Chain Shield Hardware

B—Second Product Bin Hillside Divider



N98627—UN—23MAY12



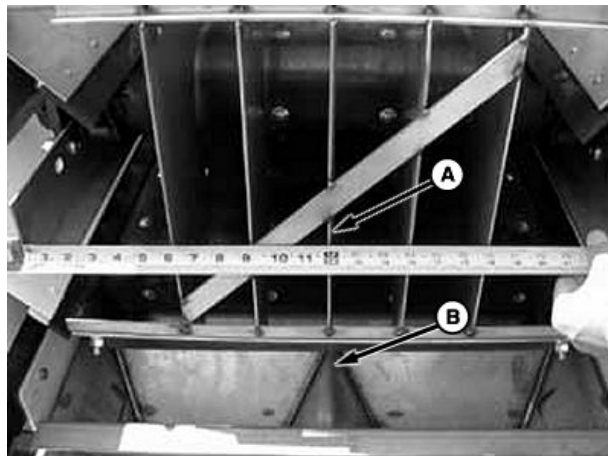
N103532—UN—26APR13

OUC6077,0000015 -19-25APR13-1/2

3. Adjust hillside divider so that the middle divider (A) is centered over both conveyors and the spinner material divider (B) as shown.
4. Tighten hardware to recommended torque.

A—Middle Divider

B—Spinner Material Divider



N97222—UN—01JUN12

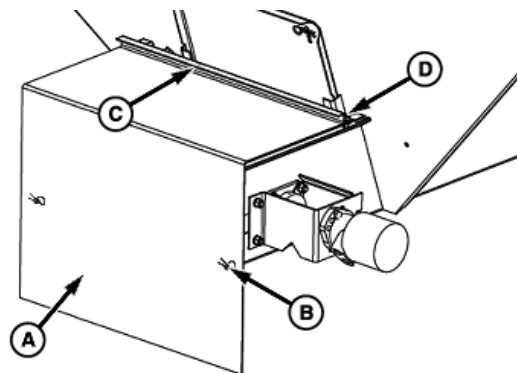
OUC6077,0000015 -19-25APR13-2/2

Install Dual Conveyor Cover

1. Place cover (A) on second product bin sills as shown and insert spring pins (B) through cover pins.
2. Position hold-down (C) over cover and attach with hardware (D).

A—Cover
B—Spring Pin (2 used)

C—Hold-down
D—Hardware, 3/8 x 1 in. Cap Screw, Washer and Nut (6 used)



N97223—UN—13APR12

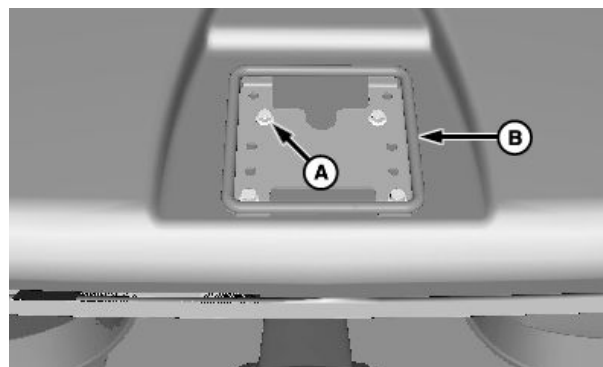
OUC6435,000069D -19-04JUN12-1/1

Install StarFire™ Receiver Bracket (EU Exports Only)

1. Remove and retain screws (A) from StarFire Receiver bracket.
2. Remove and retain StarFire Receiver mounting bracket (B).

A—Cap Screw, (4 Used)

B—StarFire Receiver Mounting Bracket



N101307—UN—18DEC12

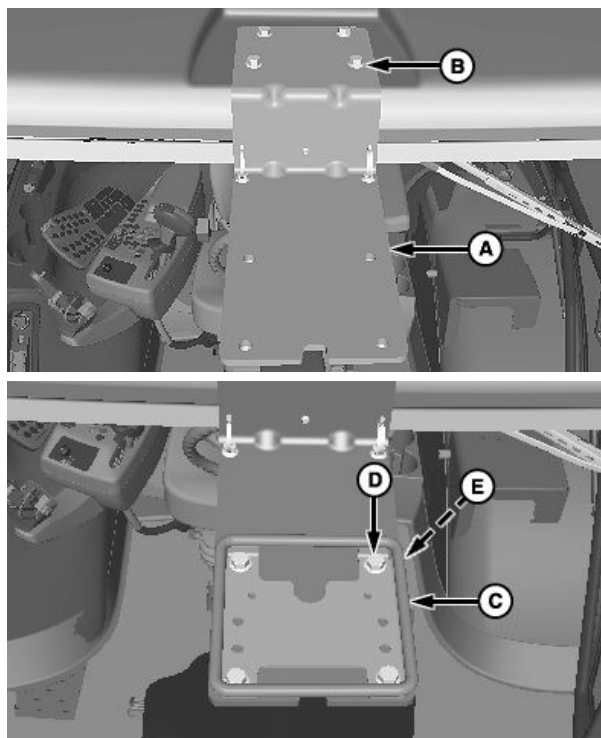
StarFire is a trademark of Deere & Company

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CS12167,000038C -19-14MAY13-1/2

3. Install EU cab mount bracket (A) using previously removed cap screws (B).
4. Install previously removed StarFire Receiver mounting bracket (C) using supplied cap screws (D) and nuts (E).

A—EU Cab Mount Bracket
 B—Cap Screw, (4 Used)
 C—GPS Mounting Bracket
 D—Cap Screw, (4 Used)
 E—Nuts, (4 Used)



N101308—UN—18DEC12

N101309—UN—18DEC12

CS12167,000038C -19-14MAY13-2/2

Install Speed Limit Decal

Verify correct speed limit decal (A) is installed on machine.

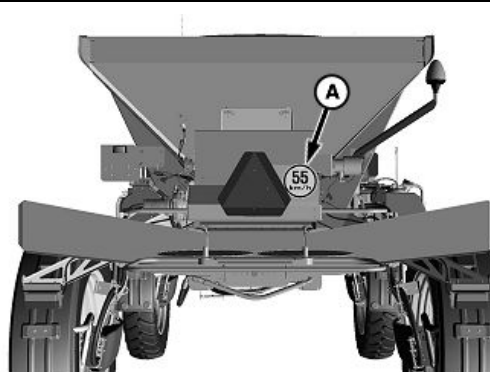
- If your location is listed in the table provided then the speed limit decal must be replaced with correct decal.
- If your location is not shown and the dry spreader is installed on the R4030, a 50 km/h decal must be installed. Decal is located in machine shipping crates along with Operator's Manual packet.
- If your location is not shown and the dry spreader is installed on the R4038 or the R4045, the correct decal is already installed.

Consult with local authorities to ensure the correct decal is installed.

Country	R4030	R4038	R4045
Belarus	40 km/h	40 km/h	40 km/h
Czech Republic	40 km/h	40 km/h	40 km/h
Hungary	40 km/h	40 km/h	40 km/h
Kazakhstan	40 km/h	40 km/h	40 km/h
Romania	40 km/h	40 km/h	40 km/h
Russia	20 km/h	20 km/h	20 km/h
Ukraine	40 km/h	40 km/h	40 km/h

If correct decal is not installed on machine use the following procedure to install correct decal.

IMPORTANT: Ensure decal adhesion. Before applying decals, clean all dirt, grease, oil,



A—Speed Limit Decal

and moisture from application area. Surface temperature should be greater than 15° C (60° F) for best adhesion.

1. Use image and table in this section to correctly identify and locate decal placement.
2. Remove paper backing from decal.
3. Press one edge of decal on application area.
4. Smooth out air pockets while slowly pressing across decal to opposite edge. Verify complete decal adhesion.

N103731—UN—10MAY13

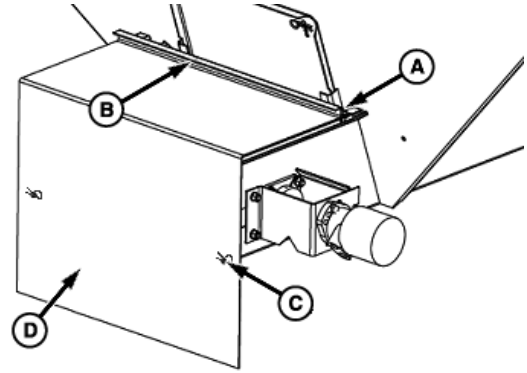
CS12167,00004AA -19-31OCT13-1/1

Remove Second Product Bin and Install Endgate

CAUTION: Stay out of the spreader. If it's necessary to enter the spreader, return to the shop, empty body, turn off all power, set vehicle brakes, lock engine starting switch and remove keys before entering. Tag all controls to prohibit operation. Tags should be placed, and later removed, only by person working in the body.

Use only lifting devices that meet or exceed OSHA standard 1910.184. Never exceed work load limits or lift equipment over people. Empty spreader before lifting. Loads may shift or fall if improperly supported, causing injury.

1. Verify second product bin is completely empty of material before beginning removal procedure.
2. Remove hardware (A), hold-down (B), spring pins (C) and cover (D).



A—Hardware, 3/8 x 1 in. Cap Screw, Washer and Nut (6 used)
B—Hold-down
C—Spring Pin (2 used)
D—Cover

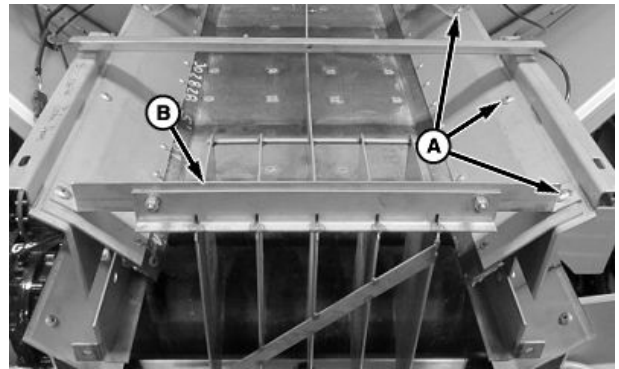
N98714—UN—31MAY12

CS12167,000053C -19-29JAN14-1/9

3. Remove and retain hardware (A) from both sides and second product bin hillside divider (B). Retain hillside divider hardware in original holes for future use.

A—Hardware

B—Second Product Bin Hillside Divider



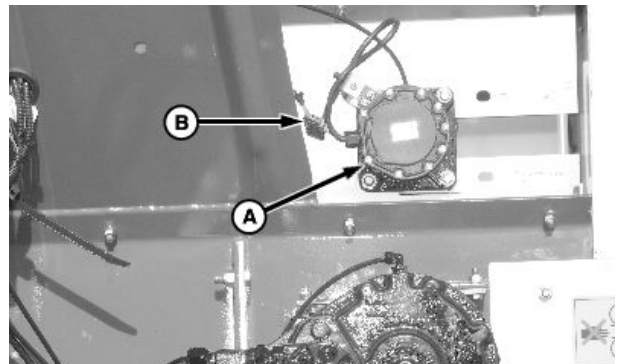
N103533—UN—26APR13

CS12167,000053C -19-29JAN14-2/9

4. Disconnect rate controller (A) at connector (B).

A—Rate Controller

B—Connector



N98625—UN—30MAY12

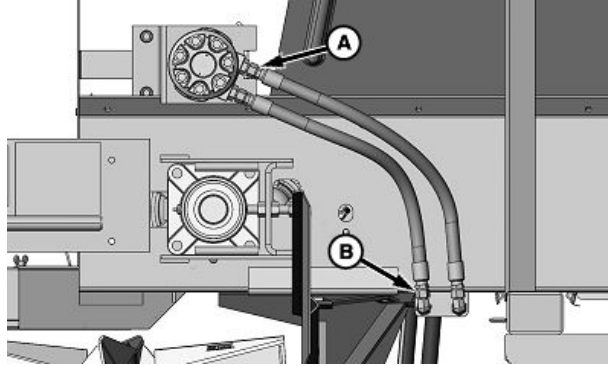
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CS12167,000053C -19-29JAN14-3/9

5. Disconnect second product bin conveyor drive hoses at (A) and (B).
6. Connect hose from motor to male end on motor and hose from spreader to male end on spreader.

**A—Female Connector from
Spreader**

**B—Female Connector from
Motor**



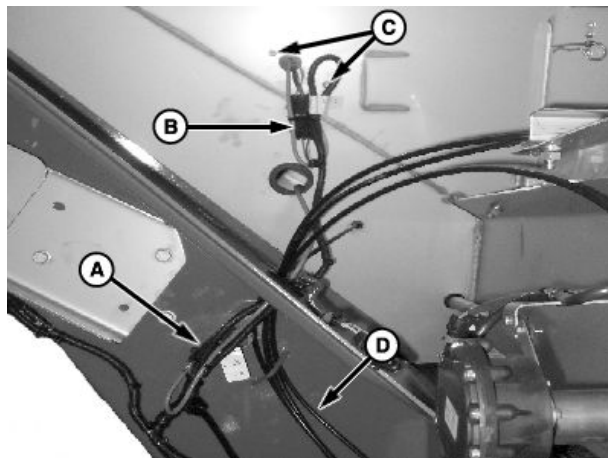
N101305 —UN—26APR13

CS12167,000053C -19-29JAN14-4/9

7. Disconnect bin level sensors (A and B).
8. Remove and retain hardware (C) and bin level sensor.
9. Disconnect lubrication lines (D) from grease bank.

**A—Bin 2 Connector
B—Bin 1 Connector**

**C—Hardware
D—Lubrication Lines**



N98717 —UN—30JAN14

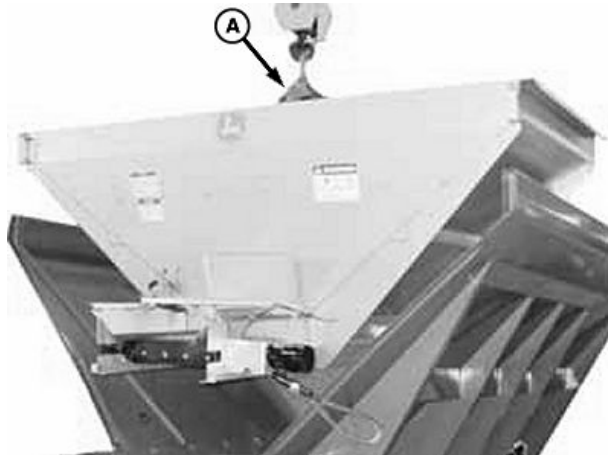
CS12167,000053C -19-29JAN14-5/9

10. Remove and retain second product bin mounting hardware.
11. Fasten four point lifting device (A) to lift hooks in second product bin.

NOTE: *Second product bin weighs approximately 431 kg (950 lb.).*

12. Hoist empty second product bin from spreader as shown.

A—4 Point Lifting Device



N97126 —UN—27FEB12

Continued on next page

CS12167,000053C -19-29JAN14-6/9

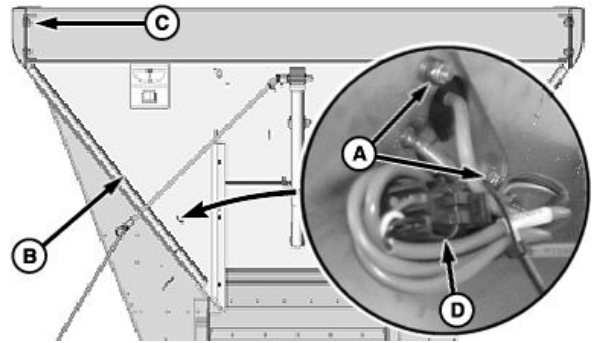
13. Using previously removed hardware (A) install bin level sensor in removable endgate (B).

NOTE: Removable endgate weighs approximately 158 kg (350 lb.), use appropriately rated lifting equipment.

14. Using proper lifting device position endgate in spreader and retain using hardware (C).
15. Connect bin level sensor to harness connection labeled **bin 1**.

A—Hardware, Previously Removed
B—Removable Endgate

C—Endgate Hardware
D—Bin Sensor Connection



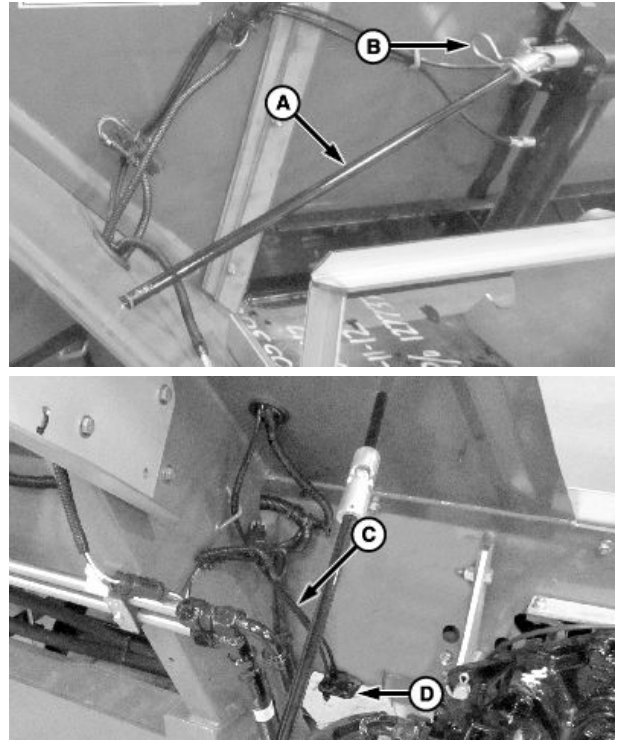
N98718 —UN—31MAY12

CS12167,000053C -19-29JAN14-7/9

16. Install jack rod (A) and spring pin (B).
17. Retain grease lines (C) to bracket (D).

A—Jack Rod
B—Spring Pin

C—Grease Lines
D—Bracket



N101386 —UN—03JAN13

N101387 —UN—03JAN13

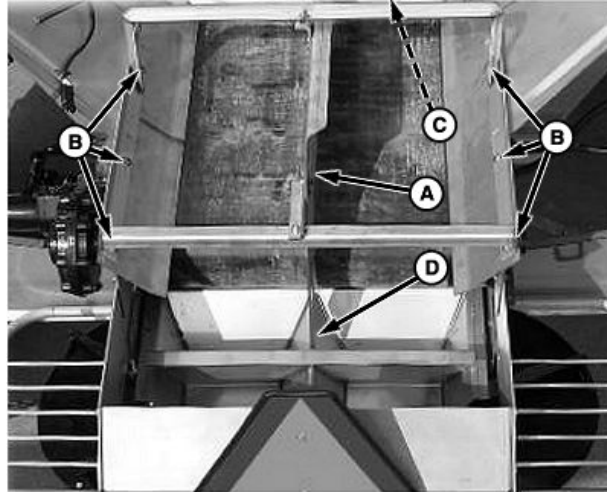
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CS12167,000053C -19-29JAN14-8/9

18. Install hillside divider (A) using hardware (B).
19. Adjust hillside divider so that the middle divider is centered with feedgate (C) and material divider (D). Loosen hardware and adjust if necessary.

A—Hillside Divider
B—Hardware

C—Feedgate
D—Material Divider



NS8719 —UN—31MAY12

CS12167,000053C -19-29JAN14-9/9

Roll Tarp Installation

Parts List

End Cap Kit (2 used)

DN456		DN485	
Description	Quantity	Description	Quantity
Top Mounted End Cap, 304 mm (12 in.) Rise x 2413 mm (95 in.)	1	Top Mounted End Cap, 304 mm (12 in.) Rise x 3022 mm (119 in.)	1
Cap Screw, Flange 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	4	Cap Screw, Flange 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	4
Lock Washer, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	10	Lock Washer, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	10
Nut, 9.5 mm (3/8 in.)	10	Nut, 9.5 mm (3/8 in.)	10
Washer, 9.5 mm (3/8 in.)	10	Washer, 9.5 mm (3/8 in.)	10
Cap Screw, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	6	Cap Screw, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	6
Bracket	2	Bracket	2

Bow Kit (3 used)

DN456		DN485	
Description	Quantity	Description	Quantity
Rod, 2451 mm (96-1/2 in.)	1	Rod, 3048 mm (120 in.)	1
Nut, 9.5 mm (3/8 in.)	2	Nut, 9.5 mm (3/8 in.)	2
Lock Washer	2	Lock Washer	2
Cap Screw, Flange 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	2	Cap Screw, Flange 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	2

Tarp Kit

DN456		DN485	
Description	Quantity	Description	Quantity
Tarp	1	Tarp	1
Washer, Plastic 6.4 mm (1/4 in.) x 15.9 mm (5/8 in.)	2	Washer, Plastic 6.4 mm (1/4 in.) x 15.9 mm (5/8 in.)	2
Screw, Self-Tapping 6.4 mm (1/4 in.)x 19 mm (3/4 in.)	2	Screw, Self-Tapping 6.4 mm (1/4 in.)x 19 mm (3/4 in.)	2
Rivet, 4.8 mm (3/16 in.)x 9.5 mm (3/8 in.)x 15.9 mm (5/8 in.)	2	Rivet, 3/16 x 3/8 x 5/8 in.	2
Plug, 25.4 mm (1 in.)	2	Plug, 25.4 mm (1 in.)	2
Fixed Tube, 25.4 mm (1 in.) x 3105 mm (122-1/4 in.)	1	Fixed Tube, 25.4 mm (1 in.) x 3105 mm (122-1/4 in.)	1
Roll Tube Assembly	1	Roll Tube Assembly	1

Tarp Stop Kit—DN456 and DN485 (3 used)

Description	Quantity
Stop, Upright	1
Cotter Pin	2
Stop, Body	1
Pin	2
Nut, 9.5 mm (3/8 in.)	2
Lock Washer, 9.5 mm (3/8 in.)	2
Cap Screw, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	2
Washer, Flat 9.5 mm (3/8 in.)	2

Ratchet Strap Kit—DN456 and DN485 (2 used)

Description	Quantity
Ratchet Strap, 457.2 mm (18 in.)	1

Continued on next page

TB90758,0001A44 -19-19MAY15-1/2

Nut, 9.5 mm (3/8 in.)	2
Lock Washer, 9.5 mm (3/8 in.)	2
Washer, 9.5 mm (3/8 in.)	2
Cap Screw, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	2
Cable, Stainless Steel 3530 mm (139 in.)	1

Ridge Strap Kit—DN456 and DN485

Description	Quantity
Ratchet, 25.4 mm (1 in.)	1
Ridge Strap, 254 mm (10 in.)	1

Telescoping Crank Arm—DN456 and DN485

Description	Quantity
Crank Arm, 1955—2845 mm (77—112 in.)	1
Flex Arm Joint, 304 mm (12 in.)	1

Telescoping Crank Retainer Assembly—DN456 and DN485 (2 used)

Description	Quantity
Cap Screw, 9.5 mm (3/8 in.) x 19 mm (3/4 in.)	2
Bracket, Offset	1
Crank Retainer	1
Pin, Round 6.4 mm (1/4 in.) x 25.4 mm (2 in.)	1
Cable	1
Nut, 9.5 mm (3/8 in.)	2

Telescoping Crank Retainer Bracket Assembly—DN456 and DN485

Description	Quantity
Bracket, Right-Hand	1
Bracket, Left-Hand	1
Cap Screw, 9.5 mm (3/8 in.) x 25.4 mm (1 in.)	6
Washer, 9.5 mm (3/8 in.)	4
Lock Washer, 9.5 mm (3/8 in.)	4
Nut, 9.5 mm (3/8 in.)	4

TB90758,0001A44 -19-19MAY15-2/2

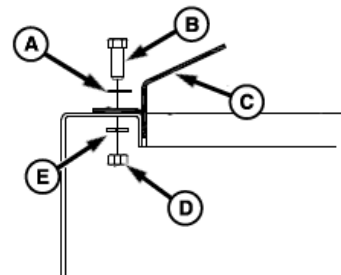
Install Roll Tarp

Install End Caps

IMPORTANT: The DN456 or DN485 box needs to be installed on the chassis before installing tarp. Installed tarp will not allow access to lift hooks to hoist the box.

Supplied kits contain stainless steel hardware, replacement parts used should be stainless steel.

1. Align holes in bracket (C) to holes in top rail. Secure using supplied nut (D), cap screw (B), washer (A), and lock washer (E).
2. Repeat procedure to install remaining brackets.



A—Washer
B—Cap Screw
C—Bracket

D—Nut
E—Lock Washer

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TB90758,0001A43 -19-11MAY15-1/22

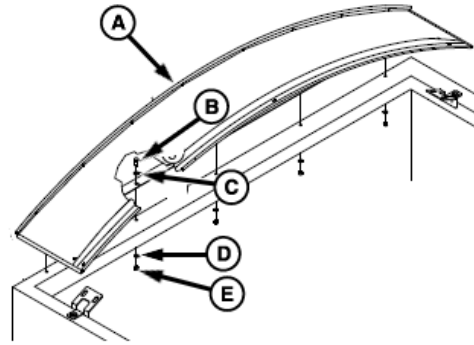
N117480—UN—15APR15

NOTE: Front-end cap shown, back-end cap is similar.

3. Attach end cap (A) with supplied cap screws (B), nuts (E), lock washers (D), washers (C).
4. Repeat procedure for opposite endcap.

A—End Cap
B—Cap Screws (5 used)
C—Washers (5 used)

D—Lock Washers (5 used)
E—Nuts (5 used)



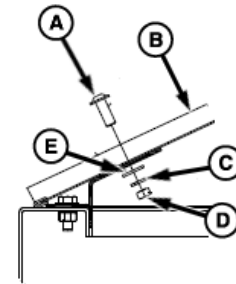
TB90758,0001A43 -19-11MAY15-2/22

N117481—UN—15APR15

5. Align bracket holes with end cap holes. Secure with supplied button head cap screws (A), nuts (D), lock washers (C), and washers (E).
6. Repeat procedure for remaining brackets.

A—Button Head Cap Screw
B—End Cap
C—Lock Washer

D—Nut
E—Washer



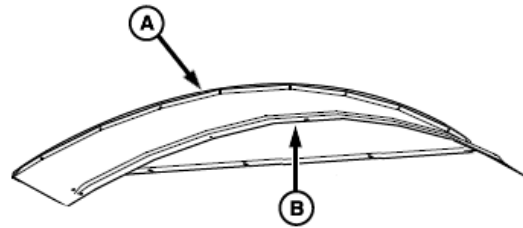
TB90758,0001A43 -19-11MAY15-3/22

N117482—UN—15APR15

7. Push up on end cap (A), at point (B), while fastening to bracket to ensure that end cap is level with spreader box.

A—End Cap

B—Lifting Point



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TB90758,0001A43 -19-11MAY15-4/22

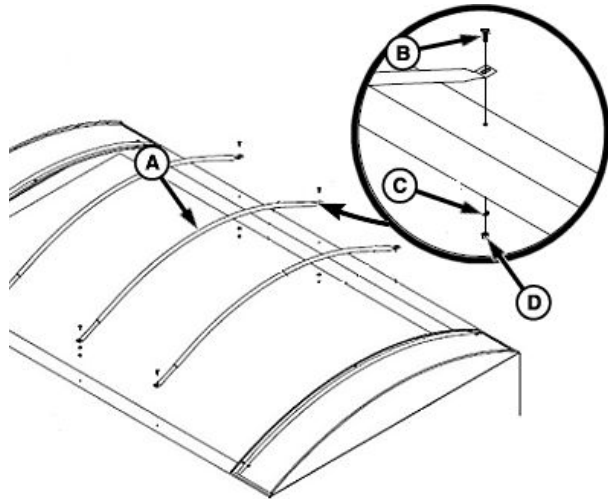
N117479—UN—15APR15

Install Bows

1. Attach supplied nuts (D), cap screws (B), washers (C), and bows (A) to top of spreader box. Repeat on opposite side.
2. Repeat procedure for each bow.

A—Bow
B—Cap Screw

C—Washer
D—Nut



NY17309—UN—13APR15

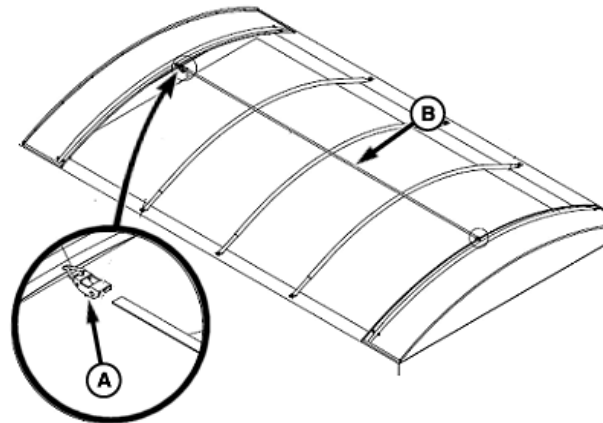
TB90758,0001A43 -19-11MAY15-5/22

IMPORTANT: Ensure that ridge strap buckle is facing down to prevent damage to tarp.

3. Attach ridge strap buckle (A) and ridge strap (B).

A—Buckle

B—Ridge Strap



NY17310—UN—13APR15

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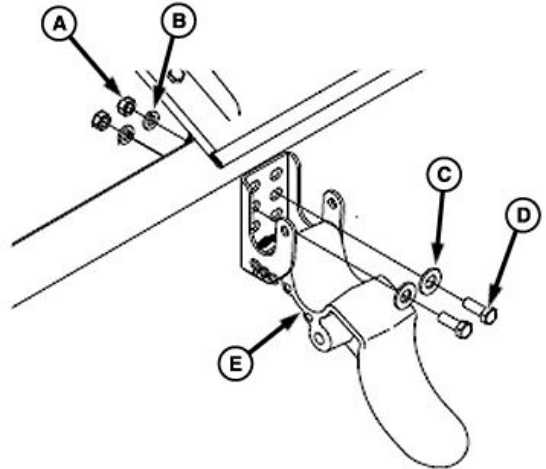
TB90758,0001A43 -19-11MAY15-6/22

Install Tarp Stops and Roll Tarp

1. Install tarp stop (E) to spreader box using with supplied nut (A), cap screw (D), lock washer (B), and washer (C).
2. Repeat procedure for each tarp stop.

A—Nut
B—Lock Washer
C—Washer

D—Cap Screw
E—Tarp Stop



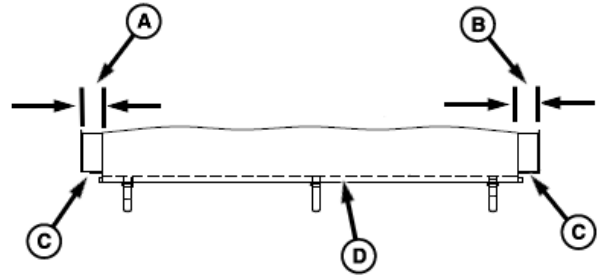
N117801 —UN—06MAY15

TB90758,0001A43 -19-11MAY15-7/22

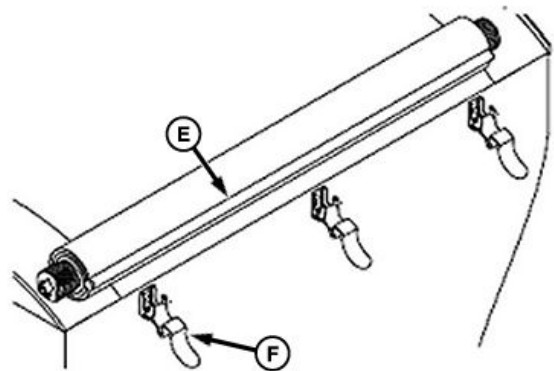
3. Ensure distances (A and B) on end caps (C) are equal.
4. Center roll tarp (D) on spreader with fixed tube (E) on tarp stops (F) side of spreader.
5. Unroll tarp so fixed tube rests squarely in tarp stop.

A—Distance
B—Distance
C—End Caps (2 used)

D—Roll Tarp
E—Fixed Tube
F—Tarp Stop (3 used)



N117316 —UN—15APR15



N117317 —UN—15APR15

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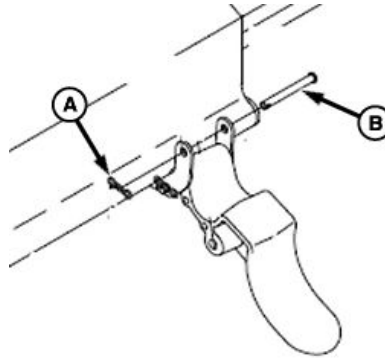
TB90758,0001A43 -19-11MAY15-8/22

NOTE: Ensure that tarp stop spring pins are installed towards the rear of spreader.

6. Insert cotter pin (A) and pin (B) into tarp stop locking fixed tube into tarp stop.
7. Repeat procedure for each tarp stop.
8. Ensure that tarp is square with spreader body. Unlock tarp stops and adjust if necessary.

A—Cotter Pin

B—Pin



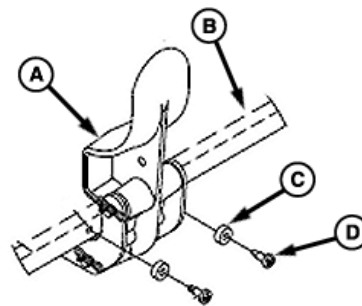
N117318—UN—15APR15

TB90758,0001A43 -19-11MAY15-9/22

9. Hold plastic washers (C) along side middle tarp stop (A).
10. Using washers for guides drill two 3/16 in. holes through tarp and into fixed tube (B).
11. Install plastic washers and cap screws (D).

A—Middle Tarp Stop
B—Fixed Tube

C—Plastic Washer (2 used)
D—Cap Screw (2 used)



N117483—UN—15APR15

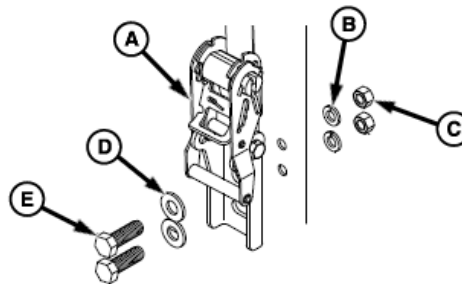
TB90758,0001A43 -19-11MAY15-10/22

Install Cables and Ratchets

1. Install ratchet (A), caps screws (E), washers (D), lock washer (B), and nuts (C). Do not tighten hardware now.

A—Ratchet
B—Lock Washer (2 used)
C—Nut (2 used)

D—Washer (2 used)
E—Cap Screw (2 used)



N117485—UN—15APR15

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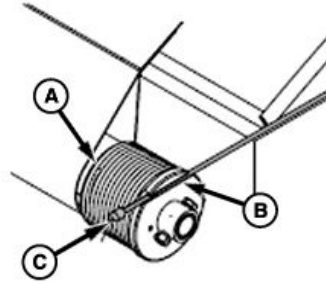
TB90758,0001A43 -19-11MAY15-11/22

Roll Tarp Installation

2. Unroll tarp to closed position.
3. Install stop sleeve end of cables (C) into channels (B) on spools (A).
4. Pull cables forward and lock into channel.

A—Spool (2 used)
B—Channel (2 used)

C—Stop Sleeve (2 used)



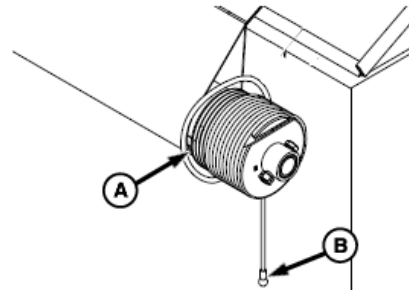
N117486—UN—15APR15

TB90758,0001A43 -19-11MAY15-12/22

5. Wrap cables into grooves on spools, in clockwise direction, until cables reach slot (A).
6. Install ball ends (B) of cables into ratchets.

A—Slot (2 used)

B—Ball End (2 used)

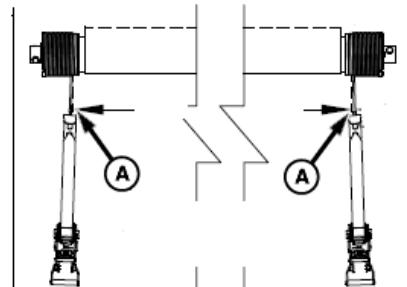


N117487—UN—15APR15

TB90758,0001A43 -19-11MAY15-13/22

7. Adjust ratchets so ball ends of cables move 6.35 mm (.25 in.) in an outward direction (A) from plumb position.
8. Tighten ratchet hardware.

A—Direction



N117489—UN—15APR15

Continued on next page

TB90758,0001A43 -19-11MAY15-14/22

9. Tighten ratchets (B) to remove slack from cable and apply tension on roll tarp. Note position of channels (A) on front and rear spools as initial tension is reached.

10. Tighten ratchets so channels rotate 90 degrees from original position.

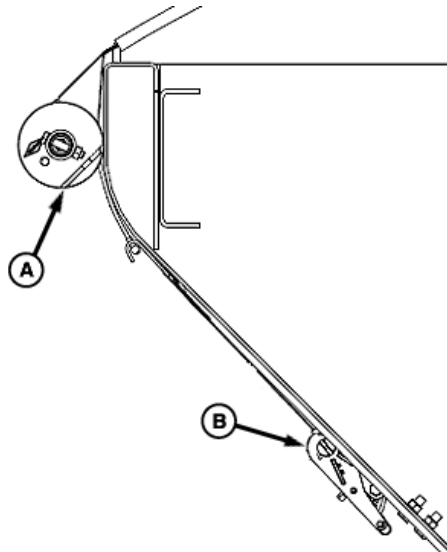
NOTE: Ratchets must be in locked position to hold tension. Do not release ratchets to operate system.

11. Open and close tarp five or six times to allow cables to seat in spool grooves and tarp to pull tight.

12. Check position of channels and retighten ratchet to rotate channels 90 degrees from their initial position.

A—Channel (2 used)

B—Ratchet (2 used)



TB90758,0001A43 -19-11MAY15-15/22

N117488 —UN—15APR15

Install Telescoping Crank

1. Attach spacer (D) onto cartridge tube (A) on rear, red end, of roll tube (F).
2. Attach flex arm joint (C) into cartridge tube. Secure with supplied cap screw (E) and nut (B).

A—Cartridge Tube

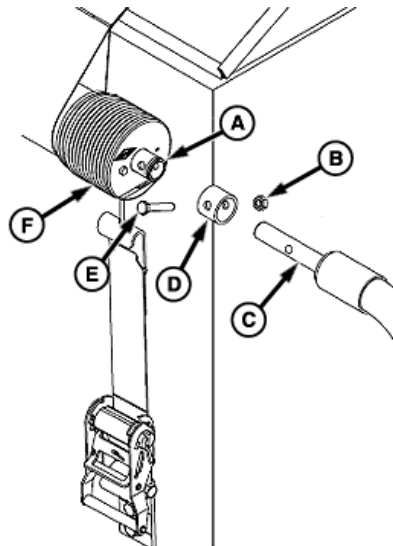
B—Nut

C—Flex Arm Joint

D—Spacer

E—Cap Screw

F—Roll Tube



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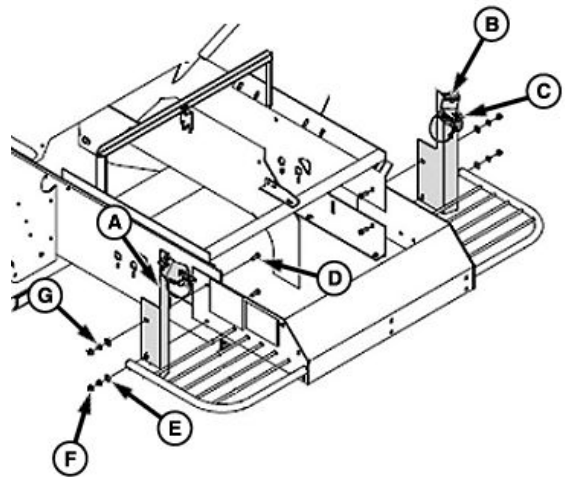
TB90758,0001A43 -19-11MAY15-16/22

N117516 —UN—16APR15

Install Telescoping Crank Retainer Bracket

1. Install telescoping crank retainer bracket (A) with supplied nuts (F), caps screws (D), washers (E), and lock washers (G).
2. Attach telescoping crank retainers (C) using supplied cap screws (B).
3. Repeat procedure for opposite retainer bracket.

A—Telescoping Crank Retainer Bracket
 B—Cap Screw
 C—Telescoping Crank Retainer
 D—Cap Screw (2 used)
 E—Washer (2 used)
 F—Nut (2 used)
 G—Lock Washer (2 used)

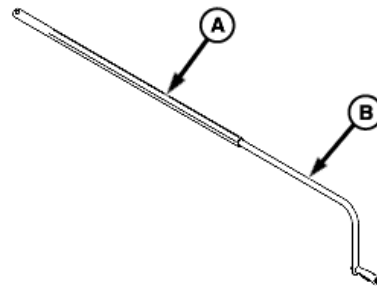


TB90758,0001A43 -19-11MAY15-17/22

N117517 —UN—16APR15

4. To change angle of handle (B) while crank is in retainer, slide handle into hex tube (A) until it stops. Rotate handle to desired angle, pull handle out to desired length.

A—Hex Tube
 B—Handle



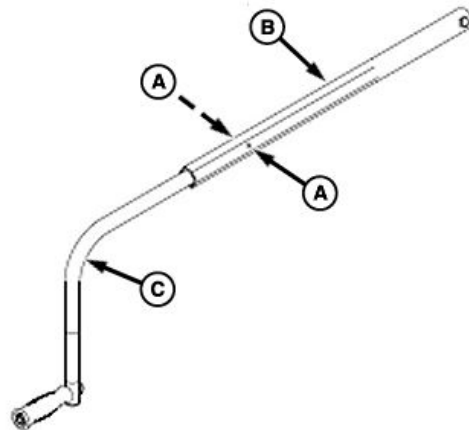
TB90758,0001A43 -19-11MAY15-18/22

N117518 —UN—17APR15

Install Telescoping Crank Arm

1. Secure hex tube (B) in vise.
2. Hold in buttons (A) and pull crank arm (C) out of hex tube.

A—Button (2 used)
 B—Hex Tube
 C—Crank Arm



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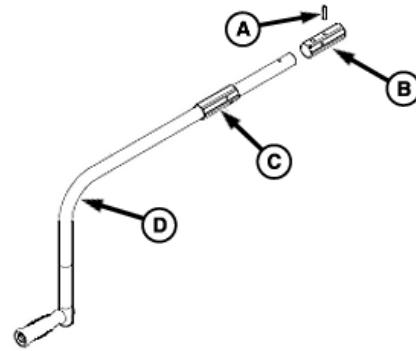
TB90758,0001A43 -19-11MAY15-19/22

N117519 —UN—17APR15

3. Remove and retain spring pin (A) and bearings (B and C) from crank arm (D).

A—Spring Pin
B—Bearing

C—Bearing
D—Crank Handle



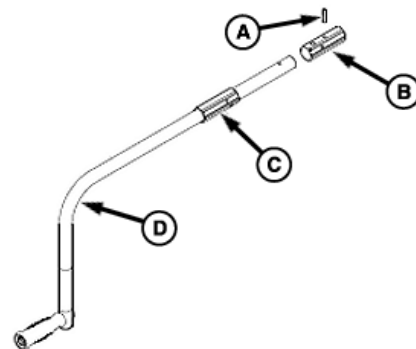
N117520—UN—17APR15

TB90758,0001A43 -19-11MAY15-20/22

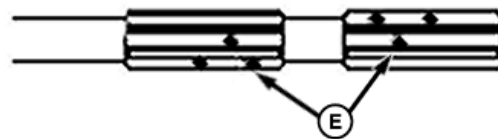
4. Install bearing (C) onto crank handle (D).
5. Install bearing (B).
6. Ensure holes (E) are aligned as shown.
7. Install spring pin (A).

A—Spring Pin
B—Bearing
C—Bearing

D—Crank Handle
E—Holes (as required)



N117520—UN—17APR15



N117521—UN—17APR15

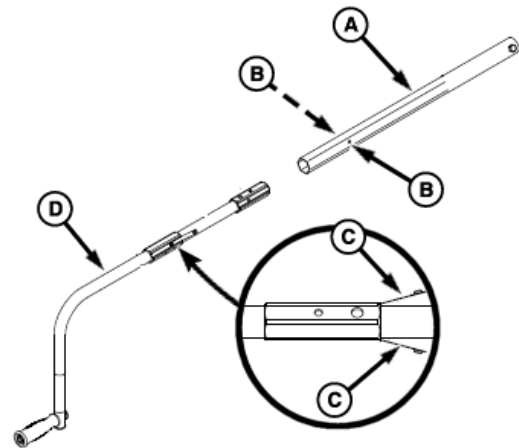
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TB90758,0001A43 -19-11MAY15-21/22

8. Install crank handle (D) into hex tube (A), aligning grooves in bearings with holes in hex tube.
9. Hold spring clips (C) as shown.
10. Install bearing with spring clips into hex tube until spring clips snap into holes (B) in hex tube.

A—Hex Tube
B—Holes (2 used)

C—Spring Clips (2 used)
D—Crank Handle

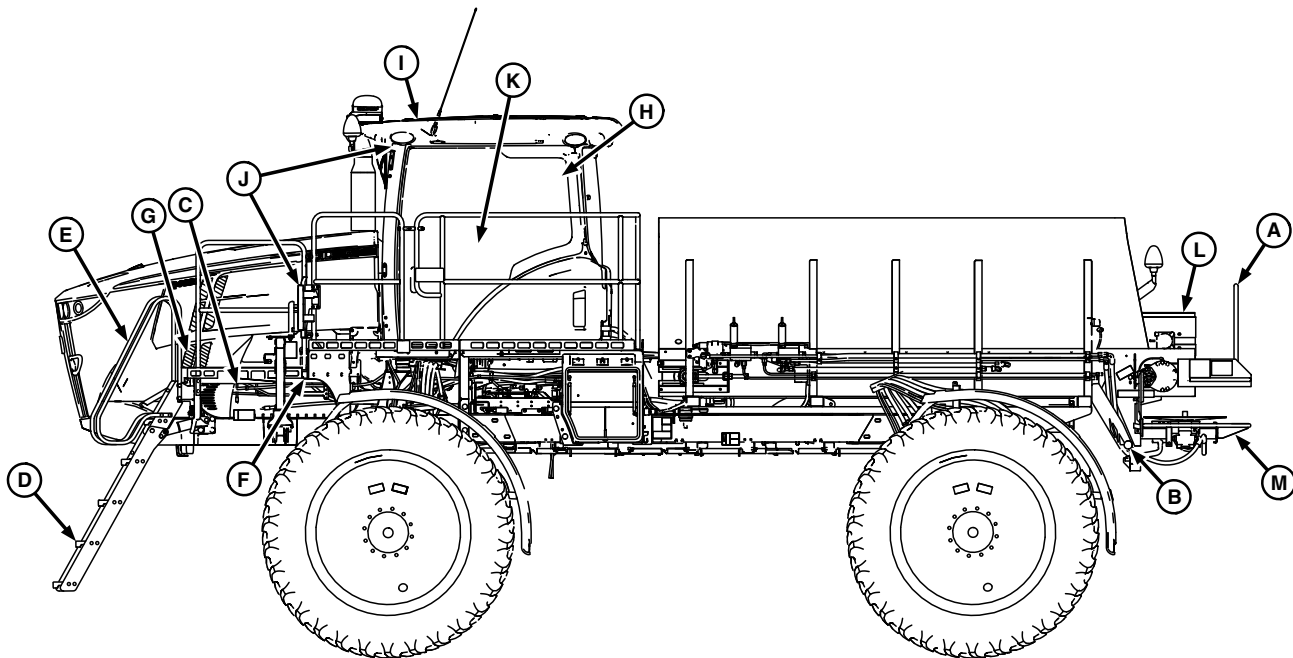


TB90758,0001A43 -19-11MAY15-22/22

N117551 —UN—20APR15

Safety Features

Safety Features



N101306—LUN—09MAY13

A—SMV EMBLEM—Alerts following traffic of your presence on roads.

B—REFLECTORS ON BOX—Alerts following traffic of your presence on roads.

C—SLIP RESISTANT SURFACES—Helps prevent slippage when walking on platform.

D—DIVOTTED STEPS AND PLATFORMS—Helps prevent slipping when on platform or ladders, also diminishes dirt and mud build up.

E—HAND RAILS—Gives support when climbing onto machine or walking on platforms.

F—STARTER SOLENOID SHIELDING—For bypass start prevention.

G—FAN GUARDING—Protection from Engine Fan.

H—EMERGENCY EXIT—Exit from right side of cab if required.

I—TRACTOR STYLE CAB WITH SEAT BELT—For operator comfort.

J—WINDSHIELD WIPERS AND LARGE REARVIEW MIRRORS—For clear view of surroundings.

K—AUTOMATIC PARK—Shifts automatically into park when machine stops.

L—CONVEYOR SHIELD—Protection from Conveyor Belt.

M—SPREADER SHIELD—Protection from Spreaders.

In addition to the safety features described here, other components and systems, safety signs on the machine, safety messages in the Operator's Manual and elsewhere,

as well as the care and concern of a capable operator, contribute to the safety of operators and others nearby.

OUO6092.000082B -19-27MAR13-1/1

Spreadstar™

Introduction to Spreadstar™

Download And Install Software Payload

IMPORTANT: Order control software part number N308217 before starting installation. Ordering software early insures availability by the time spreader is installed.

Do not attempt to download software until you have been contacted from AMS.

NOTE: When you attempt to download software before being contacted, the current machine configuration Service ADVISOR return file from the machine overrides the factory update and SOFTWARE WILL HAVE TO BE REORDERED FROM AMS ON A REPAIR ORDER ON FLASH. DO NOT LOAD A DTAC CASE OR CONTACT STELLAR SUPPORT IF YOU MAKE THIS ERROR, SIMPLY REORDER THE SOFTWARE FROM AMS THROUGH SERVICE PARTS AGAIN ON FLASH. Refer to instruction PC20380 for most current download procedure.

Order software part number N308217 on FLASH through Service Parts— Machine model number and serial number is required at time of order. Download of updated software through Service Advisor Software Delivery System is required

NOTE: Complete instructions on downloading and installing Software Payload are given in PC20380 DOWNLOAD SOFTWARE PAYLOAD Installation Instruction.

1. Download software payload using John Deere Custom Performance software delivery system.
2. Install software payload through Service Advisor onto Dry Rate Controller.

Spreadstar™ System

The following section provides specifications and operating parameters for the Spreadstar™ system.

Spreadstar is a trademark of Deere & Company

The Spreadstar™ system is an electronic module with a general-purpose display and general-purpose key pad that can be used to display chassis or dry system information. It is designed to control the application rate of dry fertilizer and agricultural lime from one and two bin spreaders. Information regarding the rate, ground speed, spinner speed, conveyor speed, product density, and product applied is easily accessed and customer configurable. It has the capability to simultaneously display information from multiple sensors.

Spreadstar™ requires a bin level sensor installed in the dry spreader to operate at transport speeds and limits the speed of transport to 30 mph without one. Sensors can be used for both transport speed regulation and bin empty warnings. Single bin spreaders use one bin sensor mounted high on the rear endgate for transport speed limitation only. Dual bin spreaders use the same bin sensor relocated to the second product bin as a bin level warning. An optional sensor can be installed in the front bin for low bin warning. A bin level sensor provides bin level status when operating automatic bin chaining feature with optional second product bin inserted.

NOTE: Please refer to the Operate System section of this manual for your specific model dry spreader information of setup parameters, calibrations and specifications.

Actual application speeds and rates may vary based on several variables such as gate height setting, product density, product flow characteristics, conveyor speed, and type of terrain. Understand spreader parameters and settings prior to spreading prescription maps.

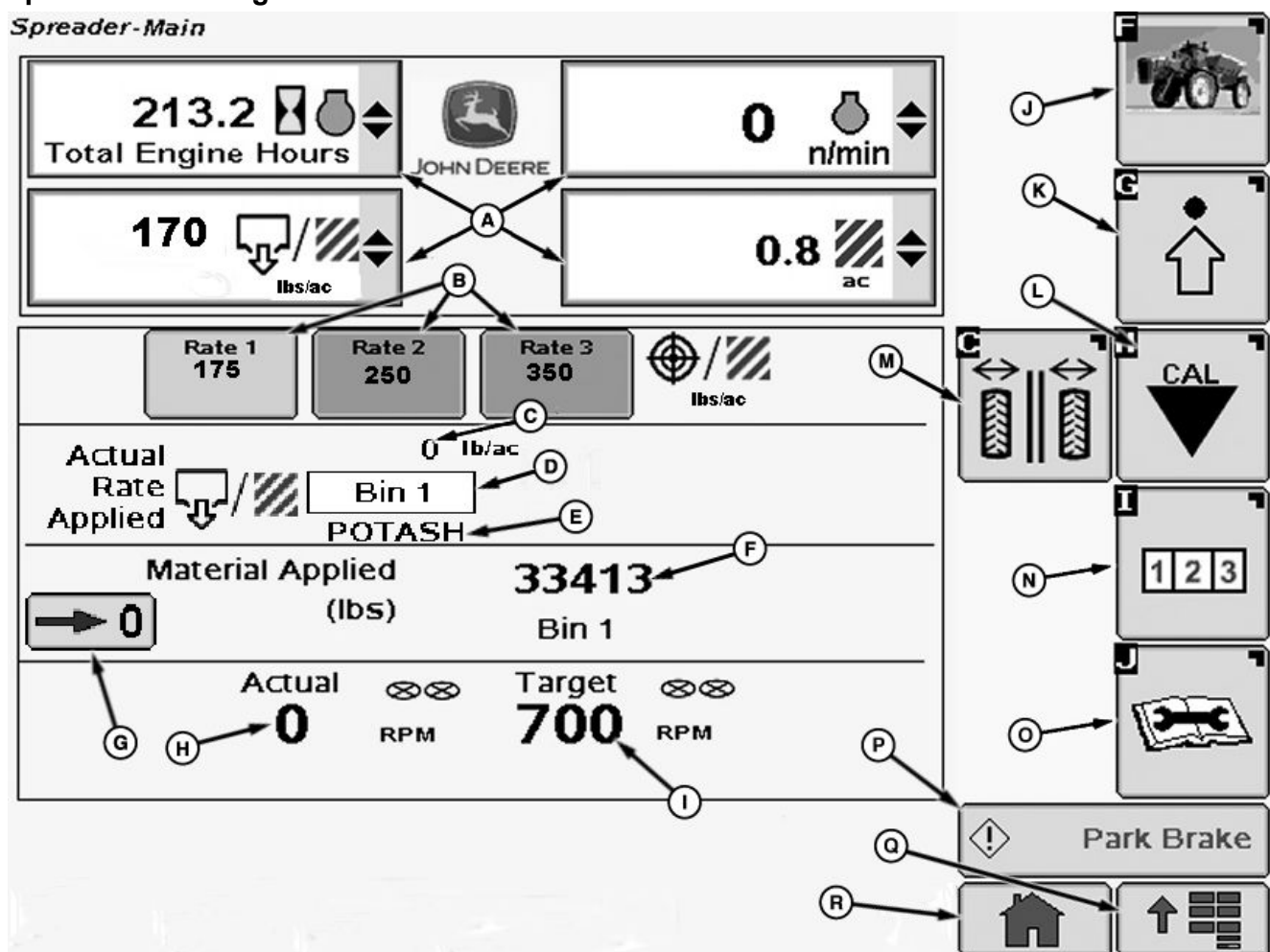
When manual belt speed is selected the conveyor will operate at preselected rpm as soon as Master Spread switch is activated and does not require speed input to start conveyor. This can be used to "precharge" the conveyor output as needed.

NOTE: When necessary to reset Spreadstar™ system, turn engine key OFF, then ON again.

OUC06092,00009AE -19-19MAY15-1/1

Spreader Main Page

Spreader-Main



Single Bin Spreader Main Page

A—Information Drop Down Menu
B—Pre-programmed Target Application Rates
C—Actual Rate Applied
D—Bin Status Icon

E—Product Name
F—Material Applied
G—Zero Button
H—Actual Spinner Speed (rpm)
I—Target Spinner Speed (rpm)

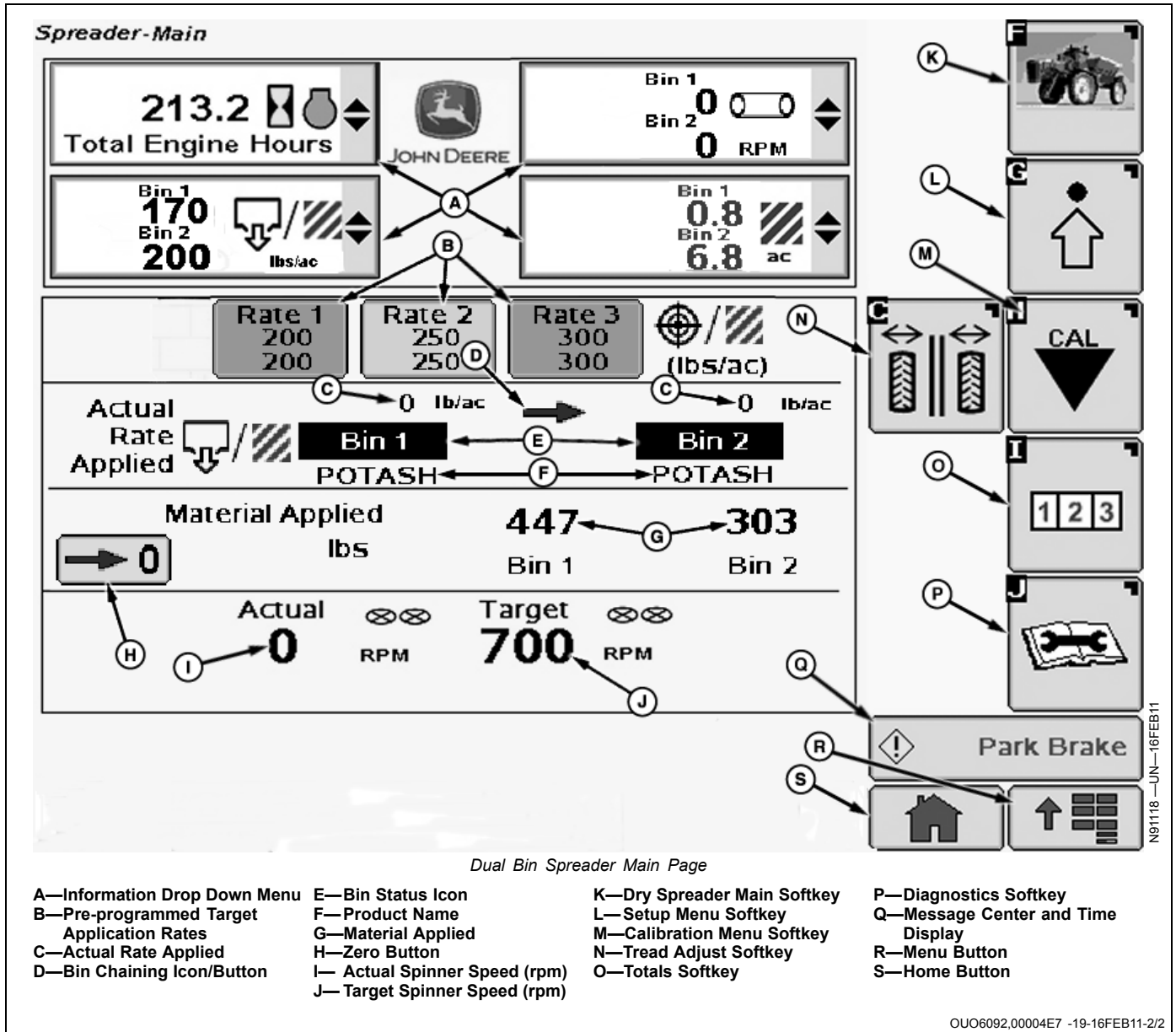
J—Dry Spreader Main Softkey
K—Setup Menu Softkey
L—Calibration Menu Softkey
M—Tread Adjust Softkey
N—Totals Softkey

O—Diagnostics Softkey
P—Message Center and Time Display
Q—Menu Button
R—Home Button

Continued on next page

OUC6092.00004E7 -19-16FEB11-1/2

N91117—UN—16FEB11



Bin Status Icons

N86762 —UN—28SEP09

Bin Not Enabled

- Check box on Spreader Bin Setup page not checked

Bin 1

OUO6092,00002B8 -19-03DEC09-1/4

Bin Enabled

N85945 —UN—24SEP09

- White icon
- Conveyor is not rotating due to master switch being off

Bin 1

Continued on next page

OUO6092,00002B8 -19-03DEC09-2/4

Bin Armed

N85946 —UN—24SEP09

- Black icon
- Conveyor is not rotating (due to zero-rate zone, bin chaining, SwathControl, or other system condition)

Bin 1

OUC6092,00002B8 -19-03DEC09-3/4

Bin On

N85947 —UN—24SEP09

- Black icon with green spreading icon
- Conveyor is rotating

Bin 2



OUC6092,00002B8 -19-03DEC09-4/4

Spreader Main Page Information Drop Down Lists

The spreader main page allows an operator to view any four of the available information items at one time. The items displayed can be changed as follows.

1. Select currently displayed information item (A) to be replaced. Drop-down menu appears.
2. Select desired information item (B) to display from drop-down menu. Menu closes and replacement information item (C) is displayed on main page.

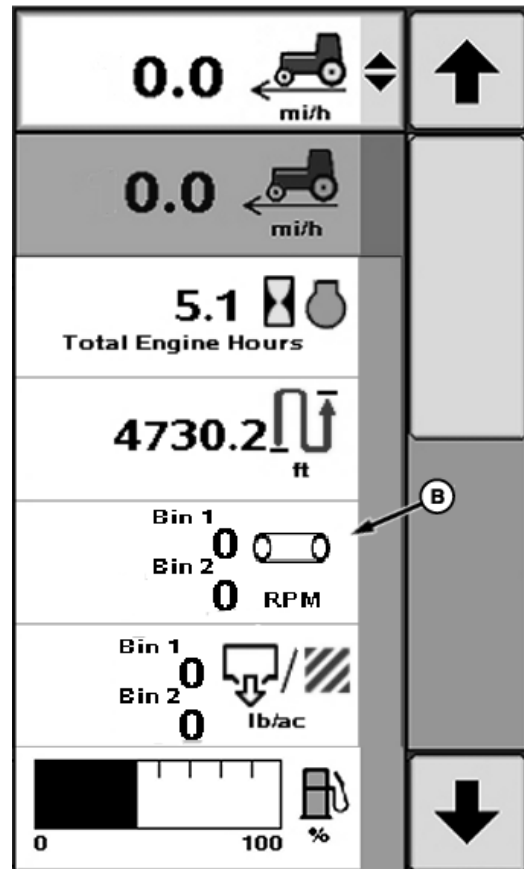
A—Currently Displayed
Information Item

B—Desired Information Item

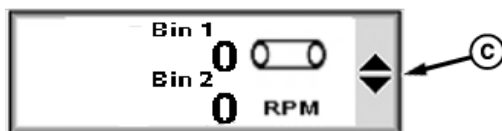
C—Replacement Information
Item



Currently Displayed Information Item



Drop-down Menu



Replacement Information Item

OUO6092,00002B9 -19-16NOV09-1/1

N82566 —UN—08DEC08

Spreader Bin Setup

1. Select the Setup softkey (A) to view the setup menu.
2. Select the Bin Setup tab (B).
3. Select drop-down box (C) to select between 6 programmable products. When one is selected the product name is displayed at location (D).
4. Select check box (E) to enable/disable the bin.

NOTE: The following rate mode selection is also used in Spreader Check Test menu and overrides any other previous selection.

5. Select drop down box (F) to select the mode the spreader will operate in while the rate-select dial is in the Aux position. This menu allows an operator to spread a prescription rate with one bin and a target rate with the other bin with the dial in the Aux position.

NOTE: This drop down menu is only available when the rate-select dial is in the Aux position.

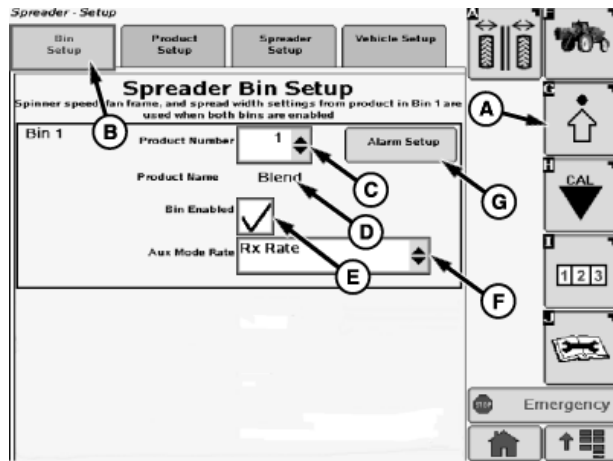
6. Selecting the Alarm Setup button (G) allows the operator to toggle between five percentage settings or OFF for spinner, density setting, and rate alarms.
7. Select drop-down box (H) to select bin chaining mode (dual-bin setup only with same product in both bins).

Bin Chaining modes available:

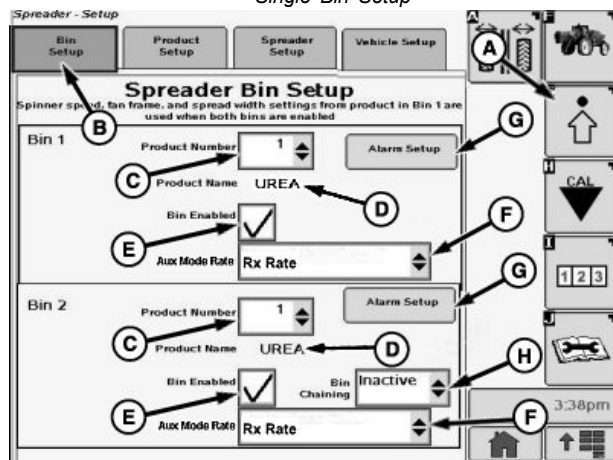
- Inactive
- Auto: 1 to 2
- Auto: 2 to 1
- Manual: 1 to 2
- Manual: 2 to 1

NOTE: Bin 1 refers to front product bin and bin 2 refers to rear (back) product bin.

Selecting a bin chaining mode will clear the Product Number for each bin. The same product number must be selected for each bin prior to bin chaining operation.



Single Bin Setup



Dual Bin Setup

A—Setup Softkey
B—Bin Setup Tab
C—Drop-down Box
D—Product Name

E—Check Box
F—Drop-down Box
G—Alarm Setup Button
H—Drop-down Box

N82561 — UN—09DEC08

N87284 — UN—25NOV09

CS12167,0000377 -19-08MAY13-1/1

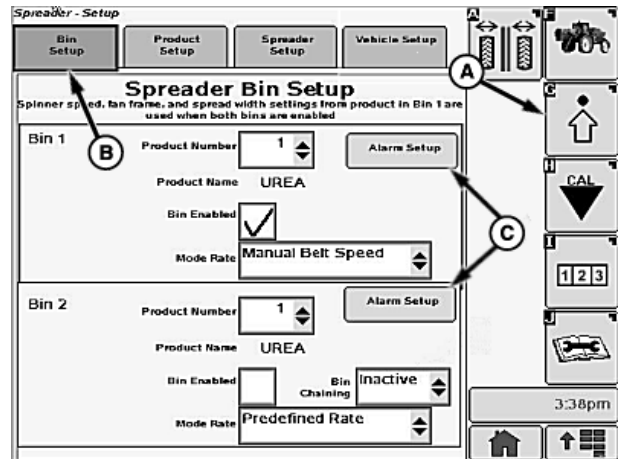
Turn Spinner Alarm On/Off

NOTE: The spinner alarm tells the operator when the spreader spinner speed deviates more than selected percentage of the target speed for 6 continuous seconds.

1. Select the Setup softkey (A) to view the setup menu.
2. Select the Bin Setup tab (B).
3. Select Alarm Setup button (C) and Alarm Setup screen will appear.

A—Setup Softkey
B—Bin Setup Tab

C—Alarm Setup Button



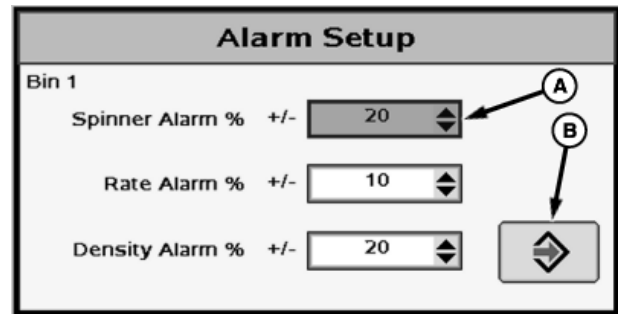
CS12167,00002C3 -19-02JAN13-1/2

N86768 —UN—27OCT09

4. Select +/- 5, 10, 15, 20, 25 % deviation or "OFF" from drop-down box (A).
5. Select Enter button (B) to save the alarm settings and return to Bin Setup screen.

A—Drop-down Box

B—Enter Button



CS12167,00002C3 -19-02JAN13-2/2

N80848 —UN—12JUN08

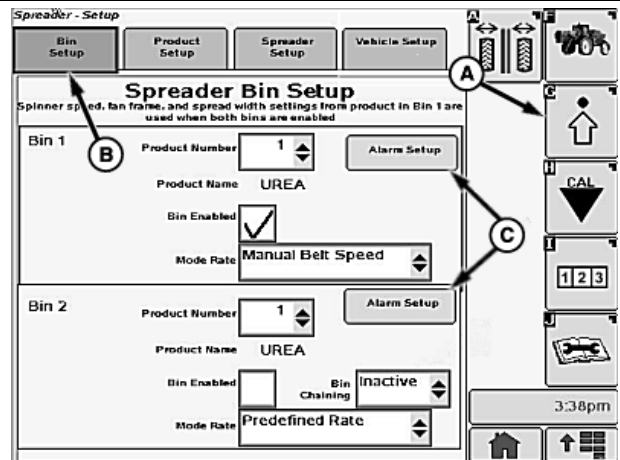
Turn Rate Alarm On/Off

NOTE: The rate alarm tells the operator when the actual application rate deviates more than the selected percentage of the target application rate for 6 continuous seconds.

1. Select the Setup softkey (A) to view the setup menu.
2. Select the Bin Setup tab (B).
3. Select Alarm Setup button (C) and Alarm Setup screen will appear.

A—Setup Softkey
B—Bin Setup Tab

C—Alarm Setup Button



Continued on next page

CS12167,00002C4 -19-02JAN13-1/2

N86768 —UN—27OCT09

4. Select +/- 5, 10, 15, 20, 25 % deviation or "OFF" from drop-down box (A).
5. Select Enter button (B) to save the alarm settings and return to Bin Setup screen.

A—Drop-down Box

B—Enter Button

N80850—UN—12JUN08

CS12167,00002C4 -19-02JAN13-2/2

Turn Density Setting Alarm On/Off

NOTE: The "Density Setting" alarm alerts the operator if the product density entered on Spreader Product Setup screen is significantly different than that of the product during the CFR calibration.

1. Select the Setup softkey (A) to view the setup menu.
2. Select the Bin Setup tab (B).
3. Select Alarm Setup button (C) and Alarm Setup screen will appear.

A—Setup Softkey
B—Bin Setup Tab

C—Alarm Setup Button

N86768—UN—27OCT09

CS12167,00002C5 -19-02JAN13-1/2

4. Select +/- 5, 10, 15, 20, 25 % deviation or "OFF" from drop-down box (A).
5. Select Enter button (B) to save the alarm settings and return to Bin Setup screen.

A—Drop-down Box

B—Enter Button

N80849—UN—12JUN08

CS12167,00002C5 -19-02JAN13-2/2

Operate Bin Chaining

Bin chaining allows spreading with a dual-bin dry spreader to be switched from one bin to another with minimal effort. This feature allows one as-applied map to be created with a dual-bin dry spreader when using Documentation.

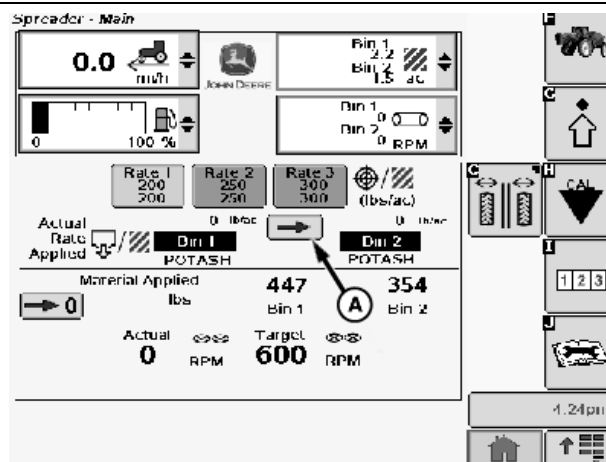
NOTE: The bin chaining mode (Inactive, Manual: 1 to 2, Manual: 2 to 1, Auto: 1 to 2, or Auto: 2 to 1) may only be switched with the spinner switch (solution pump switch) in the off position.

Bin identification:

- Bin 1: Front bin
- Bin 2: Rear bin

Setup and Operate in Manual: 1 to 2 Mode

1. Select bin chaining mode Manual: 1 to 2 from the Spreader Bin Setup screen.
2. Select a product number for both bins on the Spreader Bin Setup screen.
3. Spread product out of bin 1.
4. Press the bin chain button (A) when a bin switch is desired. Bin 1 conveyor will stop and bin 2 conveyor will start.



A—Bin Chain Button

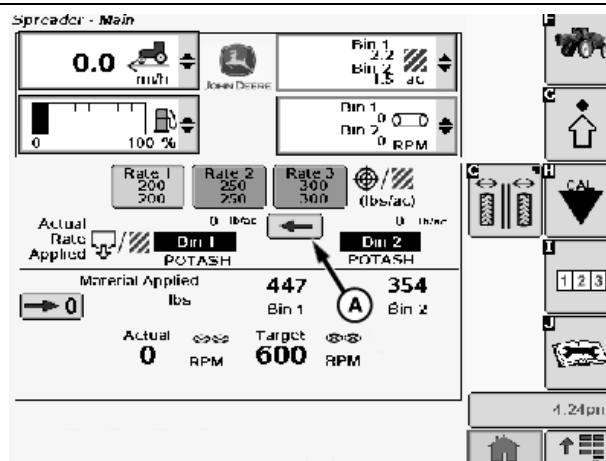
5. Spread product out of bin 2. Shut off spreading with Master Switch when desired.

OUO6092,00004E8 -19-16FEB11-1/4

N91119—UN—16FEB11

Setup and Operate in Manual: 2 to 1 Mode

1. Select bin chaining mode Manual: 2 to 1 from the Spreader Bin Setup screen.
2. Select a product number for both bins on the Spreader Bin Setup screen.
3. Spread product out of bin 2.
4. Press the bin chain button (A) when a bin switch is desired. Bin 2 conveyor will stop and bin 1 conveyor will start.
5. Spread product out of bin 1. Shut off spreading with Master Switch when desired.



A—Bin Chain Button

Continued on next page

OUO6092,00004E8 -19-16FEB11-2/4

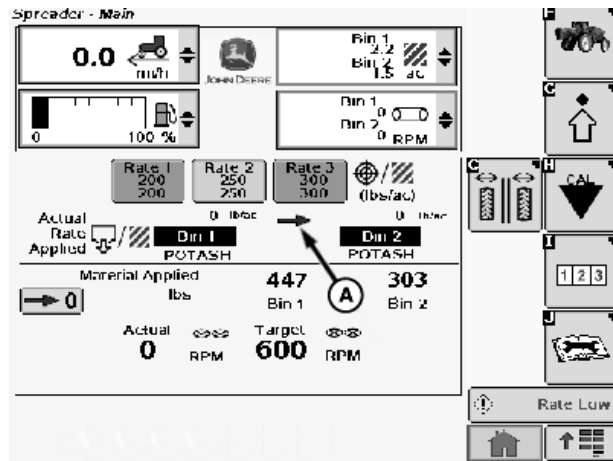
N91120—UN—16FEB11

Setup and Operate in Auto: 1 to 2 Mode

1. Select bin chaining mode Auto: 1 to 2 from the Spreader Bin Setup screen. Bin chaining icon (A) shows chaining sequence.
2. Select a product number for both bins on the Spreader Bin Setup screen.
3. Spread product out of bin 1.
4. Spreading is automatically switched to bin 2 when bin sensor shows bin 1 is empty. Bin 1 conveyor will stop and bin 2 conveyor will start.

NOTE: Product may still be remaining in bin 1 below the bin empty sensor. To completely empty the contents of bin 1, the operator would be required to disable bin chaining or select manual mode.

5. Spread product out of bin 2. Shut off spreading with Master Switch when desired.



A—Bin Chain Icon

OU06092,00004E8 -19-16FEB11-3/4

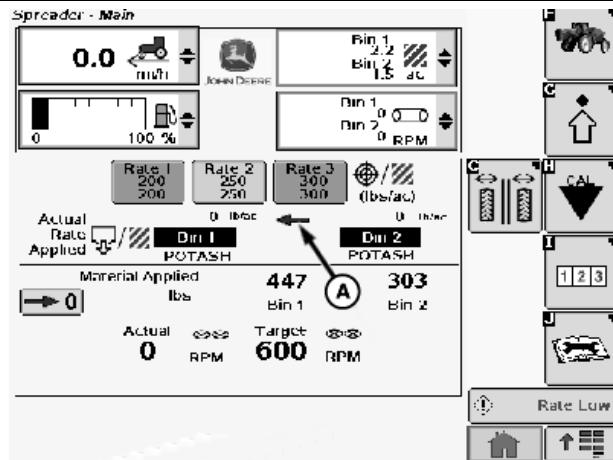
N91121 — UN—16FEB11

Setup and Operate in Auto: 2 to 1 Mode

1. Select bin chaining mode Auto: 2 to 1 from the Spreader Bin Setup screen. Bin chaining icon (A) shows chaining sequence.
2. Select a product number for both bins on the Spreader Bin Setup screen.
3. Spread product out of bin 2.
4. Spreading is automatically switched to bin 1 when bin sensor shows bin 2 is empty. Bin 2 conveyor will stop and bin 1 conveyor will start.

NOTE: Product may still be remaining in bin 2 below the bin empty sensor. To completely empty the contents of bin 2, the operator would be required to disable bin chaining or select manual mode.

5. Spread product out of bin 1. Shut off spreading with Master Switch when desired.



A—Bin Chain Icon

OU06092,00004E8 -19-16FEB11-4/4

N91122 — UN—16FEB11

Resuming Bin Chaining

If the spinner switch (solution pump switch) is cycled off/on or the machine is keyed off/on with bin chaining active, the following will occur:

1. The first bin in a bin chaining sequence will be selected for spreading.

2. If the bin sensor shows that the first bin is empty:
 - a. Automatic bin chaining will switch to the second bin.
 - b. Manual bin chaining will continue spreading with the first bin until the bin chain button is pressed.

Spreader Product Setup

Spreader- Setup

Bin Setup **Product Setup** Spreader Setup Vehicle Setup

Spreader Product Setup

Product Number Product Name

Units/Area

Spread Width (ft)

Product Density (lbs/cu.ft)

Rate 1 (lbs/ac)

Rate 2 (lbs/ac)

Rate 3 (lbs/ac)

CFR (cu.ft/rev) Bin 1 Bin 2

Feed Gate Opening (in)

Spinner Speed (RPM)

Fan Frame (in)

Navigation icons: A (Setup Softkey), B (Product Setup Tab), C (Drop-down Box), D (Drop-down Box), E (Drop-down Box), F (Input Box), G (Input Box), H (Input Box), I (Input Box), J (Input Box), K (Input Box), L (Input Box), and a tractor icon.

Time: 2:48pm

Home icon, Up arrow icon, and a grid icon.

A—Setup Softkey
B—Product Setup Tab
C—Drop-down Box

D—Drop-down Box
E—Drop-down Box
F—Input Box

G—Input Box
H—Input Box
I—Input Box
J—Input Box

K—Input Box
L—Input Box

1. Select the Setup softkey (A).
2. Select the Product Setup tab (B). Spreader Product Setup screen appears.

The following items are displayed on the Product Setup screen:

Product Number (C):—Allows operator to number products that are programmed into Spreadstar™.

Product Name (D):—Allows operator to select between products that are programmed into Spreadstar™.

Units/Area (E):—Allows operator to select either kg/ha or t/ha (lb./acre or tons/acre) as the unit of measure for the product.

Spread Width (F):—Allows operator to enter spread width in meters (feet).

Product Density (G):—Where density of selected product, in kg/m³ (lb./cu. ft.), is input into Spreadstar™.

Application Rates 1, 2, or 3 (H):—Where target application rates, in kg/ha or t/ha (lb./acre or tons/acre), are input into Spreadstar™.

CFR (I):—Conveyor Feed Rate. Volume of material in cm³ spread per revolution of the belt drive roller at a 1.0 cm feed gate opening (cu. ft. per revolution at 1.0 in. feed gate opening). CFR can be entered for material in each bin. Input box under Bin 2 will not be present if in single bin setup.

Feed Gate Opening (J):—Where opening in cm (in.) is entered for each bin.

Spinner Speed (K):—Where target spinner speed in rpm is entered.

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OUC6092,00009AF -19-19MAY15-1/2

Fan Frame (L):—Where fan frame setting in cm (in.) is entered.

NOTE: Fan Frame setting is for operator reference only and is not used in any Spreadstar™ application rate calculations.

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calculations. Refer to spreader preparation in the Spread Pattern section of this manual for proper fan frame settings based on product type being applied.

OUC6092,00009AF -19-19MAY15-2/2

Set Application Rates

Set Application Rates Through Product Setup Screen

Spreader - Setup

Bin Setup	Product Setup	Spreader Setup	Vehicle Setup
<p>Spreader Product Setup</p> <p>Product Number: <input type="text" value="1"/> Product Name: <input type="text" value="UREA"/></p> <p>Units/Area: <input type="text" value="Pounds/Acre"/></p> <p>Spread Width (ft): <input type="text" value="90.00"/></p> <p>Product Density (lbs/cu.ft): <input type="text" value="48.0"/></p> <p>Rate 1 (lbs/ac): <input type="text" value="85"/></p> <p>Rate 2 (lbs/ac): <input type="text" value="175"/></p> <p>Rate 3 (lbs/ac): <input type="text" value="250"/></p> <p>Bin 1 CFR (cu.ft/rev): <input type="text" value="0.305"/> Bin 2 CFR (cu.ft/rev): <input type="text" value="0.144"/></p> <p>Feed Gate Opening (in): <input type="text" value="2.00"/> <input type="text" value="2.00"/></p> <p>Spinner Speed (RPM): <input type="text" value="750"/></p> <p>Fan Frame (in): <input type="text" value="3.50"/></p>			

Softkey Legend:

- A: Setup Softkey (Tractor icon)
- B: Product Setup Tab (Product Setup icon)
- C: Input Box (Up arrow icon)
- H: CAL (Down arrow icon)
- I: 1 2 3 (Numeric keypad icon)
- J: Wrench icon

2:48pm

Home Up

A—Setup Softkey

B—Product Setup Tab

C—Input Box

1. Select the Setup softkey (A).
2. Select the Product Setup tab (B). Spreader Product Setup screen appears.
3. Select input boxes (C) to input the target application rates, in kg/ha or t/ha (lb/acre or tons/acre) into

Spreadstar™. A numeric key pad appears on screen to input new value. Press Enter button on keypad to accept the new value.

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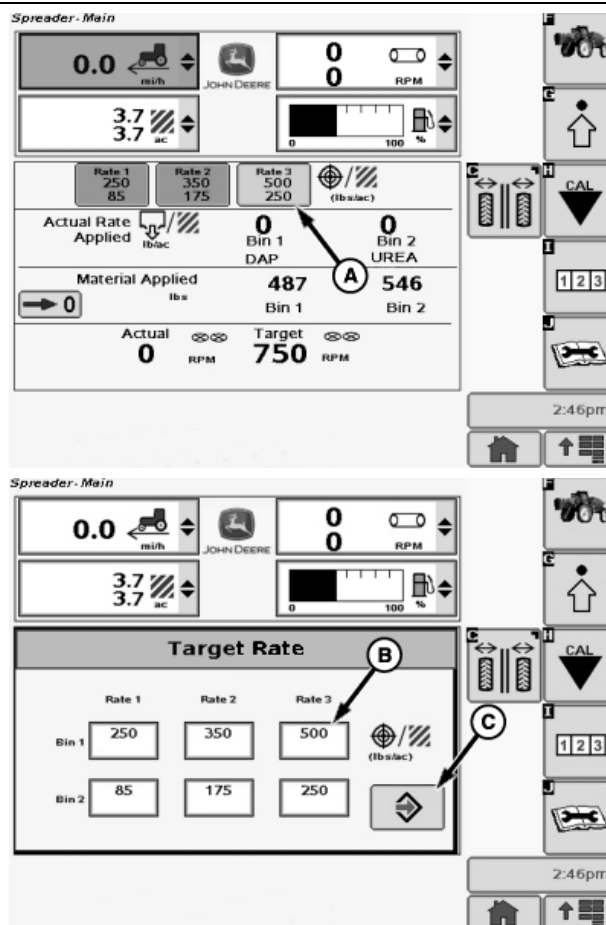
OUC6092,00009B0 -19-19MAY15-1/2

Set Application Rates Through Spreader Main Page

1. Select button (A) for the rate to be changed. Target Rate submenu appears.
2. Select input box (B) for the rate which needs to be changed. A numeric keypad appears on screen to input new value. Press Enter button on keypad to exit keypad.
3. Press Enter button (C) to accept the new value.

A—Button
B—Input Box

C—Enter Button



OUO6092,00009B0 -19-19MAY15-2/2

N91124—UN—16FEB11

N91123—UN—16FEB11

Set Product Density

Spreader - Setup

A—Setup Softkey

B—Product Setup Tab

C—Input Box

1. Select the Setup softkey (A).
2. Select the Product Setup tab (B). Spreader Product Setup screen appears.
3. Select input box (C) to input the density in kg/m^3 (lb./cu. ft.) of the selected product. This value is normally

provided on the ticket received with fertilizer. A numeric key pad appears on screen to input the value. Press "Enter" button on keypad to accept the new value.

CS12167,00002C7 -19-02JAN13-1/1

Set Product CFR

Spreader- Setup

Bin Setup **Product Setup** **Spreader Setup** **Vehicle Setup**

Spreader Product Setup

Product Number: 1 Product Name: UREA

Units/Area: Pounds/Acre

Spread Width (ft): 90.00

Product Density (lbs/cu.ft): 48.0

Rate 1 (lbs/ac): 85

Rate 2 (lbs/ac): 175

Rate 3 (lbs/ac): 250

Feed Gate Opening (in): 2.00

Spinner Speed (RPM): 750

Fan Frame (in): 3.50

Bin 1 CFR (cu.ft/rev): 0.305

Bin 2 CFR (cu.ft/rev): 0.144

Keypad: A (Setup Softkey), B (Product Setup Tab), C (Input Boxes), D (Up Arrow), E (Down Arrow), F (CAL), G (Numeric Keypad), H (Enter), I (Home), J (Tractor Icon), K (2:48pm), L (Home), M (Up Arrow), N (Grid Icon).

A—Setup Softkey

B—Product Setup Tab

C—Input Boxes

Conveyor Feed Rate (CFR) is the volume of product in cm^3 spread per revolution of the belt drive roller at a feed gate opening of 1.0 cm (cu. ft. per revolution at 1.0 in. feed gate opening).

1. Select the Setup softkey (A).
2. Select the Product Setup tab (B). Spreader Product Setup screen appears.

3. Select input boxes (C) to input the theoretical CFR for your spreader model. This value is provided in the table below. A numeric key pad appears to input the value. Press "Enter" button on keypad to accept the new value.

Theoretical CFR Values			
CFR (metric) ^a	CFR (English) ^b	Conveyor Type	Model
2854	0.256	Belt Over Chain Conveyor	DN456 and DN485
3400	0.305	Straight Belt Conveyor	DN456 and DN485
1605	0.144	Belt Over Chain Conveyor	Second Product Bin

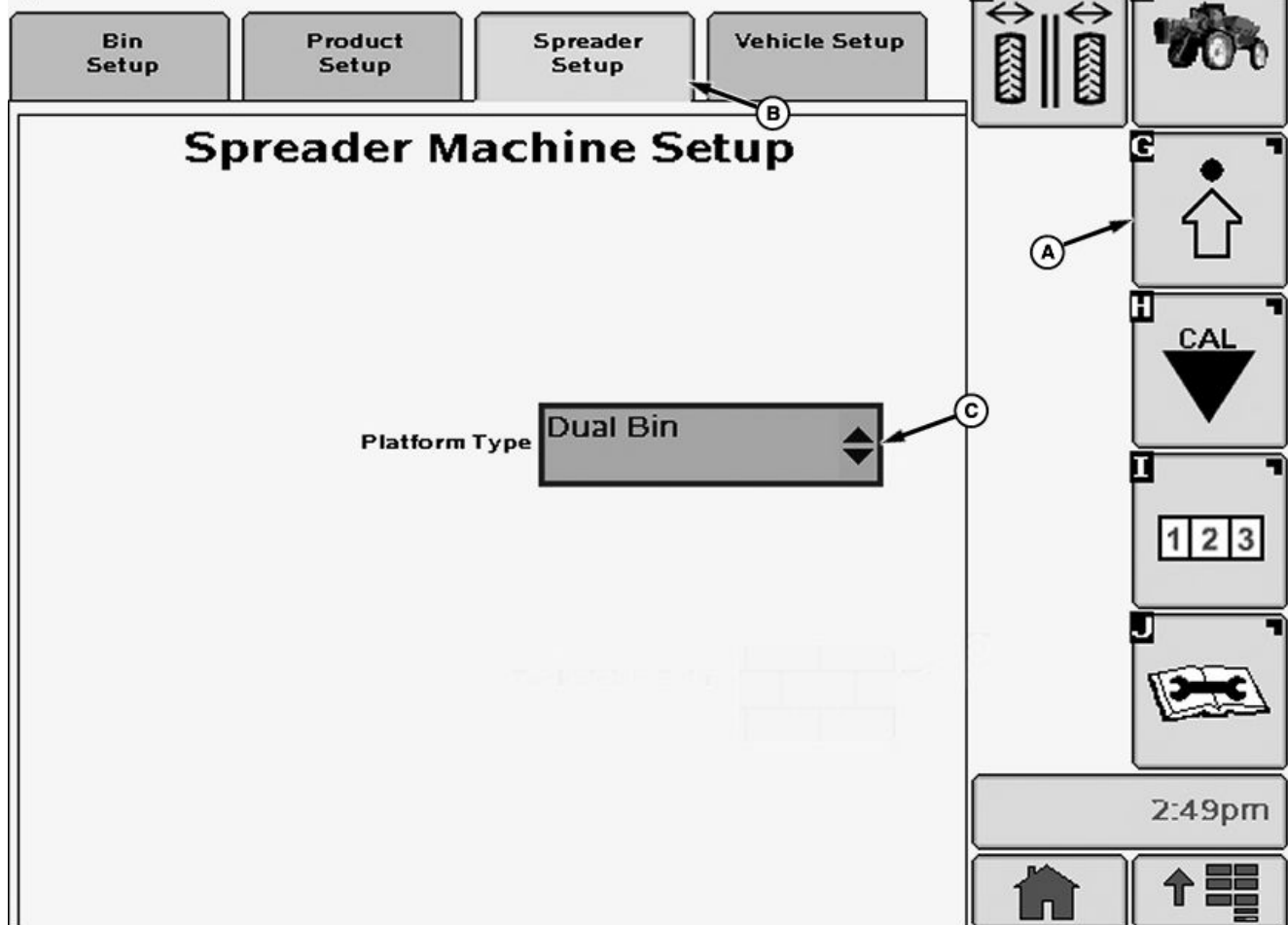
^aBased on 1.0 cm feed gate opening

^bBased on 1.0 in. feed gate opening

CS12167,000053A -19-29JAN14-1/1

Spreader Machine Setup

Spreader- Setup



A—Setup Softkey

B—Spreader Setup Tab

C—Drop-Down Menu

1. Select the Setup softkey (A).
2. Select the Spreader Setup tab (B). Spreader Machine Setup screen will be shown.

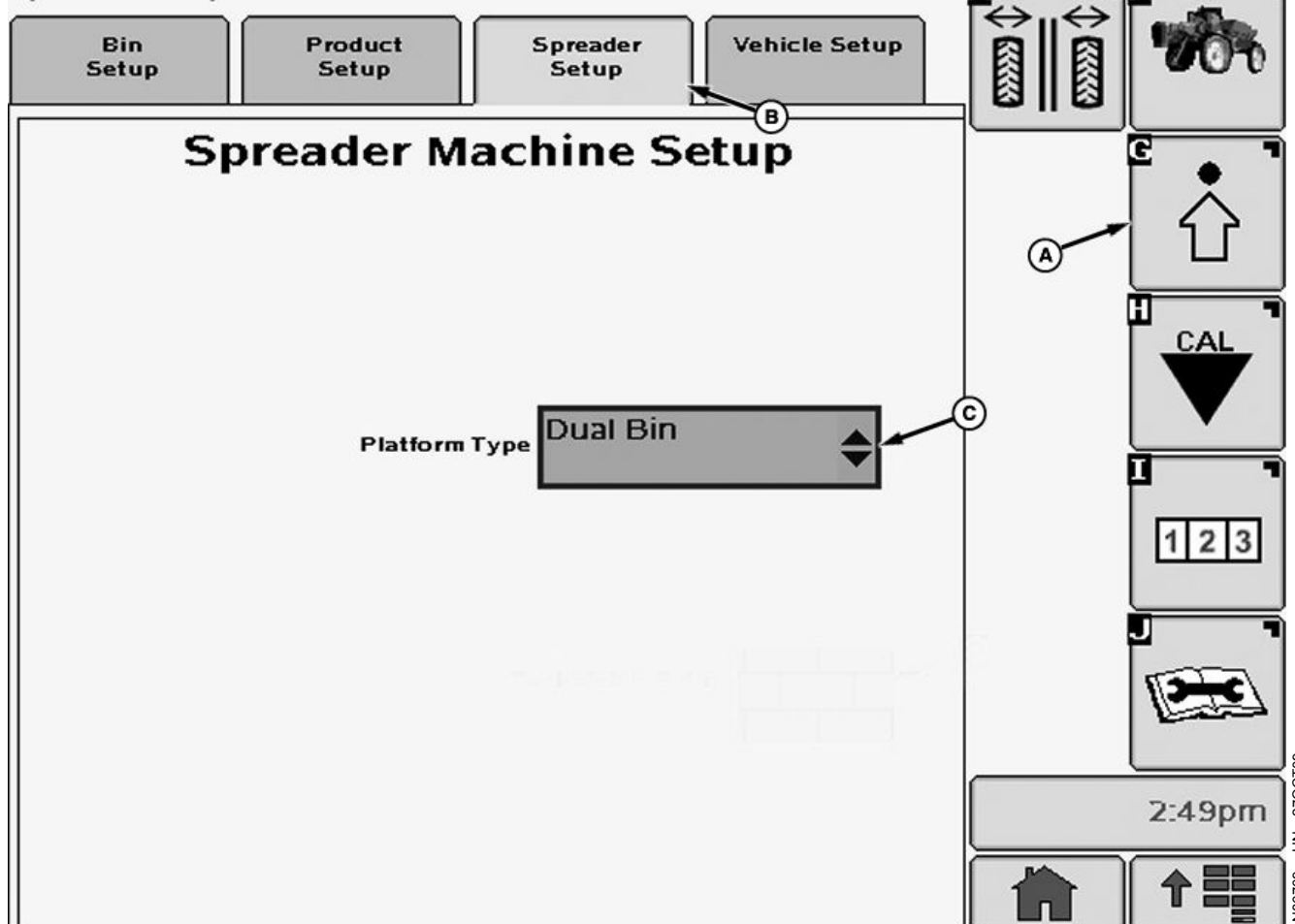
Platform Type—Drop-down menu where operator can choose from Single Bin or Dual Bin spreader.

On Spreader Machine Setup the following are displayed and can be changed:

CS12167,0000168 -19-18MAY12-1/1

Select Single or Dual Bin Platform

Spreader- Setup



A—Setup Softkey

B—Spreader Setup Tab

C—Drop-Down Menu

1. Select the Setup softkey (A).
2. Select the Spreader Setup tab (B). Spreader Machine Setup screen will be shown.
3. Select the drop-down menu (C) where operator can choose from Single Bin or Dual Bin platform.

OUC6092,0000294 -19-23OCT09-1/1

Vehicle Setup and Calibration

Refer to the SprayStar section in R4030, R4038 and R4045 operator's manual for the information pertaining to Vehicle Setup and Vehicle Calibration on this machine.

CS12167,000055B -19-05MAR14-1/1

Job Summaries and Current Totals

Current Totals

Spreader- Setup

Current	Job Summaries	Lifetime	Setup Summary
<div> <div> <div>B</div> <div> <div>Area Counter</div> <div> <div>11.0</div> <div>8.5 ac</div> </div> <div> <div>→ 0</div> <div>C</div> </div> </div> </div> </div>			
<div> <div>Distance Counter</div> <div> <div>8304.5</div> <div>ft</div> </div> <div> <div>On / Off</div> <div> <div>✓</div> <div>D</div> </div> <div> <div>→ 0</div> <div>E</div> </div> </div> </div>			
<div> <div> <div> <div>1</div> <div>2</div> <div>3</div> </div> <div>A</div> </div> <div> <div> <div>!</div> <div>Park Brake</div> </div> <div> <div> <div>↑</div> <div> <div>1</div> <div>2</div> <div>3</div> </div> </div> </div> </div></div>			

Current Tab

A—Reports and Totals Softkey

B—Current Tab

C—Zero Button

D—Check Box

E—Zero Button

1. Select the Reports and Totals softkey (A) to view the spreader totals menu.
2. Select the "Current Tab" tab (B). The current totals page will display instant values of area covered and

distance travelled. These can be reset by selecting the "Zero" buttons (C and E) next to the totals.

Continued on next page

OOU6092,0000295 -19-23OCT09-1/3

N86770—UN—27OCT09

Job Summaries

Spreader-Totals

Job Summaries Tab

A—Reports and Totals Softkey
B—Job Summaries Tab
C—Job Summary Drop Down Menu

D—Check Box
E—Area
F—Time Spent Spreading
G—Area Per Hour

H—Volume
I— Volume Per Area
J— Volume Per Hour Spread
K—Start and Stop Times

L—Zero Button

1. Select the Reports and Totals softkey (A) to view the sprayer totals menu.
2. Select the “Job Summaries” tab (B). The job summaries page will keep track of all totals listed on the job page.

To create a new job follow these steps:

1. Select the drop-down box (C) next to Job Summary.
2. Select a number 1 through 6 for current job.

3. Press enter.
4. Select the desired job from the job summary drop down menu.

Jobs that are no longer needed may be deleted by pressing the zero button.

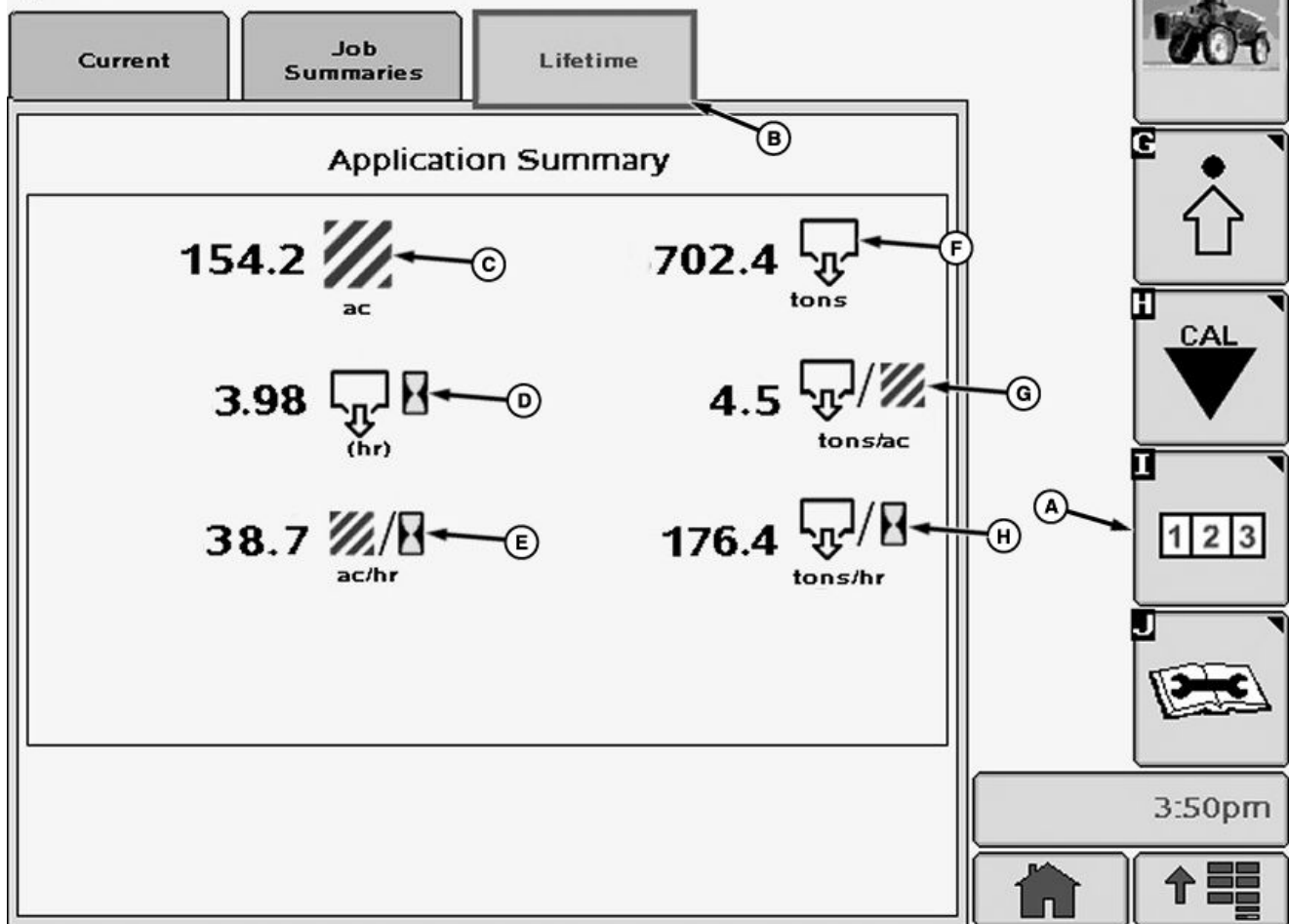
Totals can be reset to zero by pressing the zero button.

Continued on next page

OUC6092,0000295 -19-23OCT09-2/3

Lifetime Totals

Spreader-Totals



Lifetime Tab

A—Reports and Totals Softkey
B—Lifetime Tab

C—Area
D—Time Spent Spreading
E—Area Per Hour

F—Volume
G—Volume Per Area
H—Volume Per Hour Spread

The “Lifetime” page acts as a general history of job summaries. It will keep track of total area covered, time spent spreading, total volume spread, and machine hours.

OUC6092,0000295 -19-23OCT09-3/3

Setup Summary

Spreader - Totals

Current		Job Summaries		Lifetime		Setup Summary	
						Setup Summary	
Bin Enabled		Bin 1 Enabled		Bin 2 Enabled			
Product Name		POTASH		POTASH			
Spread Width		(ft)	90.00	90.00			
Spinner Speed		(RPM)	600	600			
Fan Frame		(in)	3.00	3.00			
Feed Gate Opening		(in)	1.00	1.00			
Rate 1		(lbs/ac)	200	200			
Rate 2		(lbs/ac)	250	250			
Rate 3		(lbs/ac)	300	300			
Calibrations:							
Product		(lbs/cu.ft)	62.0	62.0			
CFR		(cu.ft/rev)	0.256	0.144			
Spinner Alarm %		10	▲▼				
Density Alarm %		10	▲▼	10	▲▼		
Rate Alarm %		10	▲▼	10	▲▼		

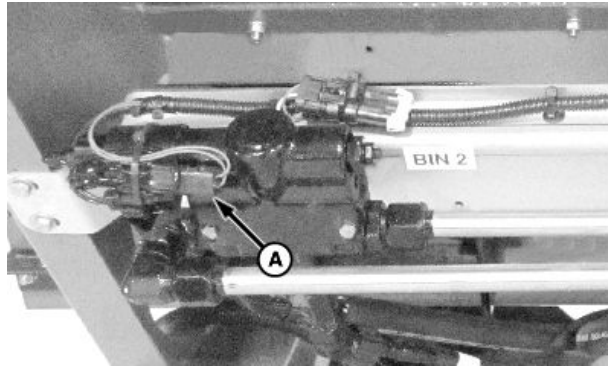
Calibrate Product CFR

Conveyor Feed Rate (CFR) is the volume of material in cm^3 spread per revolution of the belt drive roller at a 1.0 cm feed gate opening (cu. ft. per revolution at a 1.0 in. feed gate opening). The calibration procedure requires the ability to capture the product that is dispensed from the spreader belt with the spinners off.

NOTE: For best results, use at least 362.8 kg (800 lbs.) of product per calibration test.

1. Load spreader box with a sample of product to calibrate.
2. Disconnect connector (A) from spinner PWM valve.
3. Position machine so there is access to rear of machine to collect product dispensed during calibration.

NOTE: Prior to beginning calibration, ensure product is dispensing all the way to the spinners. This is very critical for front bin (Bin 1) if a second product bin is installed, otherwise the belt runs



A—Connector

for a period of time with no product on it resulting in a false calibration value.

Continued on next page

OOU6092,00009B1 -19-19MAY15-1/5

N101125—UN—14NOV12

Spreader-Calibration

The diagram illustrates the 'Spreader-Calibration' screen. At the top, there are three tabs: 'Product Calibration', 'Dry Spreader Calibration', and 'Vehicle Calibration'. The 'Product Calibration' tab is selected and highlighted. Below the tabs, there is a large area with a 'Product Calibration' label and a button with a right-pointing arrow and a smaller right-pointing arrow inside it. A label 'B' points to the 'Product Calibration' tab, and a label 'C' points to the inner arrow button. At the bottom left, there is a 'Reset Dry Spreader Product Calibrations To Defaults' label and a button with a right-pointing arrow. On the right side, there is a vertical toolbar with several icons: a tractor (F), an up arrow (G), a 'CAL' button with a downward arrow (H), a button with numbers '1 2 3' (I), a wrench icon (J), and a 'Park Brake' button with a warning triangle icon. A label 'A' points to the 'CAL' button. Below the toolbar, there are two more buttons: a house icon and an up arrow with a grid icon.

A—Calibration Softkey B—Product Calibration Tab C—Enter Button

4. Select the Calibration softkey (A).
5. Select the Product Calibration tab (B).
6. Select the Enter Button (C) next to Product Calibration to go the calibration procedure. The “Start Cal” screen appears.

Continued on next page

OUO6092,00009B1 -19-19MAY15-2/5

7. Select the product to calibrate from drop-down menu (A).
8. Select the bin containing the product for calibration from drop-down menu (B).
9. Select input box (C) next to “Expected CFR”. A numeric key pad appears on the screen. Enter the expected CFR for your spreader model as listed in the following table, if the value is different from value displayed. Press “Enter” button on keypad to accept the new value.

The screenshot shows the 'Start Cal' screen with the following fields and labels:

- Product Number:** 1 (Label A points to the drop-down arrow)
- Product Name:** DAP
- Product Bin:** Bin 1 (Label B points to the drop-down arrow)
- Expected CFR (cu.ft/rev):** 0.346 (Label C points to the input box)
- Product Density During Calibration (cu.ft/rev):** 60.0 (Label D points to the input box)
- Feed Gate Opening During Calibration (in):** 3.00 (Label E points to the input box)
- Desired Weight of Product (lbs):** 0.0 (Label F points to the input box)
- Calculated CFR (cu.ft/rev):** 0.000

At the bottom left is a button with three diagonal lines. On the right side, there is vertical text: N87285 —UN—17NOV09

A—Drop-Down Menu
B—Drop-Down Menu
C—Input Box

D—Input Box
E—Input Box
F—Input Box

Expected CFR Values			
CFR (metric) ^a	CFR (English) ^b	Conveyor Type	Model
2854	0.256	Belt Over Chain Conveyor	DN456 and DN485
3400	0.305	Straight Belt Conveyor	DN456 and DN485
1605	0.144	Belt Over Chain Conveyor	Second Product Bin

^aBased on 1.0 cm feed gate opening

^bBased on 1.0 in. feed gate opening

10. Select input box (D) and input the Product Density for the product using the numeric key pad that appears. Press Enter button to accept the new value.
 11. Select input box (E) and input the feed gate opening using the numeric key pad. Press Enter button to accept the new value.
 12. Select input box (F) and input the desired weight of product to dispense using the numeric key pad. Press Enter button to accept the new value.
- NOTE:** It is important to measure the actual product depth dispensed on the belt and enter that value as the feed gate opening for accurate calibration and application.

Continued on next page

OOU6092,00009B1 -19-19MAY15-3/5

13. Position suitable container to capture product dispensed from conveyor belt.

CAUTION: Prevent personal injury from spinning blades. Verify that spinner PWM valve is disconnected electrically to prevent unexpected spinner blade movement while catching product dispensed during calibration procedure.

NOTE: SOLUTION PUMP ENGAGE switch is used as SPINNER ENABLE switch when dry spreader is installed. MASTER ON switch on multifunction control handle is used for CONVEYOR BELT START switch.

14. Turn on Spinner Enable switch and Conveyor Belt Start switch. The belt starts turning and the "Cal Running" screen appears. The estimated weight (A) of material dispensed by the belt is displayed and updated as more material is dispensed.
15. Calibration stops when estimated material dispensed is equal to desired weight of product to dispense. Operator can stop calibration procedure at any time by turning off the spreader. Calibration resumes when operator turns spreader back on.

Product Number	1	Cal Running:
Product Bin	Bin 1	
Expected CFR (cu.ft/rev)	0.346	
Product Density During Calibration (lbs/cu.ft)	60.0	
Feed Gate Opening During Calibration (in)	3.00	
Desired Weight of Product (lbs)	749.6	
		Estimated Material Dispensed (lbs)
		198.00
		Calculated CFR (cu.ft/rev)
		0.346

A—Estimated Weight

16. When calibration is done, display indicates "Cal Done: Enter Measured Weight of Product".

Continued on next page

OUC6092,00009B1 -19-19MAY15-4/5

N78484—UN—22OCT07

17. Weigh the product dispensed. Select input box (A) and input the measured weight of product dispensed using the numeric key pad that appears.
18. Press Enter button (B). Spreadstar™ generates and displays the Calculated CFR (C). This value is stored for the product or a value can be entered to override the Calculated CFR.
19. The accuracy of the Calibrated CFR can be checked by running the calibration procedure again, this time using the Calculated CFR as the Expected CFR. If the Calculated CFR is correct, the “Desired Weight of Product” to dispense entered closely matches the measured weight of product when the procedure is run.
20. Connect previously disconnected electrical connector to spinner PWM valve.

A—Input Box
B—Enter Button

C—Calibrated CFR Value

Cal Done: Enter Measured Weight of Product

Product Number: 1

Product Bin: Bin 1

Expected CFR (cu.ft/rev): 0.346

Product Density During Calibration (lbs/cu.ft): 60.0

Feed Gate Opening During Calibration (in): 3.00

Desired Weight of Product (lbs): 749.6

Measured Weight of Product (lbs): 776.0 (A)

Estimated Material Dispensed (lbs): 750.20

Calculated CFR (cu.ft/rev): 750.20 (B)

Start Cal: Enter estimated CFR, Density, Gate Opening and Desired Weight

Product Number: 1

Product Bin: Bin 1

Expected CFR (cu.ft/rev): 0.339

Product Density During Calibration (lbs/cu.ft): 60.0

Feed Gate Opening During Calibration (in): 3.00

Desired Weight of Product (lbs): 0.0

Calculated CFR (cu.ft/rev): 0.339 (C)

N78485—UN—22OCT07

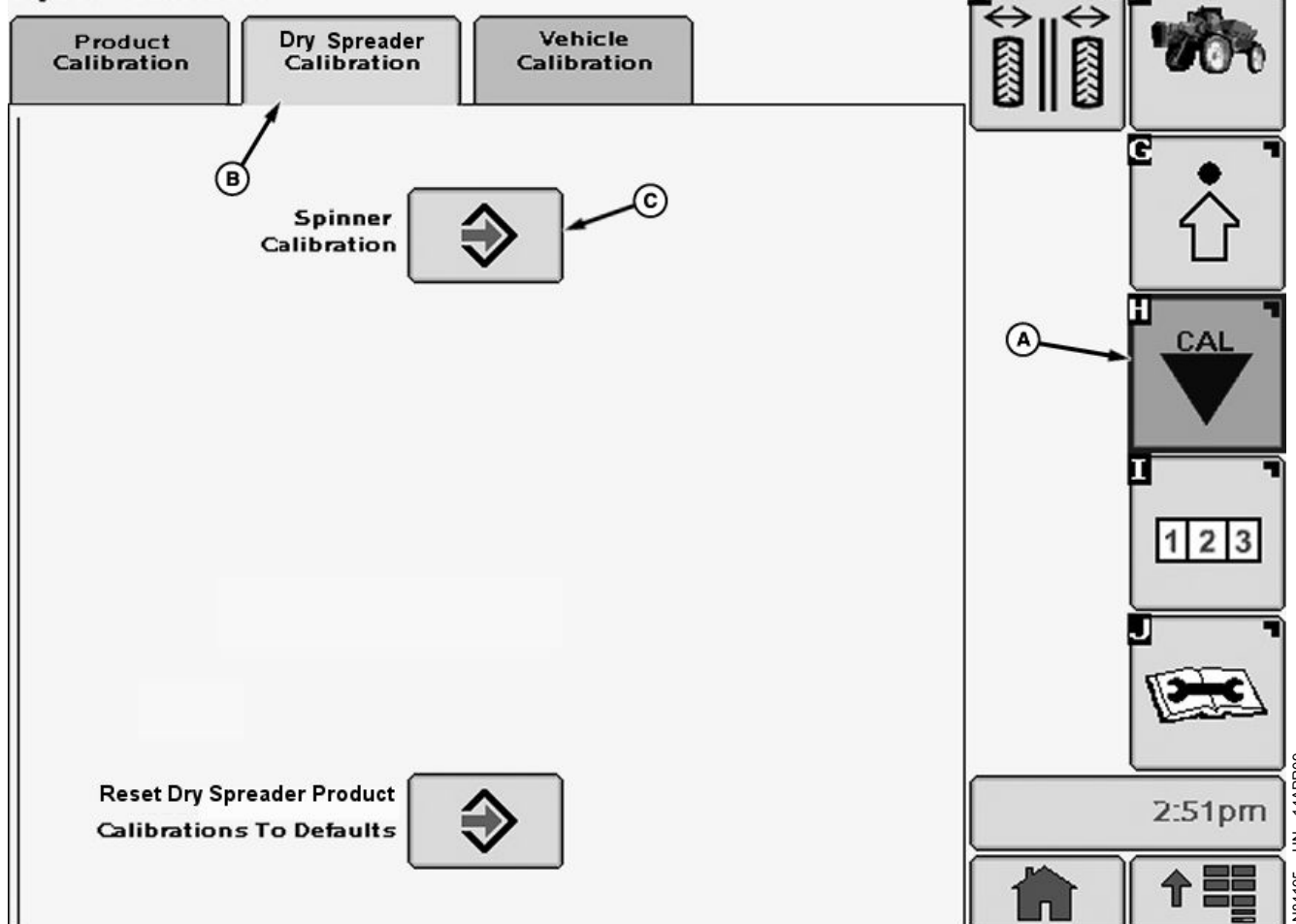
N78486—UN—22OCT07

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OUC6092,00009B1 -19-19MAY15-5/5

Spinner Calibration

Drybox - Calibration



A—Calibration Softkey

B—Dry Spreader Calibration Tab

C—Enter Button

CAUTION: Spinners will reach maximum speed!
Calibrate in an open, safe area.

NOTE: Must be performed at normal operating temperature 140° F (60° C).

1. Park machine in an open, safe area.

2. Select the Calibration softkey (A).

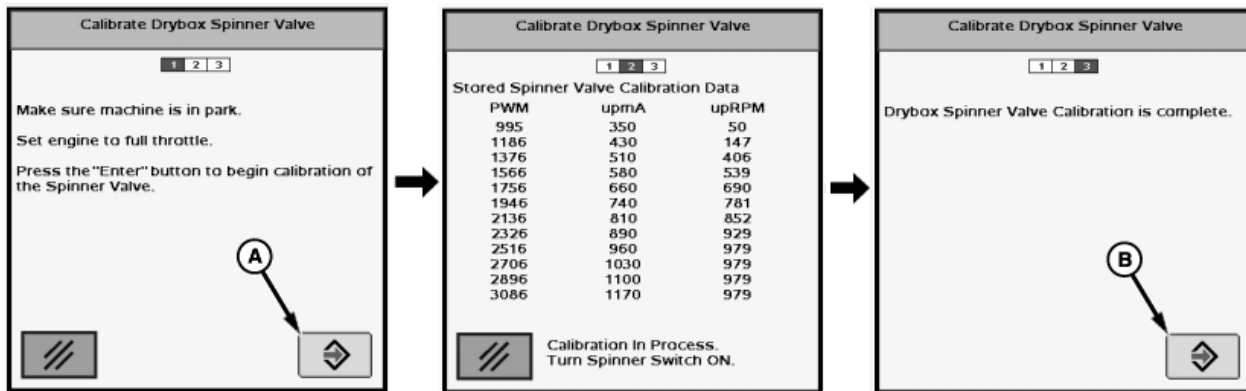
3. Select the Dry Spreader Calibration tab (B).

4. Select the Enter Button (C) next to Spinner Calibration to go to the calibration procedure.

Continued on next page

CS12167,0000379 -19-08MAY13-1/2

N84195—UN—14APR09



N78776—UN—08NOV07

A—Enter Button

B—Enter Button

NOTE: Solution PUMP ENGAGE switch is used as SPINNER ENABLE switch when dry spreader is installed. MASTER ON switch on multifunction control handle is used for CONVEYOR BELT START switch.

If the spinners are running prior to entering calibration mode, the operator will be notified to wait until spinners stop to start calibration.

5. Follow instructions on first screen. When finished select the Enter button (A) to start the calibration

procedure. Turn on the spinners to begin calibration procedure by enabling the pump engage switch. Old calibration numbers will be displayed. Calibration may take several minutes. New calibration numbers will replace old numbers.

6. Shut off spinner when advised to do so.
7. "Drybox Spinner Valve Calibration is complete" will be displayed. Press Enter button (B) to return to Drybox Calibration tab.

CS12167,0000379 -19-08MAY13-2/2

Spreader Check Test

Spreader-Diagnostics

Readings **Tests** **Recent Problems** **Controller Diagnostics**

Select a Test **Spreader Check**

Select rate and enter test speed, then activate spreader.

Rate 1 250 85 Rate 2 350 175 Rate 3 500 250 (lbs/ac)

Product Bin **Bin 1** Test Speed **10.0** mi/h

Actual Rate Applied 340 lb/ac **Actual Rate Applied** 749 lb/ac

Bin 1 UREA **Bin 2** MAP **Spinner Enabled**

Actual Belt RPM Bin 1 349 **Actual Spinner RPM** 750

Target Belt RPM Bin 1 350 **Target Spinner RPM** 750

Check Box ☒

3:31pm

A—Diagnostics Softkey
B—Tests Tab
C—Drop-Down Box
D—Input Box

E—Pre-programmed Target Rates Per Area
F—Drop-Down Box
G—Actual Rate Applied

H—Actual Belt RPM Bin 1
I—Target Belt RPM Bin 1
J—Actual Spinner RPM

K—Target Spinner RPM
L—Product
M—Check Box

Spreader Check is a procedure to check your application rate at a desired speed while the machine is not moving. The following items can be determined:

- If the actual application rate can meet the target application rate at a given speed
- The actual applied rate
- If the actual belt rpm can meet the target belt rpm at a given speed
- If the actual spinner rpm can meet the target spinner rpm at a given speed

Procedure can also be run with box empty to verify conveyor and spinner operate as desired.

IMPORTANT: Always fill spreader box with enough product to do a proper spreader check.

1. Select Diagnostics softkey (A).

2. Select the “Tests” tab (B).

3. Select “Spreader Check” from the tests drop down menu (C).

4. Select input box (D) next to Test Speed. Enter a speed value, such as 16.1 km/h (10 mi/h), using pop-up keyboard. Select the enter button to accept new value.

NOTE: The application rate to be tested must be pre-programmed into the Spreadstar™ system. (See Setting Application Rates in this manual.)

5. Turn rate select knob to target application rate (manual, 1, 2, or 3). Rate shown in this example is (E) 350 lbs/acre.

NOTE: Check is performed separately for each bin if equipped with dual bin spreader.

Continued on next page

OUC6092,00009B2 -19-19MAY15-1/2

6. Select bin to test from the drop down box (F).
7. The spinners can be enabled during this test by selecting check box (M).

NOTE: Solution PUMP ENGAGE switch is used as SPINNER ENABLE Switch when dry spreader is installed. MASTER ON switch on multifunction control handle is used for CONVEYOR BELT START switch.

8. Operate engine at maximum RPM and engage Master ON with spinners disabled.
9. Hold a known volume container under belt and measure output for one minute.

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The actual application rate is shown at location (G).

If the actual application rate does not get to the target rate, the gate opening needs to be increased.

If the volume is higher than expected, the gate opening needs to be decreased.

Compare the target belt speed (I) and the actual belt speed (H), which are displayed for the product bin selected, to see if the system is capable of reaching the target belt speed.

Compare the target spinner speed (K) and the actual spinner speed (J) to see if the system is capable of reaching the target spinner speed.

OUO6092,00009B2 -19-19MAY15-2/2

Diagnostic Readings

Spreader - Diagnostics

Readings

Tests

Recent Problems

Controller Diagnostics

Vehicle Serial Number N04930X004109

Total Engine Hours 247.0

Page: 2

Select a Sub-System for Diagnostics

Spreader System
▼

Hydraulics Enable Off

Command

Spinner Command (%) 0.0

Spinner Current (A) 0.00

Spinner Frequency (Hz) 0

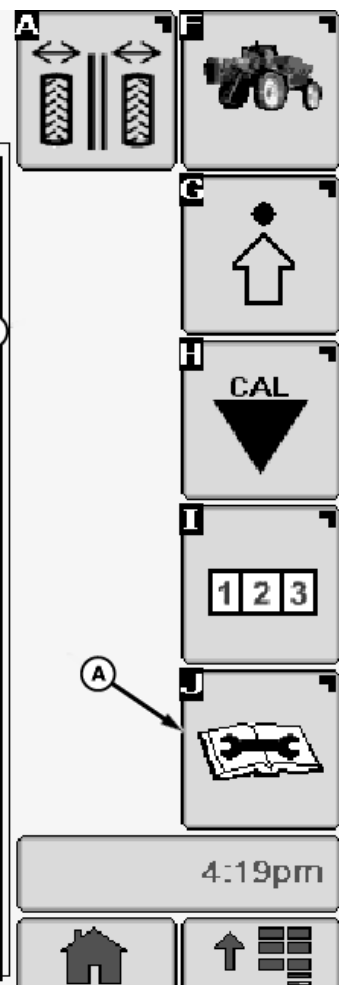
Conveyor 1 Speed (Hz) -10000

Conveyor 2 Speed (Hz) 0

Conveyor 1 Open (%) 0.0

Conveyor 1 Close (%) 0.0

➔



A—Diagnostics Softkey

B—Readings Tab
C—Drop-Down Menu

D—Enter Button

1. Select the Diagnostics softkey (A) to view the sprayer diagnostics menu.
2. Select the “Readings” tab (B).
3. Select drop-down menu (C) next to “Select a Sub-System for Diagnostics” and select between:
 - Armrest
 - Cab

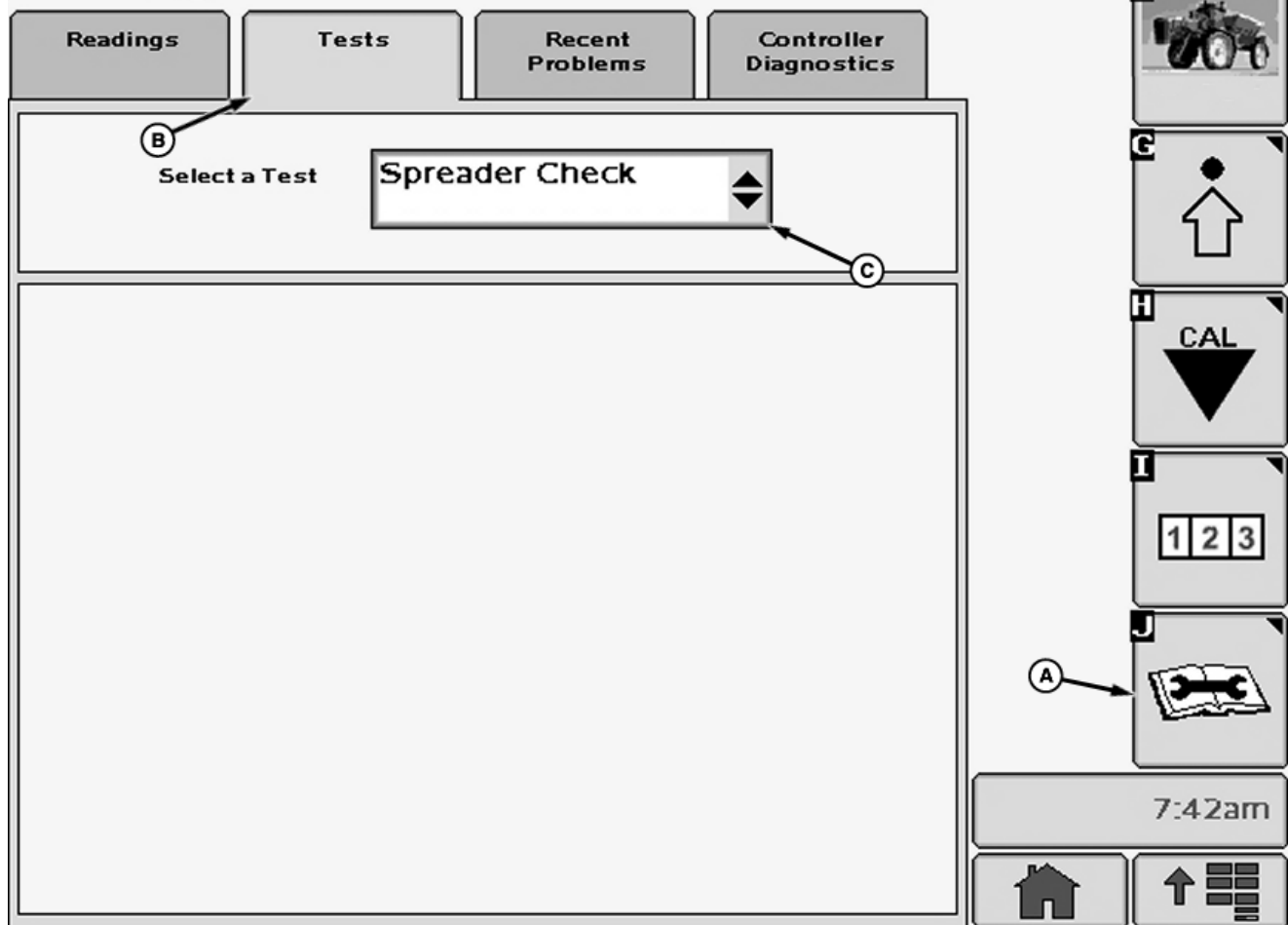
- Hydro Handle
- Drive Train
- Engine
- Vehicle
- Spreader System

4. Select the Enter Button (D) to go to next page of readings.

OUC6092,0000299 -19-27OCT09-1/1

Diagnostic Tests

Spreader-Diagnostics



A—Diagnostics Softkey

B—Tests Tab

C—Drop-Down Menu

1. Select the Diagnostics softkey (A) to view the sprayer diagnostics menu.
2. Select the "Tests" tab (B).
3. Select a test from the tests drop-down menu (C).

OUC6092,0001068 -19-23OCT07-1/1

Recent Problems

Sprayer - Diagnostics

Readings **Tests** **Recent Problems** **Controller Diagnostics**

Select a Controller to view faults codes: **SSU - AutoTrac Controller** (C)

Clear Fault Codes (D)

Active Fault codes are shown with an *

* 523826.10	Uncommanded WAS Motion
1079.04	Steering System
523826.01	WAS Low
84.09	Steering System

(A) [Wrench Icon]

[Warning Icon] **Park Brake**

[Home Icon] [Up Arrow Icon]

A—Diagnostics Softkey
B—Recent Problems Tab

C—Drop-Down Menu
D—Clear Fault Codes Button

To view fault codes:

1. Select the Diagnostics softkey (A) to view the sprayer diagnostics menu.
2. Select the "Recent Problems" tab (B). A list of controllers with active fault codes will be listed on this

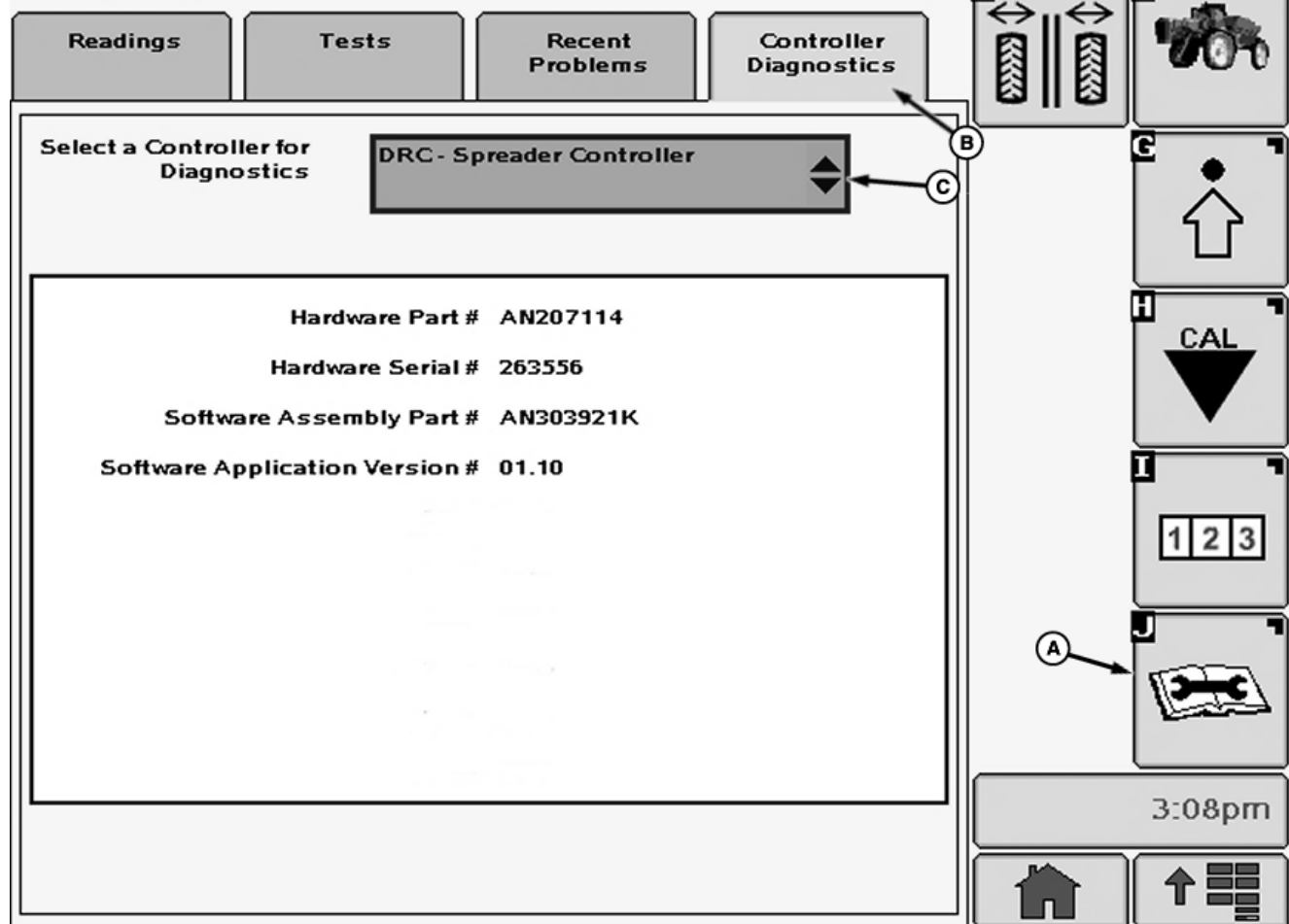
page. Select a controller from the drop-down menu (C) to view or erase codes for that specific controller. Press the "Clear Fault Codes" button (D) to clear fault codes for the selected controller.

OUO6092,0001069 -19-23OCT07-1/1

N78489 —UN—23OCT07

Controller Diagnostics

Sprayer - Diagnostics



A—Diagnostics Softkey

B—Controller Diagnostics Tab

C—Drop-Down Box

1. Select the Diagnostics softkey (A) to view the sprayer diagnostics menu.
2. Select the Controller Diagnostics tab (B).
3. Select drop-down box (C) next to “Select a Controller for Diagnostics” and select from controllers available.
4. The diagnostics provided are limited to the current controller and software part numbers, controller serial number and software application versions on the selected controller.

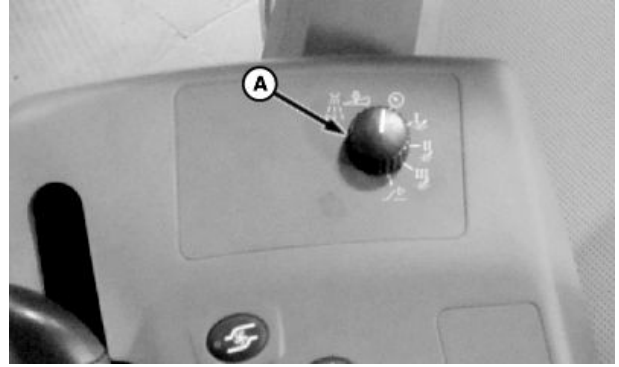
OUC6092,0001084 -19-04DEC07-1/1

Setup of Prescriptions with Spreadstar

1. Turn rate select switch (A) to “AUX” position to put Spreadstar™ in prescription mode.

NOTE: Verify product rate mode and correct product for each bin is selected in Bin Setup tab of Spreadstar™ Dryrate Controller.

A—Rate Select Switch



N98782 —UN—24APR13

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Continued on next page

OUC6092,00009B3 -19-19MAY15-1/13

GreenStar 2 Pro - R/C

A—Resources/Conditions
Softkey

B—Resources Tab
C—Input Box

D—Input Box
E—Input Box

F—Input Box

2. Select the Resources/Conditions softkey (A) from the GreenStar menu.
3. Select the Resources tab (B). Resources screen will be shown.

4. Select input boxes (C—F) to input the Client, Farm, Field, and Task into Spreadstar.

Continued on next page

OUC6092,00009B3 -19-19MAY15-2/13

N78784—UN—16NOV07

GreenStar 2 Pro - Equipment

Machine

Boom

Machine Type
Sprayer B

Machine Model
4940

Machine Name
4940

Connection Type
Rear Right 3-pt

Machine Turn Radius
22.0 (ft)

Turning Sensitivity
70

Offsets

Change Offsets C

* Recording Source

Coverage Only

Enable Monitoring without GPS

Memory Used

A

B

C

D

E

F

G

H

I

J

STOP

Emergency

Home

Up

5. Select the Equipment softkey (A) from the GreenStar menu.

NOTE: Most settings are automatically filled in.

6. Select the Machine tab (B). Machine screen appears. Select the proper machine type, model, and name from the drop-down menus.
7. To change machine offset settings, select "Change Offsets" button (C). Machine Offsets menu appears.
8. Enter correct machine offset settings in input boxes (D) according to definitions A—D listed on the screen.
9. Press "Enter" button (E) to accept new values.

A—Equipment Softkey
B—Machine Tab
C—Change Offsets Button

D—Input Box (4 used)
E—Enter Button

Machine Offsets

A 0.0 (in)

B 117.5 (in)

C 122.5 (in)

D 0.0 (in)

Non-Steering Location

A Lateral distance from center-line of machine to GPS receiver

B In-line distance from non-steering axle to GPS receiver

C In-line distance from non-steering axle to connection point

D Vertical distance from the GPS receiver to the ground

E

Continued on next page

OUC6092,00009B3 -19-19MAY15-3/13

GreenStar 2 Pro - Equipment

Machine

Boom

Implement Type

Dry Box

Implement Model

Implement Name

Spreader

Physical Width (ft)
12.000

*** Implement Width (ft)**
90.0

Track Spacing (ft)
89.500

Change Widths

←

→

90.0

Offsets

Offsets for this platform are entered on the Machine tab.

Widths

1 2 3

STOP

Emergency

Home

↑

10. Select the Boom tab (A). Boom screen will be shown. Set the implement name.
11. Select "Change Widths" button (B) to change vehicle track spacing. Change Widths menu appears.
12. Select input box (C) and set vehicle track spacing for product being applied. Actual implement spread width (grayed out box) comes from Spreadstar™ controller product setup information. (See GreenStar Parallel Tracking System operators manual for more information.)
13. Press "Enter" button (D) to accept new values.

A—Boom Tab C—Input Box
 B—Change Widths Button D—Enter Button

Change Widths

(ft)(rows)

Implement Width (ft)

90.0

Track Spacing (ft)

89.500

Physical Width (ft)

12.000

←

→

90.0

Enter

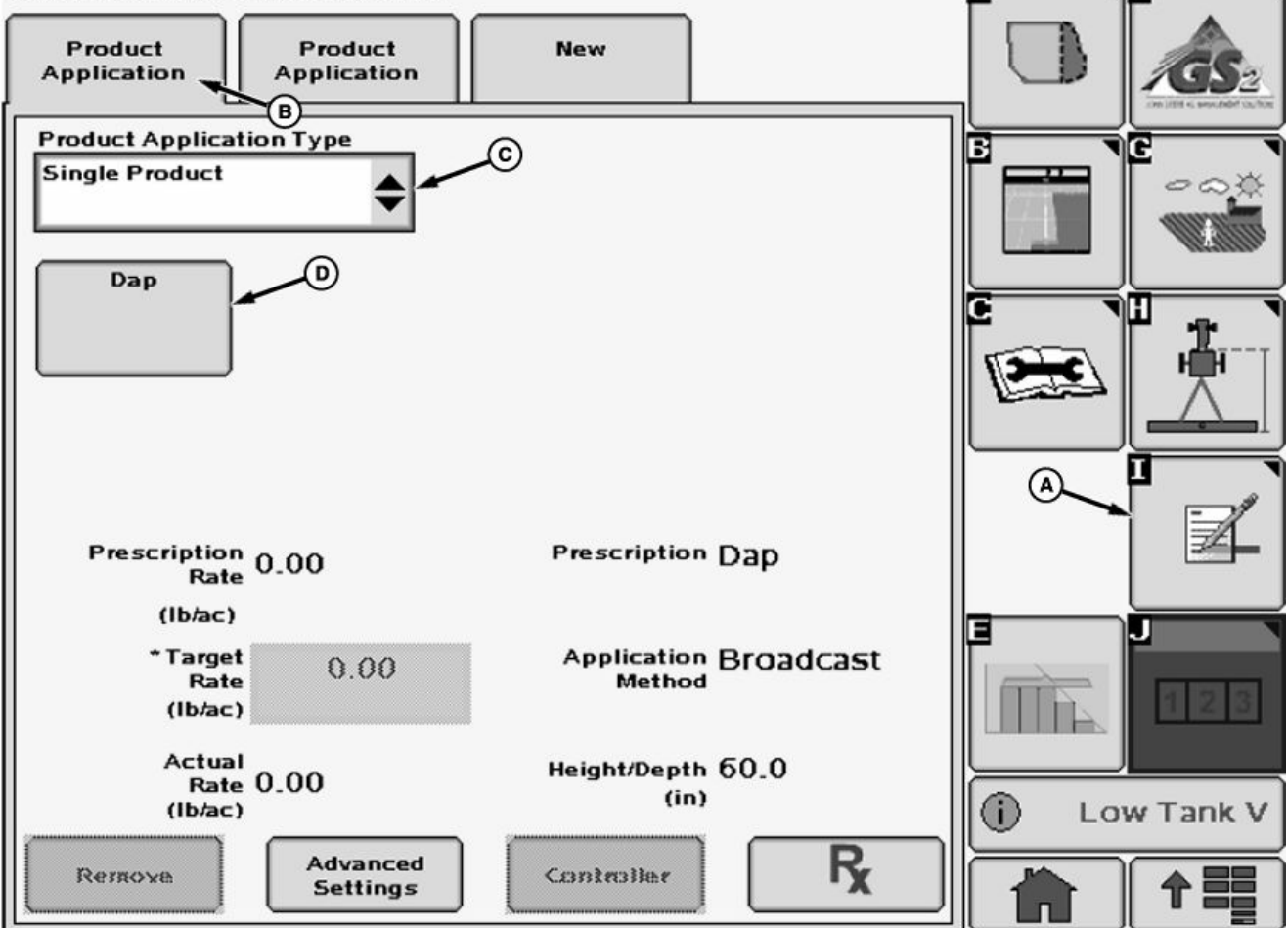
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OUO6092,00009B3 -19-19MAY15-4/13

25-38

081315
PN=116

GreenStar 2 Pro - Documentation



A—Documentation softkey

B—Product Application tab

C—Drop-down Box

D—Button

14. Select Documentation softkey (A) from the GreenStar menu.

NOTE: For dual bin systems, two Product Application tabs are automatically created. The left tab is for Bin 1 (front bin), the right tab for Bin 2 (rear bin).

15. Select the Product Application tab (B).

16. Select "Single Product" from Product Application Type drop-down box (C).

NOTE: The product selected in Spreadstar™ setup does not automatically carry over to GreenStar display Documentation.

17. Select "Add Product" from button (D). Product Application screen will appear.

Continued on next page

OUC6092.00009B3 -19-19MAY15-5/13

Product Application

* Product Type: Fertilizer (Callout A points to the dropdown arrow)

* Product Name: Dap (Callout B points to the text input field)

* Rate Units: lb./ac. (Callout C points to the Enter button at the bottom right)

A—Drop-down Box

B—Drop-down Box

C—Enter Button

18. Select the product type (A) and the product name (B). Add desired product name by selecting “New” and using keyboard to name the specific product being applied.

19. Select Enter button (C) to return to Product Application tab.

NOTE: Rate units are grayed out to lb./ac.

OUO6092,00009B3 -19-19MAY15-6/13

N78788 —UN—16NOV07

20. Select the Rx button (A). Prescription screen will be displayed.

A—Prescription Button

GreenStar 2 Pro - Documentation

Product Application Type: Single Product

Dap

Prescription Rate 0.00 (lb/ac)

* Target Rate 0.00 (lb/ac)

Actual Rate 0.00 (lb/ac)

Prescription Dap

Application Method Broadcast (Callout A points to the Rx button)

Height/Depth 60.0 (in)

Buttons: Remove, Advanced Settings, Controller, Rx (A), Low Tank V

Continued on next page

OUO6092,00009B3 -19-19MAY15-7/13

N78795 —UN—16NOV07

21. Select the prescription name from drop-down list (A).
22. Select input box (B) and enter Look Ahead time. This setting is optional and controls how many seconds the system begins to change the rates before crossing into the next rate zone.
23. Select input box (C) and enter Prescription Multiplier (%). This feature allows the operator to make in-cab adjustments to the prescriptions.
24. Select Enter button (D) to return to Product Application tab.

A—Drop-Down List
B—Input Box

C—Input Box
D—Enter Button

The screenshot shows the 'Prescription' screen with the following fields and controls:

- Prescription:** A drop-down menu showing 'Potash' (labeled A).
- Date Created:** 10/10/2007
- * Product Type:** Fertilizer
- Rate Units:** lb/ac
- Look Ahead (sec):** An input box containing '0.0' (labeled B).
- Min:** 0.00
- Max:** 320.46
- Out of Field:** 0.00
- Loss of GPS:** 0.00
- Prescription Rate (lb/ac):** 0.00
- Prescription Multiplier (%):** An input box containing '100' (labeled C).
- Enter Button:** A button with a right-pointing arrow (labeled D).

N78789 —UN—16NOV07

Continued on next page

OUO6092.00009B3 -19-19MAY15-8/13

GreenStar 2 Pro - Documentation

Product Application

Product Application

New

Product Application Type

Single Product

Dap

Prescription Rate 0.00 (lb/ac)

Target Rate 0.00 (lb/ac)

Actual Rate 0.00 (lb/ac)

Prescription Dap

Application Method Broadcast

Height/Depth 60.0 (in)

Remove

Advanced Settings

Controller

R_x

A

B

C

D

E

F

G

H

I

J

Low Tank V

Home

Up

A—Prescription Name

B—Target Rate

NOTE: Once a prescription is selected, the name (A) is displayed and the target rate (B) is "grayed" out. The rate displayed is the rate called for by the prescription for the current spreader vehicle location. If vehicle is outside of the field, the rate may be 0.00.

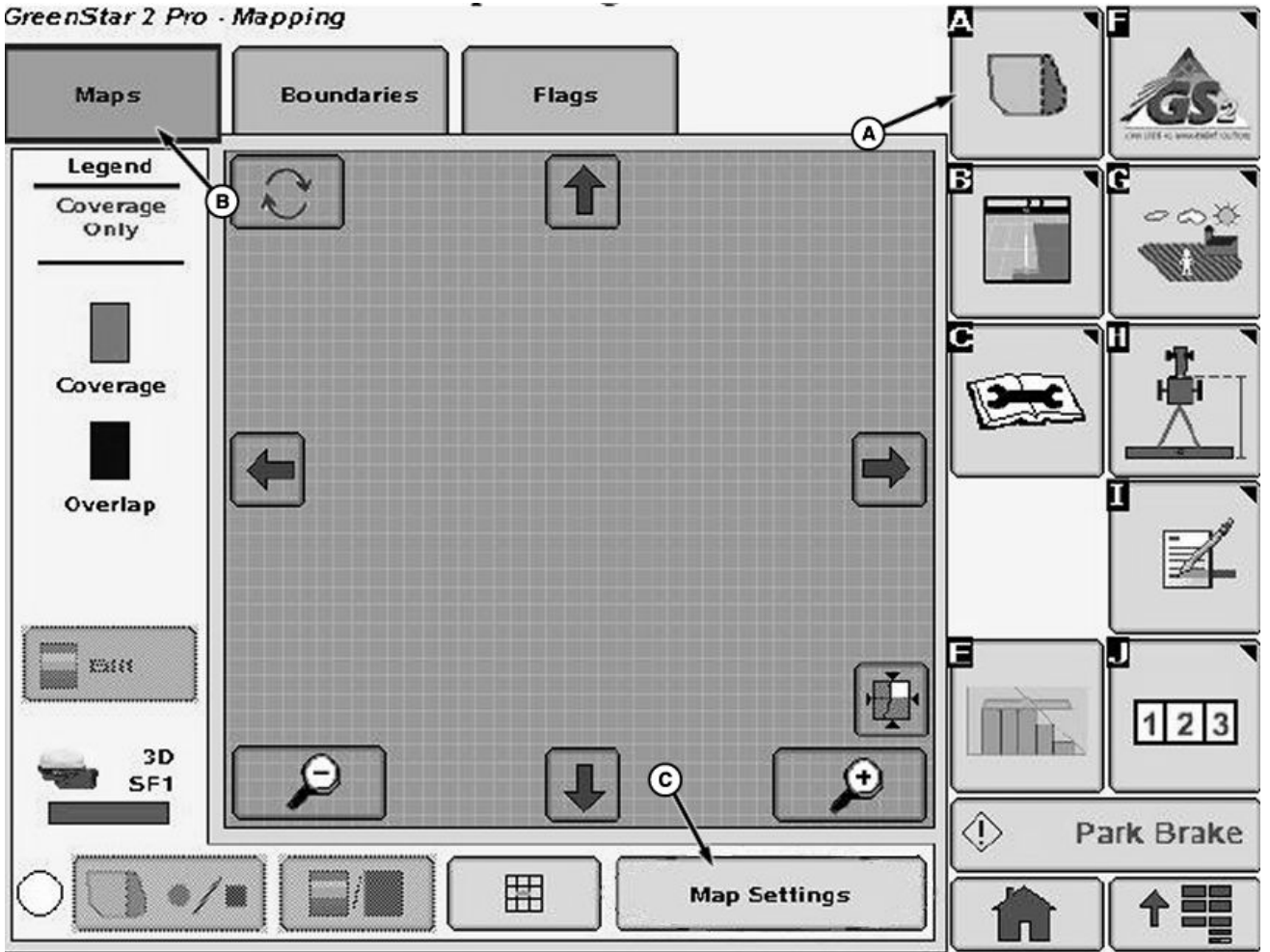
25. Repeat for second bin, if equipped.

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OUO6092,00009B3 -19-19MAY15-9/13

N78796—UN—16NOV07

GreenStar 2 Pro - Mapping



A—Mapping Softkey

B—Maps Tab

C—Button

26. Select Mapping softkey (A) from the GreenStar menu.

27. Select Maps tab (B).

28. Select Map Settings button (C). Map Settings screen will appear.

Continued on next page

OUO6092,00009B3 -19-19MAY15-10/13

N78791—UN—16NOV07

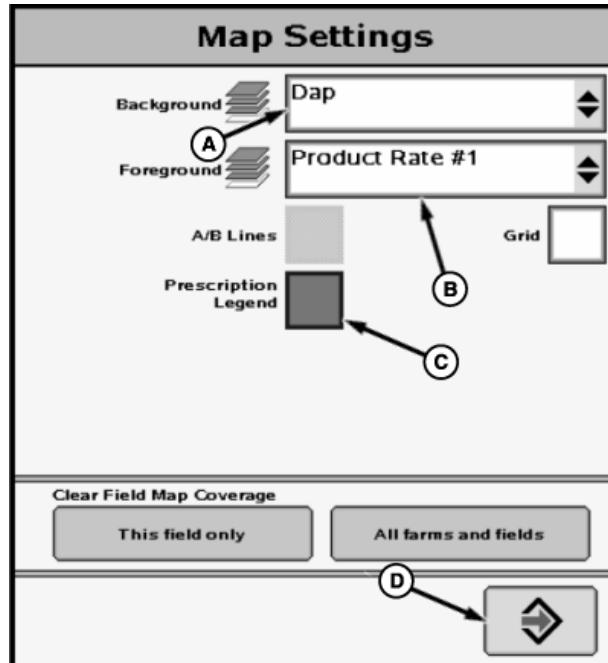
NOTE: Only one prescription at a time can be viewed as a background layer, but by choosing the correct Swath Control Pro main run page under GreenStar Display layout manager the operator can toggle between bin 1 and 2 quickly.

29. Select the prescription name from the drop-down box (A) to set the prescription as a background layer.
30. To set an as applied map, select "Product 1" (Bin 1) or "Product 2" (Bin 2) from drop-down box (B).

NOTE: If prescription was made with a program other than Apex, the Prescription Legend colors may not be accurate in relation to the Background map colors.

31. Select check box (C) next to "Prescription Legend" to set the as-applied map legend to match prescription background colors.
32. Press Enter button (D) to return to Maps tab.

A—Drop-Down Box
B—Drop-Down Box
C—Check Box
D—Enter Button

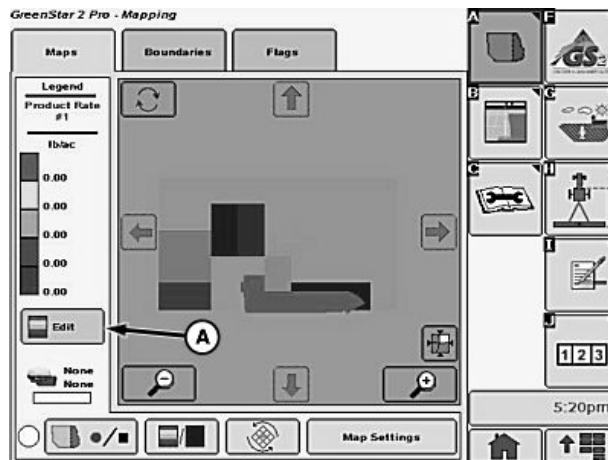


N78792 —UN—16NOV07

OUC6092,00009B3 -19-19MAY15-11/13

33. Set as applied map legend. If Prescription Legend is not used, the legend ranges can be manually assigned with the edit button (A).
34. Configure the home page as desired. You are now ready to begin spreading.

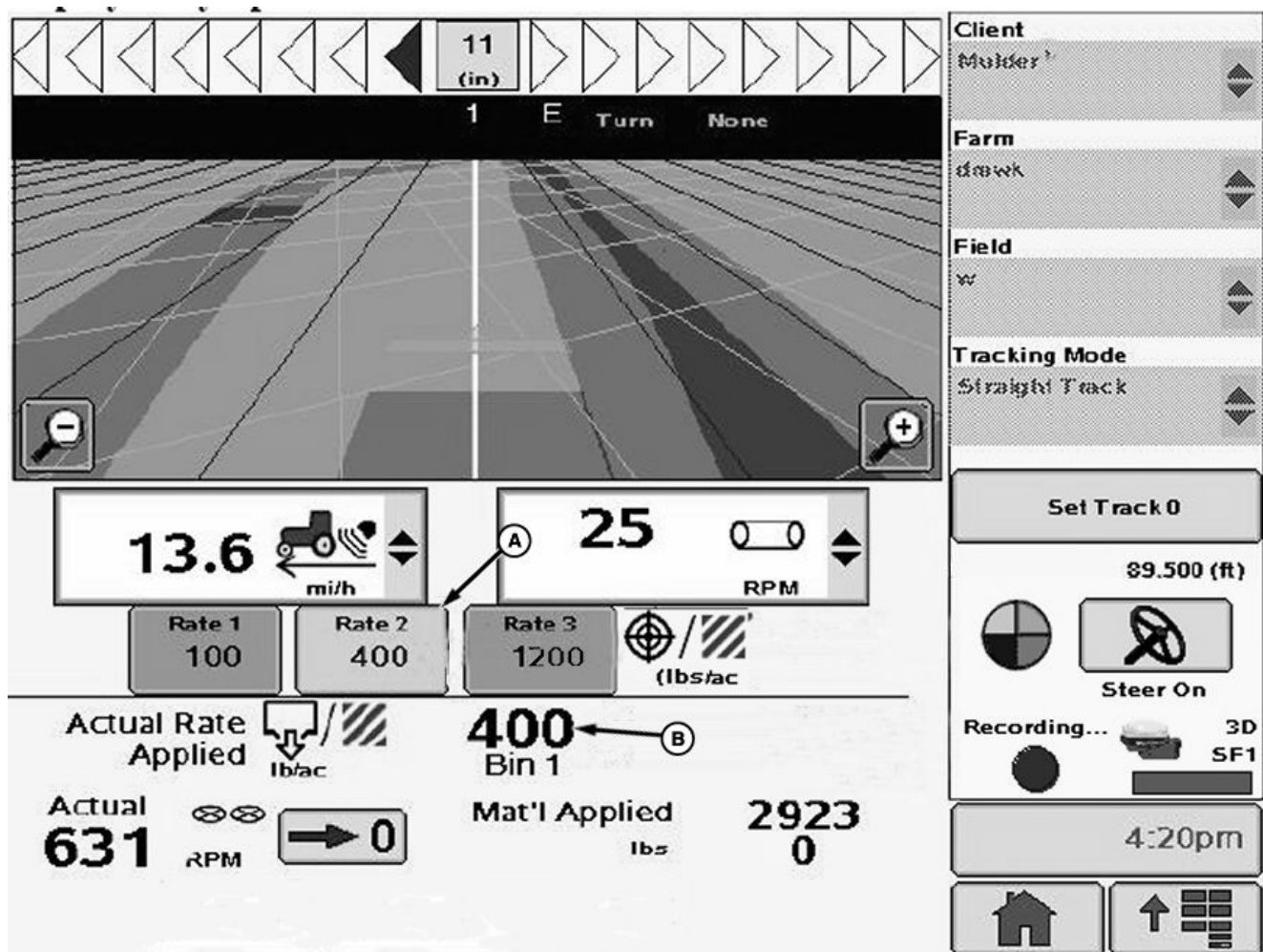
A—Edit Button



N78793 —UN—16NOV07

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OUC6092,00009B3 -19-19MAY15-12/13



A—Target Rate

B—Actual Rate

Following are some things to keep in mind:

- The best indications of the current rates are the Target (A) and Actual (B) rates displayed by Spreadstar™
- Operator can view only one prescription background map and as-applied map at a time. To change maps, go to GreenStar Display Pro-Mapping >> Map Settings

- As-applied map colors may not match the background map colors
- Refer to latest GreenStar Display operator's manual for information on loading and application, prescription application, and software updates

OUO6092,00009B3 -19-19MAY15-13/13

Calculate Feedgate Opening

If feedgate opening is not supplied with fertilizer ticket, use the appropriate equation (English or metric) to calculate correct opening.

Equations can also be used to calculate conveyor speed required for a desired application rate and feed gate opening.

NOTE: To verify CRPM, mark conveyor shaft and run spreader in manual mode with current settings.

A—Feedgate Opening (in.)

B—Yield in (lb./acre)

C—Spread Width (ft.)

D—Average Speed (mph)

E—Conveyor Shaft
Revolutions per Minute
(CRPM)

F—Material Weight in (lb./cu.
ft.)

G—Theoretical CFR (Conveyor
Rate) (cu. ft. per revolution)

H—Feedgate Opening (cm)

I—Yield (kg/ha)

J—Spread Width (m)

K—Average Speed (km/h)

L—Conveyor Shaft
Revolutions per Minute
(CRPM)

M—Material Weight (kg/m³)

N—Theoretical CFR (Conveyor
Rate) (cm³ per revolution)

$$A = \frac{B \times C \times D}{495 \times E \times F \times G}$$

Equation for English Measurement

$$H = \frac{I \times J \times K}{0.0006 \times L \times M \times N}$$

Equation for Metric Measurement

Theoretical CFR Values			
CFR (metric) ^a	CFR (English) ^b	Conveyor Type	Model
2854	0.256	Belt Over Chain Conveyor	DN456 and DN485
3400	0.305	Straight Belt Conveyor	DN456 and DN485
1605	0.144	Belt Over Chain Conveyor	Second Product Bin

^aBased on 1.0 cm feed gate opening

^bBased on 1.0 in. feed gate opening

CS12167,0000539 -19-29JAN14-1/1

Spreadstar™ Warning Statements

The Spreadstar™ system alarms and diagnostics are helpful and informative tools designed to alert the operator to many different conditions. Depending on the severity of the situation, many alarms are accompanied by an audible alarm from the Spreadstar™ display.

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There are 3 types of alarms:

- Stop
- Caution
- Information

OUC6092,00009B4 -19-19MAY15-1/1

N79290 —UN—07DEC07

N82406 —UN—18NOV08

Stop Warnings

The stop Indicator lamp (A) lights and flashes on the corner post display. The SprayStar display is cleared and a full-page warning message appears.

Stop warning alarms are set by a controller to indicate a warning to the operator to stop the machine or damage could occur. These warnings are shown as a full page on the display with a continuous audible alarm until the alarm goes away.

A continuous audible alarm is sounded.

A—Stop Indicator Lamp



N89300—UN—03SEP10

N74951—UN—05FEB07

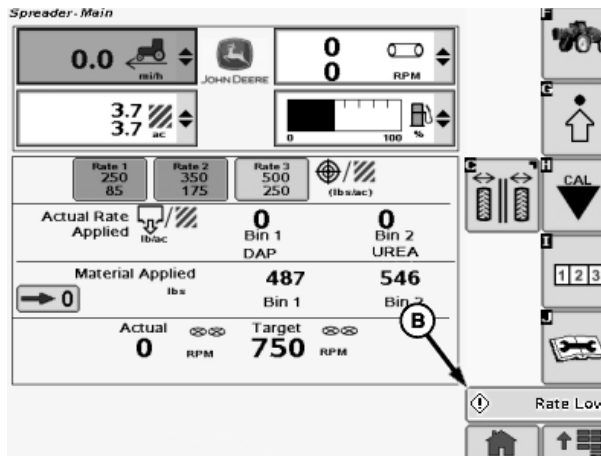
OUO6092,0000510 -19-07MAR11-1/1

Message Center Cautions and Warnings

The Caution Indicator Lamp (A) lights on the corner post display. A caution message (B) appears in the SprayStar display's Message Center. The message remains visible as long as the condition persists.

An audible alarm is sounded when the continuous caution first appears.

A—Caution Indicator Lamp **B—Caution Message**



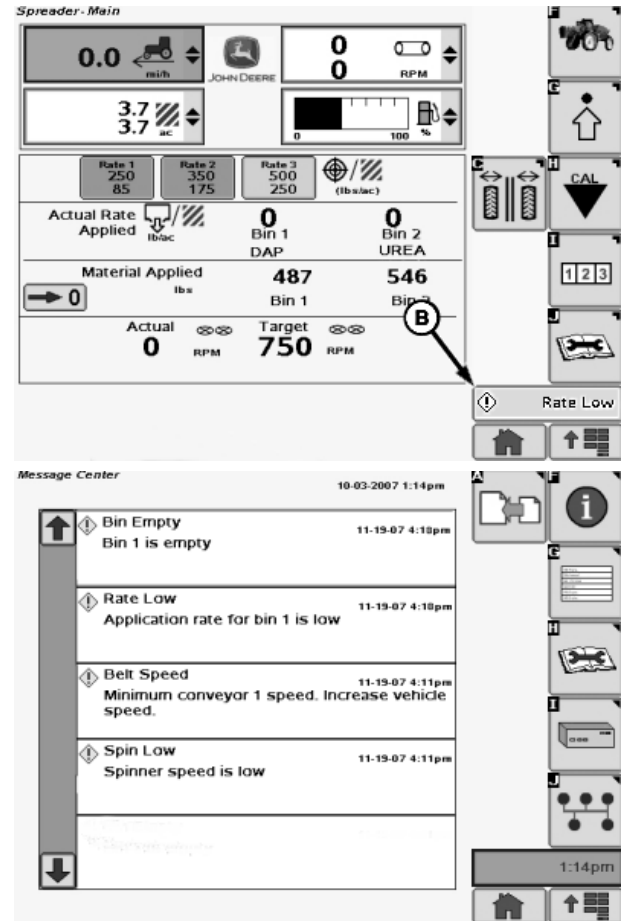
N89299—UN—03SEP10

N91681—UN—07MAR11

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OU06092,0000511 -19-07MAR11-1/2

Select Message Center button (A) and a Message center screen will appear showing a list of the warnings.



N91682—UN—12JUL12

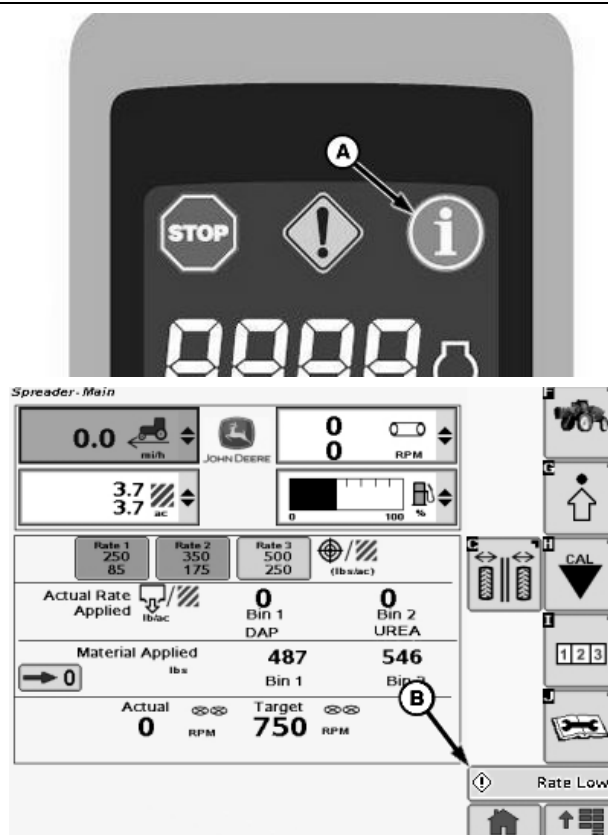
N86776—UN—27OCT09

OUO6092,0000511 -19-07MAR11-2/2

Information (Protect) Messages

The Information Indicator Lamp (A) lights on the corner post display. A information message (B) appears in the SprayStar display's Message Center. Select Message Center button and a Message Center screen will appear showing a list of the messages.

A—Information Indicator Lamp B—Message



N91116 —UN—15FEB11

N91682 —UN—12JUL12

OUO6092,0000577 -19-07APR11-1/1

Pre-Starting Checks

Informational Decal

Decal A

NOTICE

Spinner assembly and material flow divider have NOT been adjusted at the factory. Before assembling unit, read and follow assembly instructions in the operation and maintenance manual for this unit.

Before spreading material, spread pattern tests must be conducted to properly adjust the spread pattern. Refer to the Spread Pattern section of this manual for adjustment instructions. A spread pattern test kit is available from your John Deere dealer.

Wind, humidity, rain, and other adverse weather conditions can affect spread pattern, resulting in uneven crop growth and loss of yield.

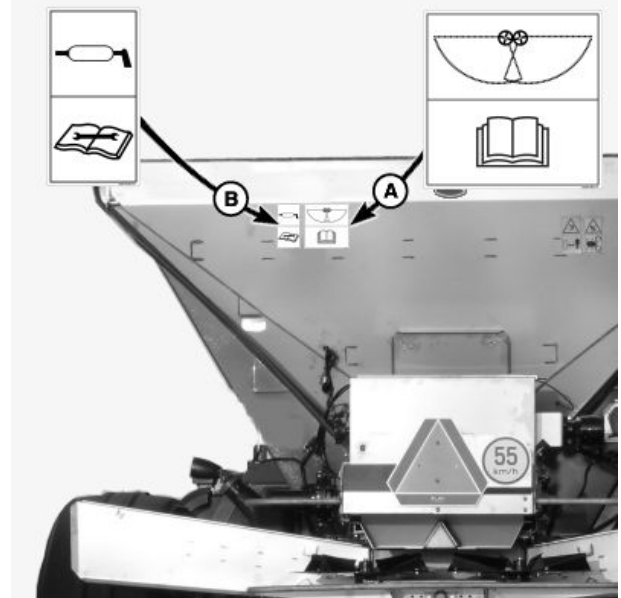
THE MANUFACTURER OF THIS SPREADER WILL NOT BE LIABLE FOR MISAPPLIED MATERIAL DUE TO AN IMPROPERLY ADJUSTED SPREADER OR ADVERSE WEATHER CONDITIONS.

It is recommended that spread pattern tests be conducted prior to each spreading season, after any spreader maintenance, and periodically during the spreading season. Spread pattern tests must be conducted whenever a new product is to be applied.

Decal B

NOTICE

- Spreader hopper life will be noticeably extended if the unit is washed daily when spreading fertilizer.



N101210—UN—26APR13

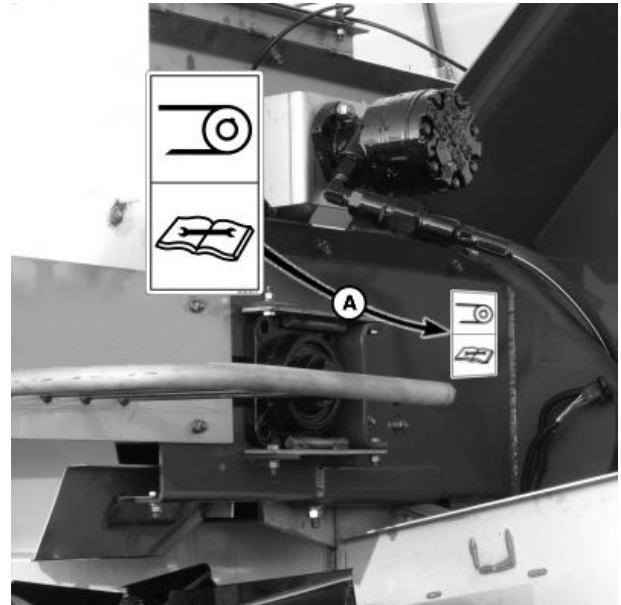
- Wash under side of belt by using water hose in port daily. (See WASH CONVEYOR BELT in Lubrication and Maintenance section.)
- Conveyor belt should be turning during wash cycle.
- Failure to maintain the conveyor will drastically shorten belt life and is cause for voiding the warranty.

OUC6077,0000016 -19-21NOV12-1/3

Decal A

NOTICE

- Spreader hopper life will be noticeably extended if the unit is washed daily when spreading fertilizer.
- Wash under side of belt by using washer hose in wash port daily.
- Conveyor belt should be turning during wash cycle.
- Failure to maintain the conveyor will drastically shorten belt life and is cause for voiding warranty.



N95927—UN—13APR12

Continued on next page

OUC6077,0000016 -19-21NOV12-2/3

Decal A

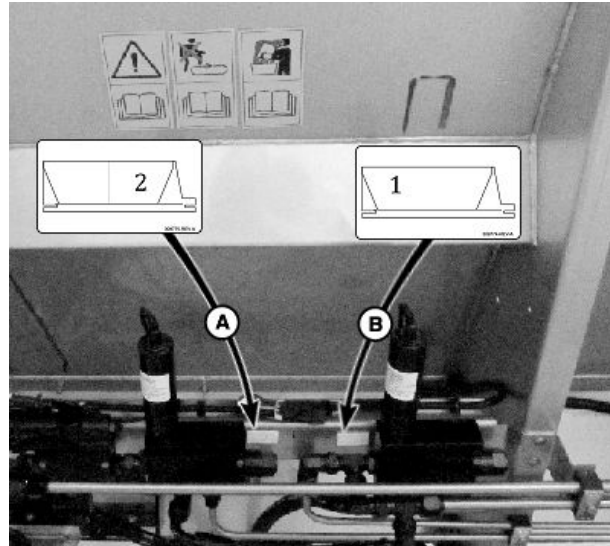
Bin 2 Servo Valve

This valve turns the conveyor on and off for bin 2.

Decal B

Bin 1 Servo Valve

This valve turns the conveyor on and off for bin 1.



N101211 —UN—17DEC12

OQO6077,0000016 -19-21NOV12-3/3

Verify Spinner Orientation

CAUTION: Approximate weight of spinner assembly is 150 kg (340 lb.).

IMPORTANT: Make sure all shipping contents in box have been removed before starting to operate.

1. Verify that distance from rear edge of spinner mounting bracket (A) to rear of sill (B) is to specification (C) on both sides.

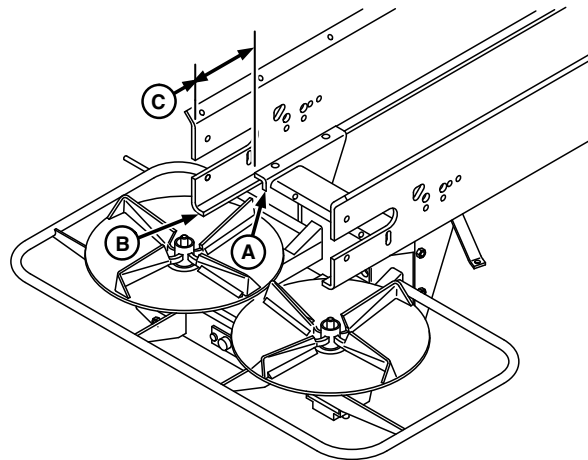
Specification

(C)—Distance..... 25 cm
(9-7/8 in.)

2. Adjust if necessary to achieve equal distance on both sides.

A—Spinner Bracket
B—Rear Edge of Seal

C—Dimension



N97382 —UN—18APR12

OQO6435,00007A8 -19-30MAY12-1/1

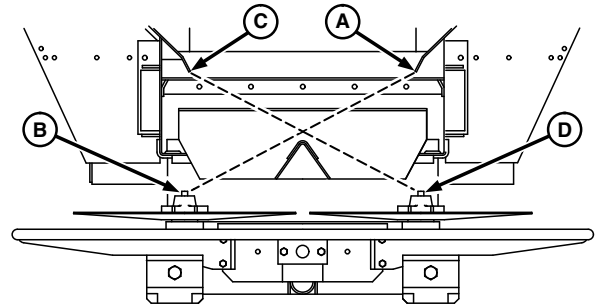
Align Spinner Frame

IMPORTANT: Check at the beginning of each season.

Diagonally measure point (A) to (B) and point (C) to (D).

These measurements are to be equal. If not, loosen the four mounting bolts in the sill and maneuver the frame so these measurements are equal.

A—Right Shield Mounting Edge	C—Left Shield Mounting Edge
B—Left Spinner Disc Mounting Cap Screw	D—Right Spinner Disc Mounting Cap Screw



N97387 —UN—18MAY12

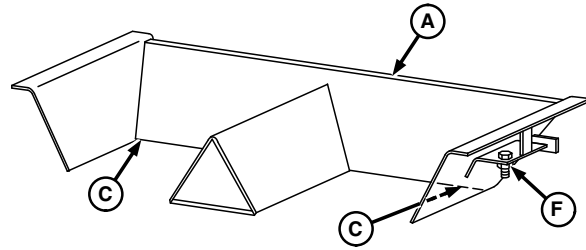
CS12167,00002B8 -19-08MAY13-1/1

Verify Material Divider Position

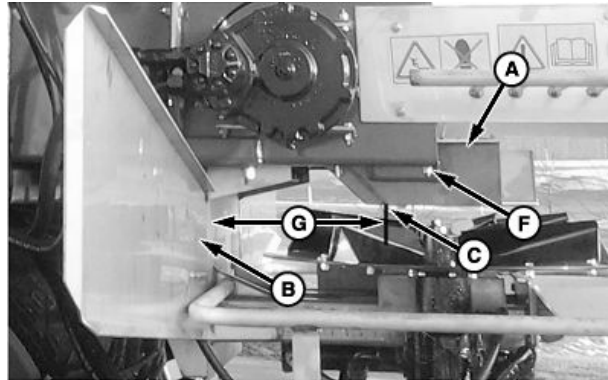
Verify material divider (A) is properly aligned with fan frame and spinners.

1. Material divider needs to be placed at specified measurement (G) back from the deflector plate. Measure from fan frame deflector plate (B) to material divider drop off points (C). Loosen hardware (F) and adjust as necessary.
2. Assure that the unit is square within the sills. Measure diagonally from material divider "V" (D) to the center of the spinner hub cap screws (E). Loosen hardware (F) and adjust as necessary.

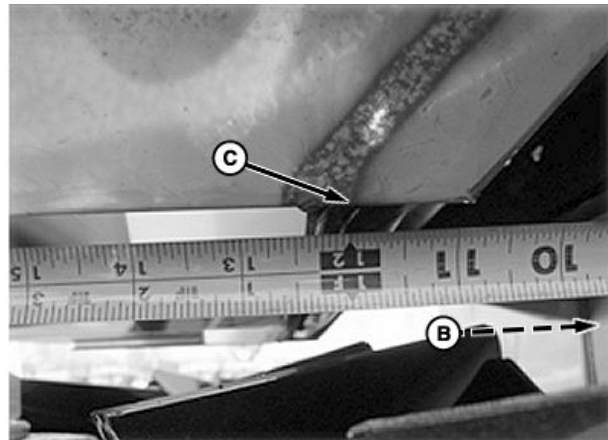
A—Material Divider	E—Spinner Hub Cap Screws
B—Material Deflector	F—Hardware
C—Material Divider Drop Off	G—Measurement—31cm
D—Material Divider "V"	(12-1/4 in.)



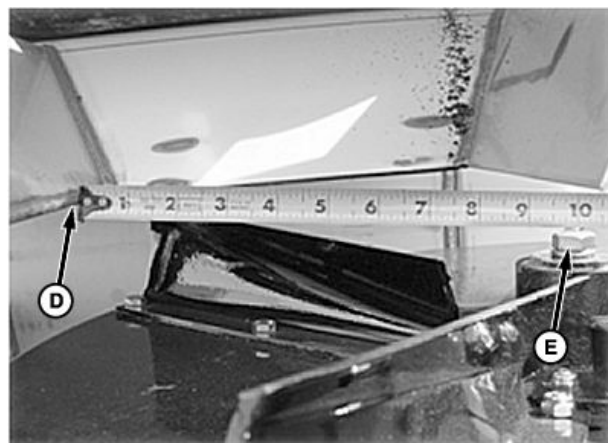
N98569—JUN—24MAY12



N101310—JUN—18DEC12



N98566—JUN—21MAY12



N98567—JUN—24MAY12

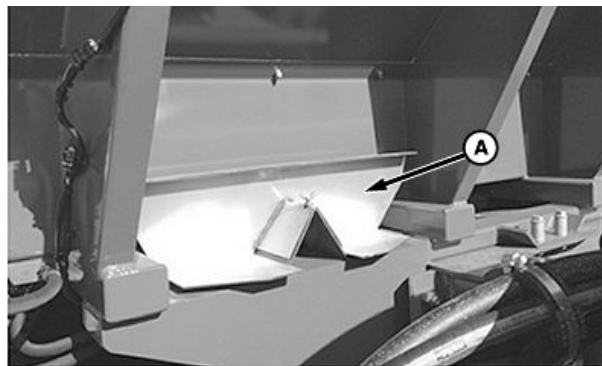
CS12167,00002A8 -19-09MAY13-1/1

Install Material Deflector—Optional

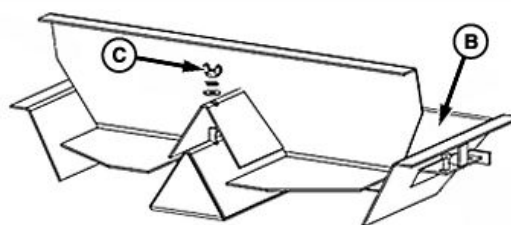
Use deflector plate (A) for fertilizer application.

A—Deflector Plate
B—Material Divider

C—Wing Nut and Washers



Deflector Plate-Shown in Storage Location



OUO6077,0000017 -19-21NOV12-1/1

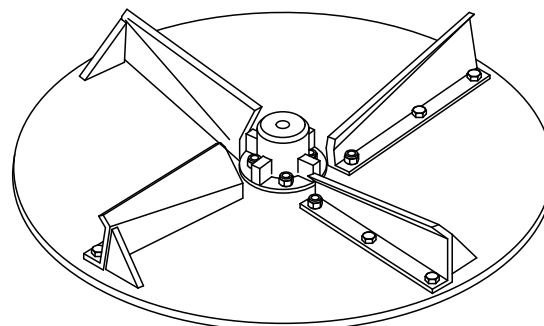
N98568 —UN—21MAY12

N98565 —UN—23MAY12

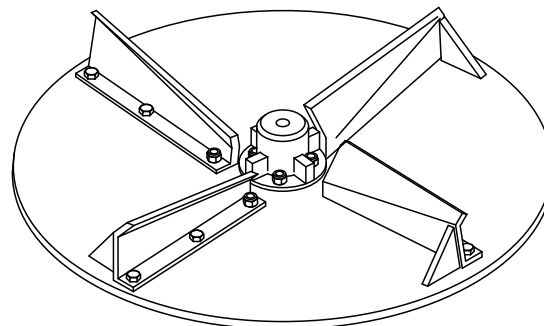
Verify Spinner Fin Installation

Verify the following:

- Gusset faces counter-clockwise for left-hand disc.
- Gusset faces clockwise for right-hand disc.



Left-Hand Spinner Disc



Right-Hand Spinner Disc

Continued on next page

OUO6435,00007A9 -19-31MAY12-1/3

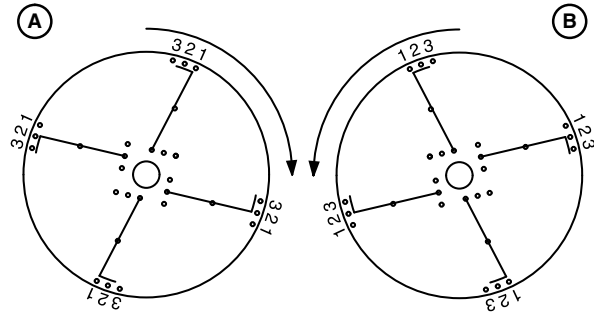
N97834 —UN—04APR12

N97835 —UN—04APR12

- Two opposing fins in position 1 and two opposing fins in position 2.

A—Left-Hand

B—Right-Hand



N97836 —UN—04APR12

OUC6435,00007A9 -19-31MAY12-2/3

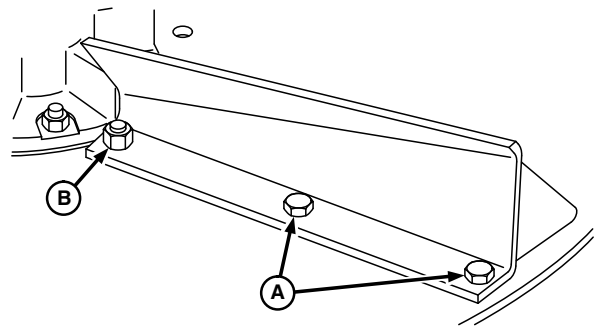
IMPORTANT: Cap screw (B) must be installed with head of bolt on bottom side of disc for the speed sensor. Incorrectly installed hardware will result in machine damage.

NOTE: Spinner speed sensor will not work if stainless steel hardware is used for cap screw (B).

Hardware must be installed as shown.

A—Cap Screws and Lock Nuts
(Head on Top Side of Disc)

B—Cap Screw and Lock Nut
(Head on Bottom Side of
Disc)



Detail of Cap Screw Position

N97838 —UN—04APR12

OUC6435,00007A9 -19-31MAY12-3/3

Verify Spinner Speed Sensor Gap

IMPORTANT: Inner fin mounting hardware (A) must be installed from the bottom up to clear speed sensor.

NOTE: Spinner speed sensor will not work if stainless steel hardware is used for cap screw (A).

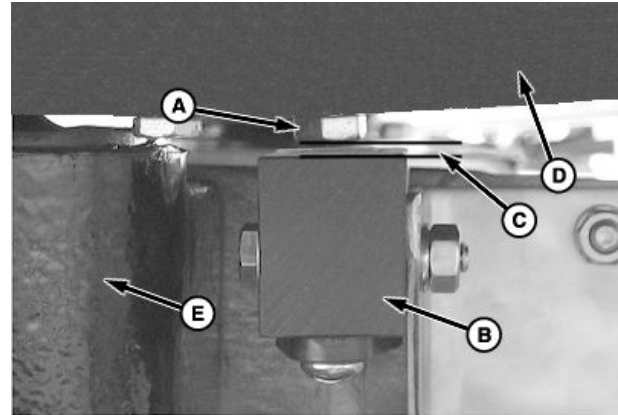
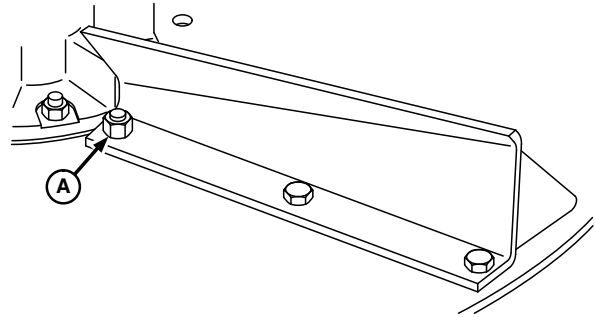
Verify gap (C) between head of screw (A) and spinner speed sensor (B) is to specification.

Specification

Speed Sensor to Head of
Cap Screw—Gap..... 3 mm
(1/8 in.)

If gap is out of specification. Loosen hardware retaining sensor to bracket and adjust as needed.

- | | |
|--------------------------------|-------------------------------|
| A—Inner Fin Mounting Cap Screw | D—Bottom Side of Spinner Disk |
| B—Speed Sensor | E—Spinner Drive Motor |
| C—Gap | |



OUO6435,00007AA -19-31MAY12-1/1

N98574 —UN—21MAY12

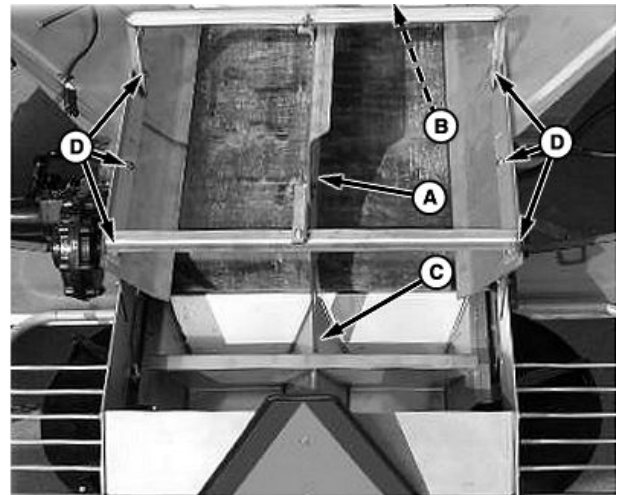
N98571 —UN—21MAY12

Verify Hillside Divider Location

Center hillside divider for equal delivery of product to both sides of the material divider.

Adjust hillside divider so that the middle divider (A) is centered with material divider (C) and feedgate (B). Loosen hardware (D) and adjust if necessary.

- | | |
|--------------------|--------------------|
| A—Hillside Divider | C—Material Divider |
| B—Feedgate | D—Hardware |



OUO6435,0000792 -19-04JUN12-1/1

N98644 —UN—23MAY12

Verify Correct Chain Tension—Belt Over Chain Conveyor Only

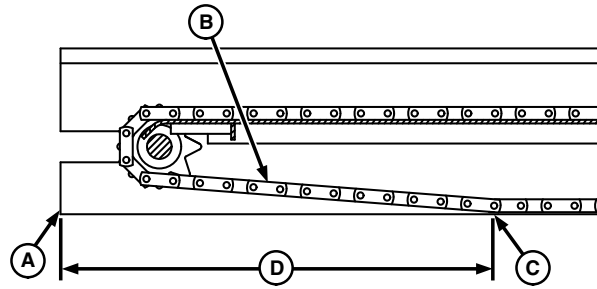
Measure from rear of sill (A) to where conveyor chain (B) contacts with bottom of sill (C).

Verify that measurements on both sides of conveyor are equal and within specified range.

Specification

Conveyor Chain Tension
Dimension—Distance..... 91-102 cm
(36-40 in.)

Adjust at front idler pulley if necessary.



A—Rear Sill Edge
B—Conveyor Chain

C—Contact Point
D—Dimension

CS12167,0000572 -19-21MAR14-1/1

N97639 —UN—27APR12

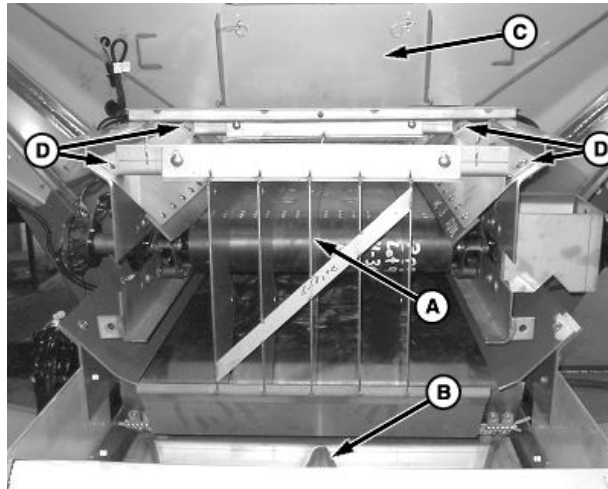
Verify Second Product Bin Hillside Divider Location

Center hillside divider for equal delivery of product to both sides of the material divider.

Adjust hillside divider so that the middle divider (A) is centered with material divider (B) and feedgate (C). Loosen hardware (D) and adjust if necessary.

A—Middle Divider
B—Material Divider

C—Feedgate
D—Hardware



CS12167,000035B -19-25APR13-1/1

N103534 —UN—26APR13

Verify Correct Belt Tension—Straight Belt Conveyor Only

From underneath spreader box, measure vertical distance from bottom of sill (A) to belt (B) in front of the second stake (C).

Measurement should be as specified on both sides of the conveyor.

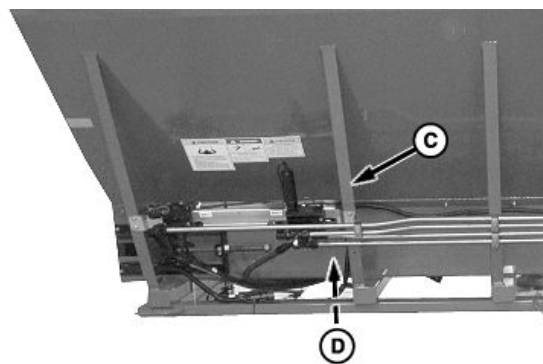
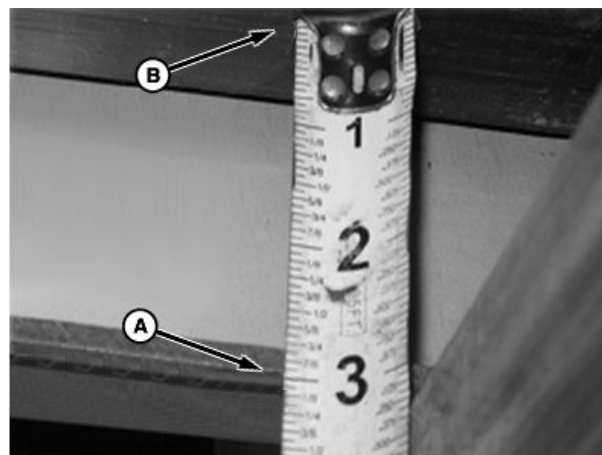
Specification

Belt Tension—Gap..... 7.62 cm
(3 in.)

Adjust at front idler pulley if necessary.

A—Bottom of Sill
B—Conveyor Belt

C—Second Stake
D—Location of Measurement



CS12167,0000571 -19-20MAR14-1/1

N98563 —UN—21MAY12

N101199 —UN—15NOV12

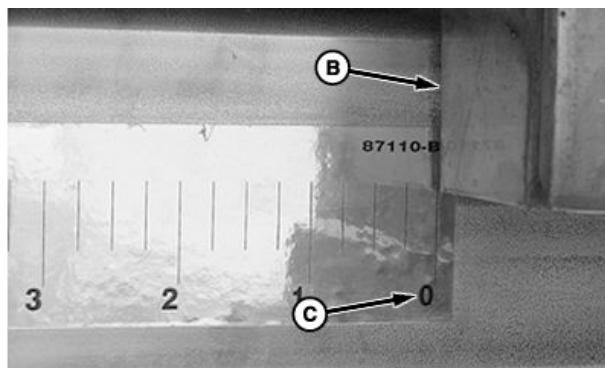
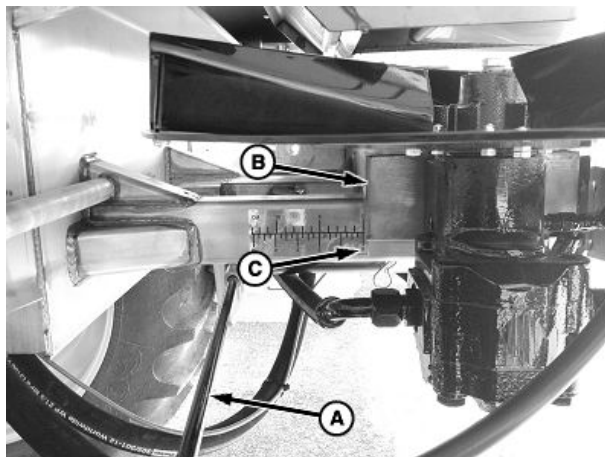
Spinner Initial Adjustment

Run spinners all the way to rear of adjustment using crank (A).

Indicator (B) should line up with "0" on gauge (C).

A—Spinner Crank
B—Indicator

C—Gauge "0"



N98560 —UN—21MAY12

N98561 —UN—21MAY12

CS12167,00002B7 -19-02JAN13-1/1

Operate System

Initial Start-Up

⚠ CAUTION: Stand clear of moving machinery.

NOTE: DO NOT load spreader with material.

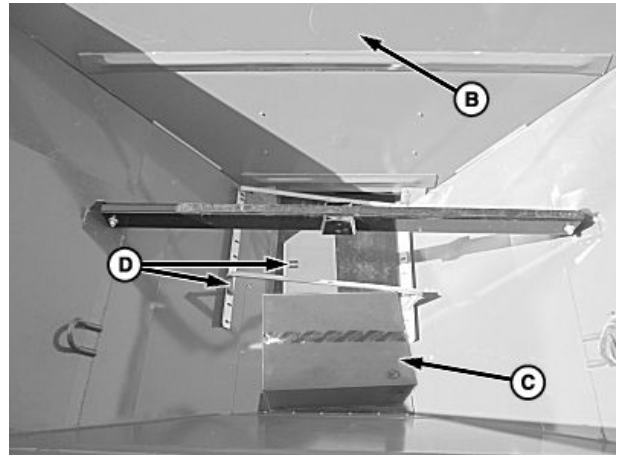
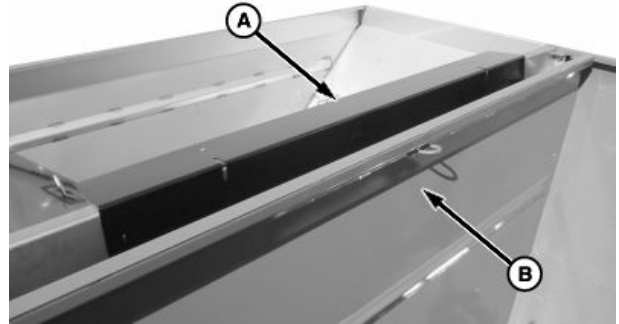
1. Check over entire unit, verify that all fasteners are installed and properly tightened. (See torque value charts in Specifications Section of this manual.)
2. Make sure that no other persons are in vicinity of vehicle or spreader.

IMPORTANT: Make sure that all shipping contents in box have been removed before starting to operate.

3. Verify **all** shipping parts are removed from box.

A—Inverted V
B—Endgate

C—Cardboard Box
D—Hillside Divider



Parts Shipped in Box

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CS12167,00004B6 -19-27MAR14-1/8

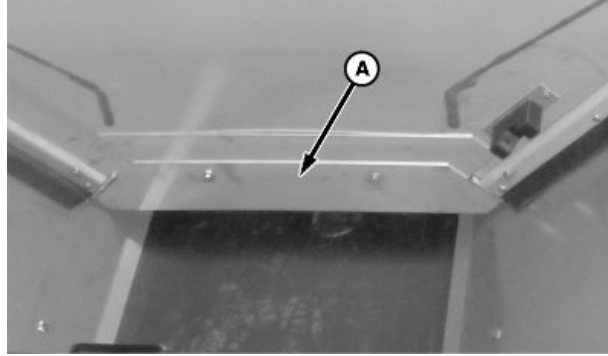
N88646—UN—23MAY12

N88645—UN—23MAY12

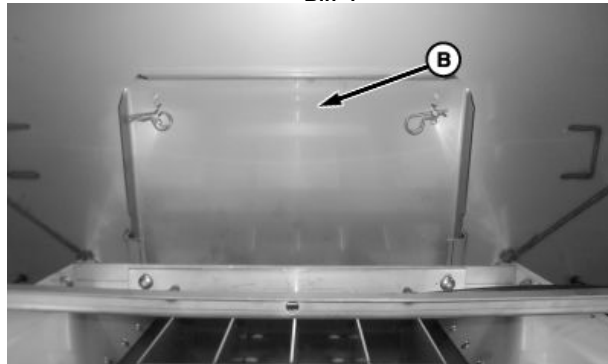
4. Open feedgate(s) until it is completely clear of conveyor.

A—Bin 1 Feedgate

B—Bin 2 Feedgate



Bin 1



Bin 2

N98647 —UN—23MAY12

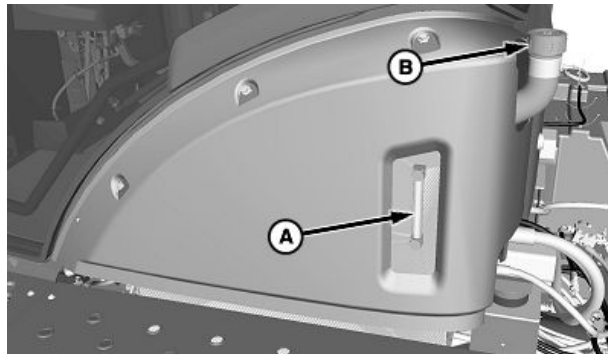
N98648 —UN—23MAY12

CS12167,00004B6 -19-27MAR14-2/8

5. Check oil level (A) in hydraulic reservoir, remove reservoir cap (B) and fill as necessary. Refer to lubricant specification section of this manual or machine operators manual for proper oil.

A—Oil Level

B—Reservoir Cap



N98927 —UN—17SEP12

Continued on next page

CS12167,00004B6 -19-27MAR14-3/8

6. Set engine speed at about 1000 RPM using engine speed switches (A—D). Allow engine to run and circulate oil for several minutes. Increase warm-up time in cold weather.

A—High Idle Switch
B—Increase Engine Speed Switch

C—Decrease Engine Speed Switch
D—Low Idle Switch



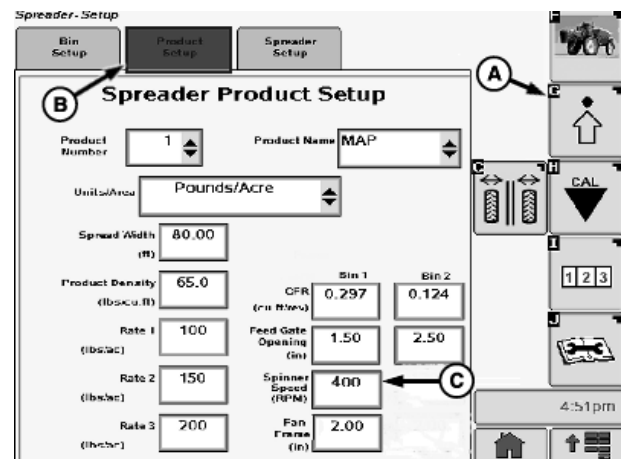
N97494 —UN—17SEP12

CS12167,00004B6 -19-27MAR14-4/8

7. Select the Setup softkey (A) to view the setup menu.
8. Select the Product Setup tab (B). Spreader Product Setup screen appears.
9. Select input box (C) to input target spinner speed. A numeric key pad appears to input the value. Press “Enter” button on keypad to accept the new value.
10. Set spinner speed to 400 RPM.

A—Setup Softkey
B—Product Setup Tab

C—Spinner Speed Input Box



N98166 —UN—06FEB13

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CS12167,00004B6 -19-27MAR14-5/8

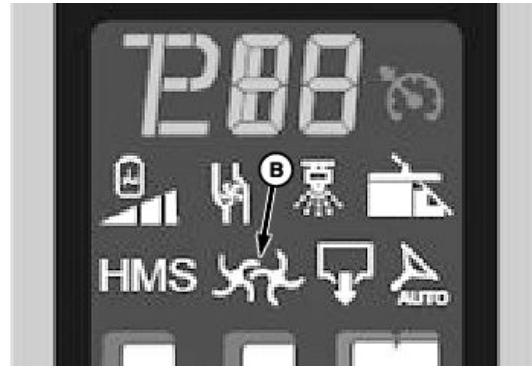
NOTE: *SOLUTION PUMP ENGAGE switch is used as SPINNER ENABLE switch when dry spreader is installed.*

11. Push solution pump switch (A) to enable dry spreader spinners for spreading operations. Push switch again to disable. The dry spreader spinners indicator (B) will illuminate on the primary display unit when switch is engaged.

12. Press spinner enable/disable switch.

A—Solution Pump Switch

B—Dry Spreader Spinner Indicator



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CS12167,00004B6 -19-27MAR14-6/8

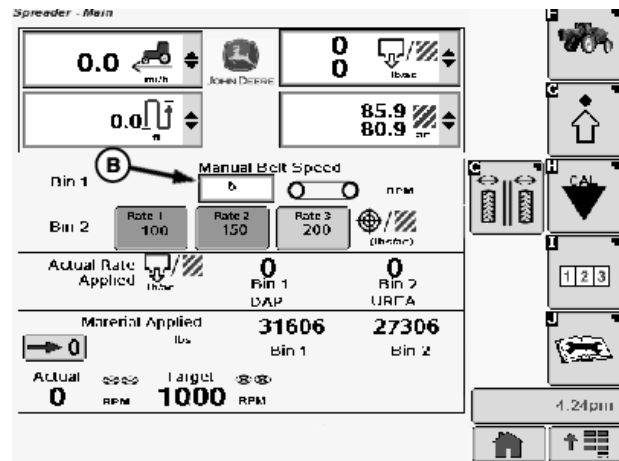
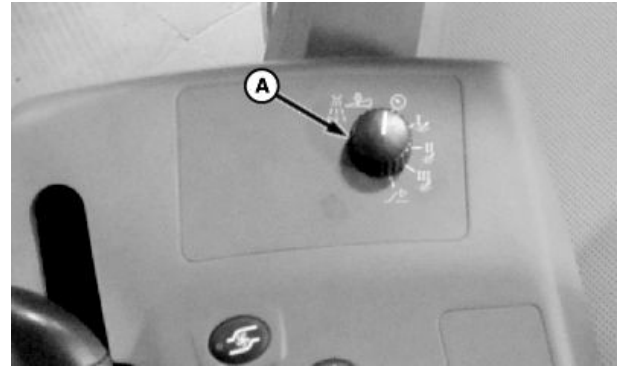
N98755—UN—26SEP12

N101212—UN—17DEC12

13. Turn rate selection switch (A) to manual position.
14. Select input box (B) to input desired conveyor speed.
A numeric key pad appears to input the value. Press "Enter" button on keypad to accept the new value.

A—Rate Selection Switch

B—Manual Speed Input Box



Continued on next page

CS12167,00004B6 -19-27MAR14-7/8

N98782 —UN—24APR13

N98167 —UN—06FEB13

15. Start conveyor by pressing conveyor belt master on-off switch. Run conveyor until it operates smoothly. Master On indicator (B) will illuminate on the primary display unit.

16. Set spinner to 700 RPM.

17. Allow both spinner and conveyor to run. Shut down system.

CAUTION: DO NOT check for leaks with hands while system is operating as high-pressure oil leaks can be dangerous. DO NOT check for leaks adjacent to moving parts while system is operating as there may be danger of entanglement.

18. Check all connections in hydraulic system to make sure that there are no leaks.

19. Check hydraulic reservoir and refill to maintain level at 12 to 25 mm (1/2 to 1 in.) of oil showing in sight tube.

Unit is now ready for field testing.

A—Conveyor Belt Master On-Off Switch

B—Master On Indicator



N63294 —UN—15JUL03

N101213 —UN—17DEC12

CS12167,00004B6 -19-27MAR14-8/8

Field Test

The following procedure is a guide:

1. Field test over any suitable course which allows vehicle to be driven at speeds to be used while spreading.

NOTE: Do not load spreader.

2. Verify machine has been properly serviced and oil reservoir is full.
3. Set spinner to 700 RPM.

CAUTION: Take proper safety precautions when observing conveyor and spinner speed while vehicle is in motion. These may include use of suitable mirrors clamped to permit observation by a safely seated observer, following the spreader in another vehicle at a safe distance, or other suitable means. Do not stand on fenders, in box or on any other part of the spreader as there is danger of falling off the vehicle or into moving parts. Use great care in performing this test.

4. Start engine and allow to run at fast idle long enough to bring hydraulic oil up to operating temperature.



A—Spinner Enable Switch

5. Engage spinner enable switch (A). Spinners should operate at moderate speed and conveyor should not move.
6. Turn rate selection switch to position 1, 2 or 3. (See Rate Select Switch in Operators Station section of machine operators manual.)

CS12167,00002B4 -19-02JAN13-1/2

7. Enable conveyor belt master on/off switch (A).

8. Begin forward travel. Vary speed through out the course.

NOTE: Conveyor should start immediately when vehicle moves and should continue to run at speeds which vary directly with the vehicle speed; the conveyor should speed up as vehicle speed increases and slow down as vehicle speed reduces. Spinner speed should remain constant when engine speed is above minimum operating range.

A—Conveyor Belt Master On/Off Switch



CS12167,00002B4 -19-02JAN13-2/2

N98755 —UN—26SEP12

N63294 —UN—15JUL03

Spreader System Check

Verify that everything is operational for spreading before adding fertilizer to machine.

1. Perform Spreader Check Test with box empty. Manipulate settings to verify that high and low belt speed (Manual) and high and low spinner speed are within specifications.

Specification

Spinner—Speed..... 500 - 1050 +/-20 RPM

Belt —Speed..... 5-50 RPM

Second Product Bin

Belt—Speed..... 5-60 RPM

2. Check all hoses, hydraulic connections, valves and gear cases for leaks. Tighten if necessary.

OUO6435,00007A4 -19-25MAY12-1/1

Setup Spreadstar™ Display

Refer to SprayStar section of the Operator's Manual for detailed instructions on the following set-up procedures:

1. Set Wheel Speed Calibration Number. (See Calibrate Speed Sensors.)

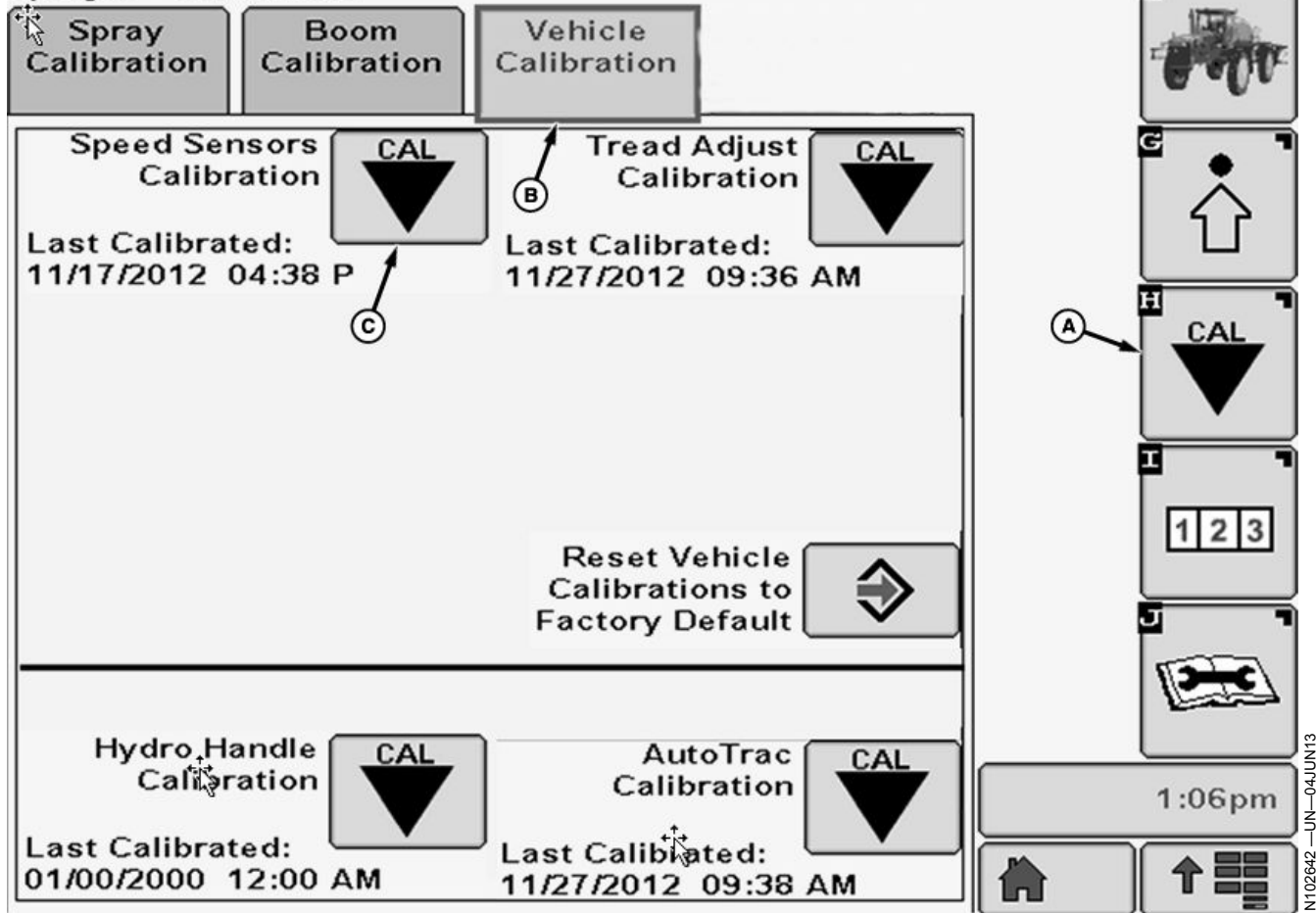
2. Verify or set Time and Date. (See Setting Time and Date).

OUO6092,00009B5 -19-19MAY15-1/1

Calibrate Speed Sensors

1. Fill the spreader half full of material to be spread.
2. Measure a 122 m (400 ft) course with tape measure on flat terrain that is most typical of field conditions (loose, medium, hard-packed). Do not use end rows due to possible varying ground conditions that can affect calibration.
3. Mark both beginning and end of course with markers that are visible from cab.
4. Allow enough room at each end of course for sprayer to travel entire course without speeding up or slowing down.

Sprayer - Calibration



A—Calibration Softkey

B—Vehicle Calibration Tab

C—Calibration Icon

5. Select the Calibration softkey (A) to view the setup menu.
6. Select the Vehicle Calibration tab (B).
7. Select Calibration icon (C) next to Speed Sensors Calibration.

Continued on next page

CS12167,000053D -19-05MAR14-1/5

8. Select desired calibration method by pressing calibrate by distance button or calibrate by GPS signal button (A or B).

A—Calibrate by Distance Button

B—Calibrate by GPS Signal Button

Speed Sensors Calibration

Select Calibration Method

Radar and Wheel Speed by Distance

(A)

Radar and Wheel Speed by GPS Signal

(B)

Speed Source	Status	Speed (mph)
Radar	<input type="checkbox"/>	0.0
Wheel Speed	<input type="checkbox"/>	0.0
GPS	<input type="checkbox"/>	0.0

///

Edit Valve Calibrations

(C)

N103390—UN—16MAY13

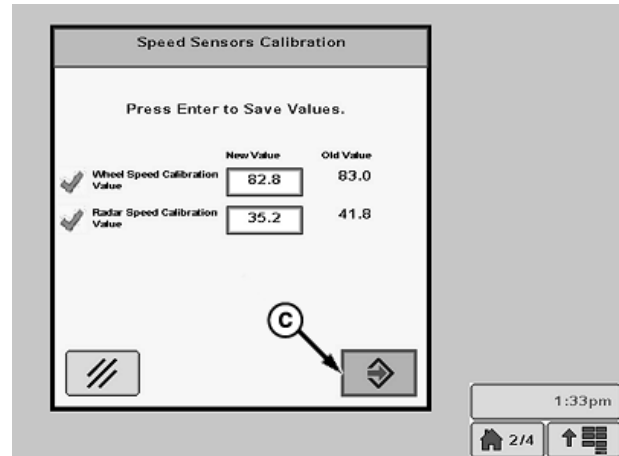
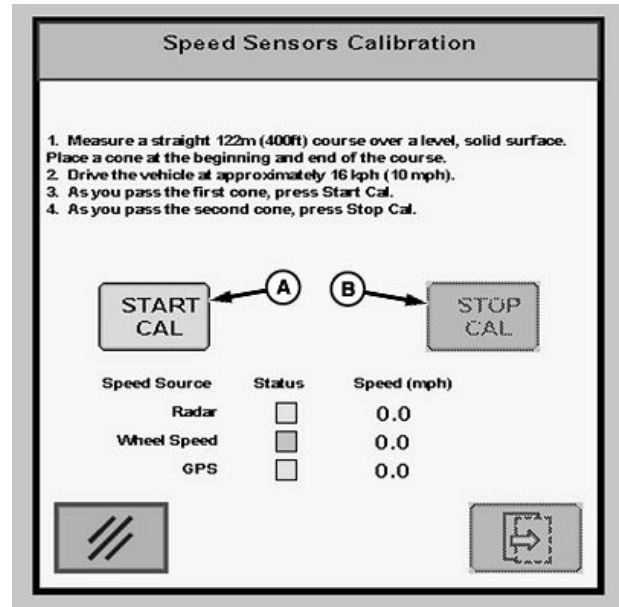
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CS12167,000053D -19-05MAR14-2/5

9. To calibrate by distance:
 - a. Follow directions on screen. Press Start Cal button (A) to begin calibration.
 - b. Press Stop Cal button (B) to complete calibration.
 - c. Press Enter button (C) to save calibration values.

A—Start Cal Button
B—Stop Cal Button

C—Enter Button



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CS12167,000053D -19-05MAR14-3/5

N103391—UN—24APR13

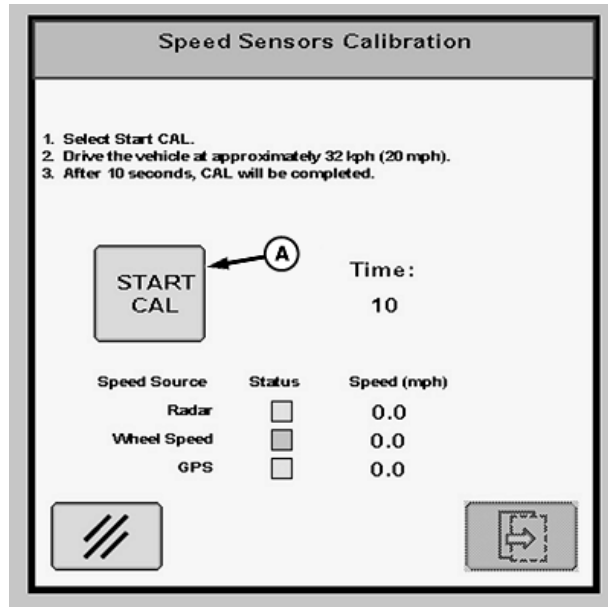
N103393—UN—08MAY13

10. To calibrate by GPS signal:

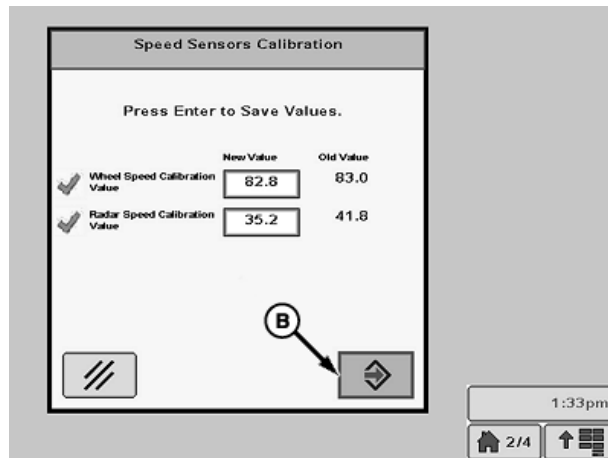
- Follow instructions on screen. Press Start Cal button (A) to begin calibration.
- Press Enter button to save calibration values.

A—Start Cal Button

B—Enter Button



N103392—UN—24APR13



N103395—UN—08MAY13

CS12167,000053D -19-05MAR14-4/5

11. To edit calibration values:

- Select input box (A or B).
- Input new value using pop-up keypad.

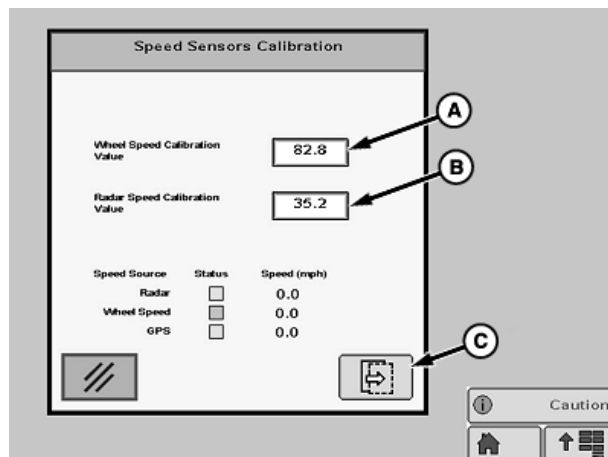
NOTE: Wheel Speed Calibration Value range is 50 - 94.

Radar Speed Calibration Value range is 28 - 42.

- Select Enter button (C) to save new values.

A—Input Box
B—Input Box

C—Enter Button

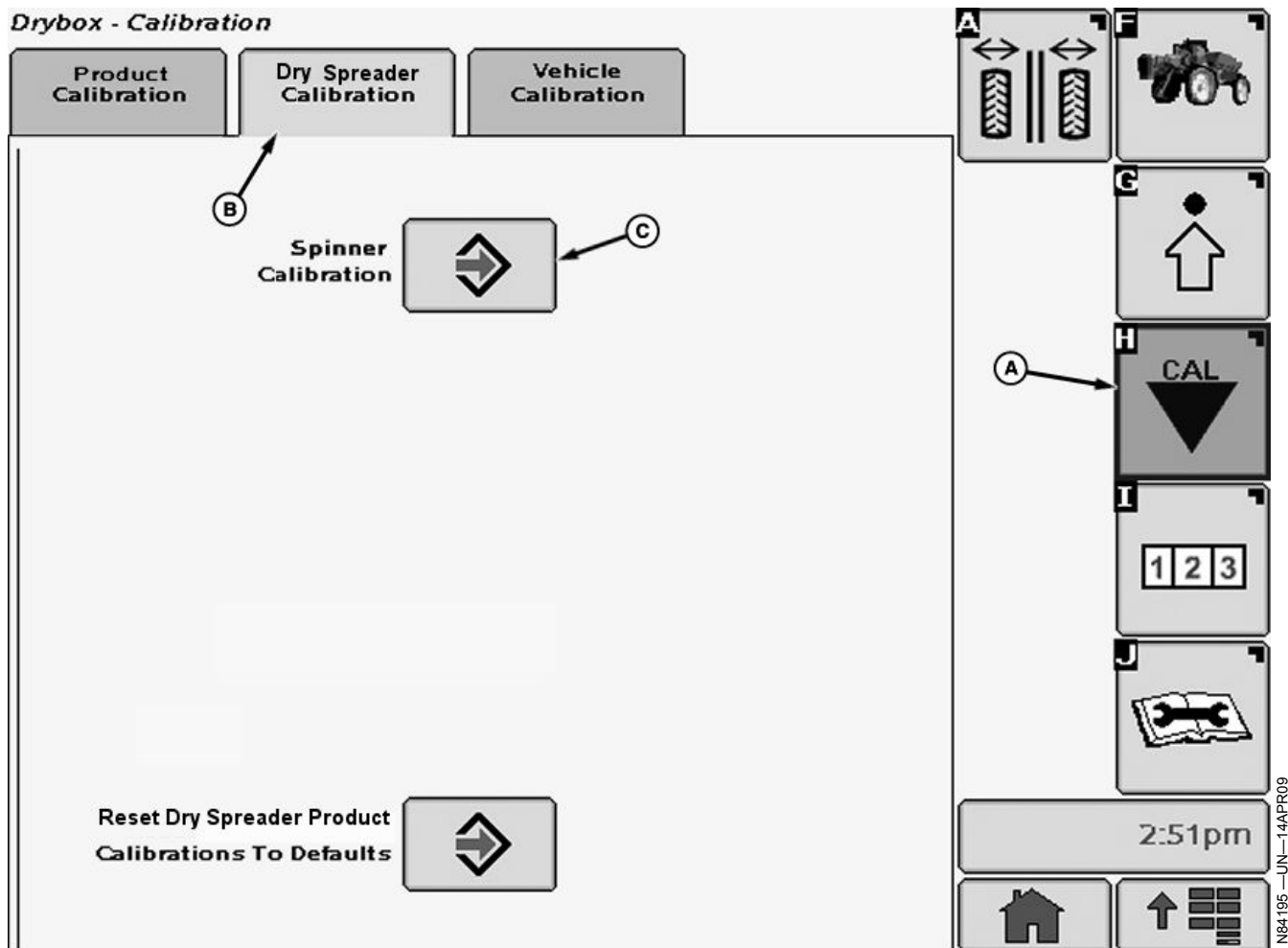


N103851—UN—21MAY13

CS12167,000053D -19-05MAR14-5/5

Spinner Calibration

Drybox - Calibration



A—Calibration Softkey

B—Dry Spreader Calibration Tab

C—Enter Button

CAUTION: Spinners will reach maximum speed!
Calibrate in an open, safe area.

NOTE: Must be performed at normal operating temperature 140° F (60° C).

1. Park machine in an open, safe area.

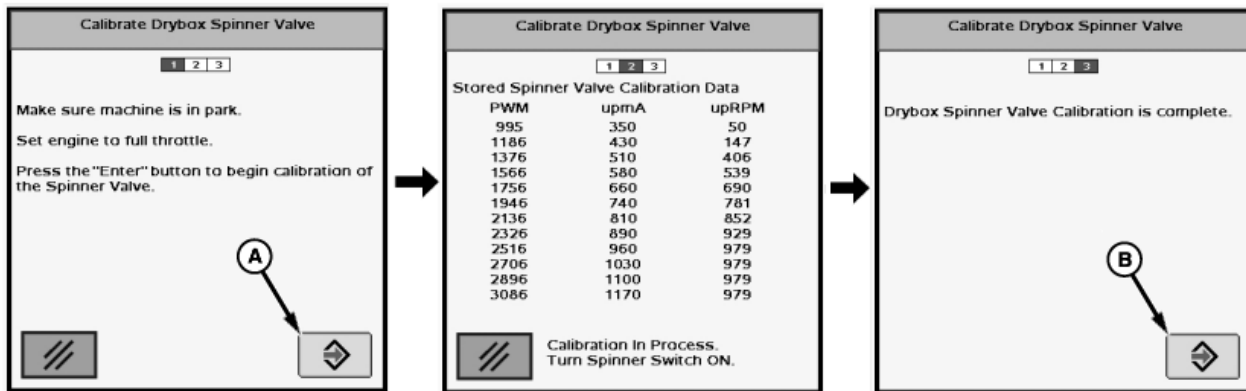
2. Select the Calibration softkey (A).

3. Select the Dry Spreader Calibration tab (B).

4. Select the Enter Button (C) next to Spinner Calibration to go to the calibration procedure.

Continued on next page

OUO6092,0000573 -19-07APR11-1/2



N78776—UN—08NOV07

A—Enter Button

B—Enter Button

NOTE: Solution PUMP ENGAGE switch is used as SPINNER ENABLE switch when dry spreader is installed. MASTER ON switch on multifunction control handle is used for CONVEYOR BELT START switch.

If the spinners are running prior to entering calibration mode, the operator will be notified to wait until spinners stop to start calibration.

5. Follow instructions on first screen. When finished select the button (A) to start the calibration procedure.

Turn on the spinners to begin calibration procedure by enabling the pump engage switch. Old calibration numbers will be displayed. Calibration may take several minutes. New calibration numbers will replace old numbers.

6. Shut off spinner when advised to do so.
7. "Drybox Spinner Valve Calibration is complete" will be displayed. Press enter button (B) to return to Drybox Calibration tab.

OUO6092,0000573 -19-07APR11-2/2

General Operation Process

1. Verify machine has been properly serviced and is in good operating condition. Field test unit prior to first use, prior to each spreading season's use, and following overhaul or repair work. Verify that all components and systems are functioning properly. (See Field Testing section.)
2. **With SGN Kit:** Perform size grading and hardness test on material to be spread to obtain spinner speed recommendations. (See Size Grading and Hardness Testing section in this manual.)

Without SGN Kit: Start spread pattern testing at the following starting points and modify spinner speed accordingly.

- **Fertilizer** 600-800 rpm, 18-32 m (59-104 ft.) Spread Width
- **Lime** 600-650 rpm, 18 m (59 ft.) Spread Width

NOTE: Spinner speed will need to be changed when changing from different materials.

IMPORTANT: Do not fill box with products not recommended for your box and chassis combination.

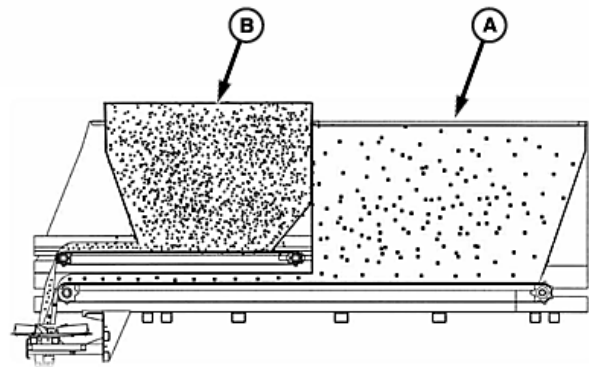
The spreading of lime is not permissible when using the DN456 installed on a R4030 or R4038 chassis or when using the DN485.

Do not fill above top edge of box. Overfilling box can lead to belt slippage or chain drive failure.

NOTE: If machine is equipped with second product bin. Verify feedgate height is at desired setting prior to filling Bin 1. (See Calculate Feedgate Opening in Spreadstar™ section.)

3. Fill bin 1 (A) and bin 2 (B) (if equipped) with material to be spread.
4. Drive to location where spreading is to be done.
5. Setup product to be spread in Spreadstar™. (See Product Setup in Spreadstar™ section of this manual.)
6. Adjust spinner to give spread pattern desired. (See Spread Pattern section in this manual.)

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A—Top Edge Bin 1

B—Top Edge Bin 2

7. Set rear feedgate opening to obtain yield desired. Measure actual material depth. Turn feedgate handle to adjust feedgate opening.

CAUTION: Stay out of the spreader while conveyor is operating. Turn off all power, set vehicle brakes, lock engine starting switch and remove keys before getting in the spreader. Tag all controls to prohibit operation. Tags should be placed, and later removed, only by the person working in the spreader.

8. Select desired rate using rate selection switch.
9. Engage spinner enable switch and conveyor belt master on/off switch.

CAUTION: Drive only at speeds which permit good control of vehicle.

NOTE: Maximum spreading speed is 40 km/h (25 mph).

10. Drive at speeds that allow engine to run at proper rpm.

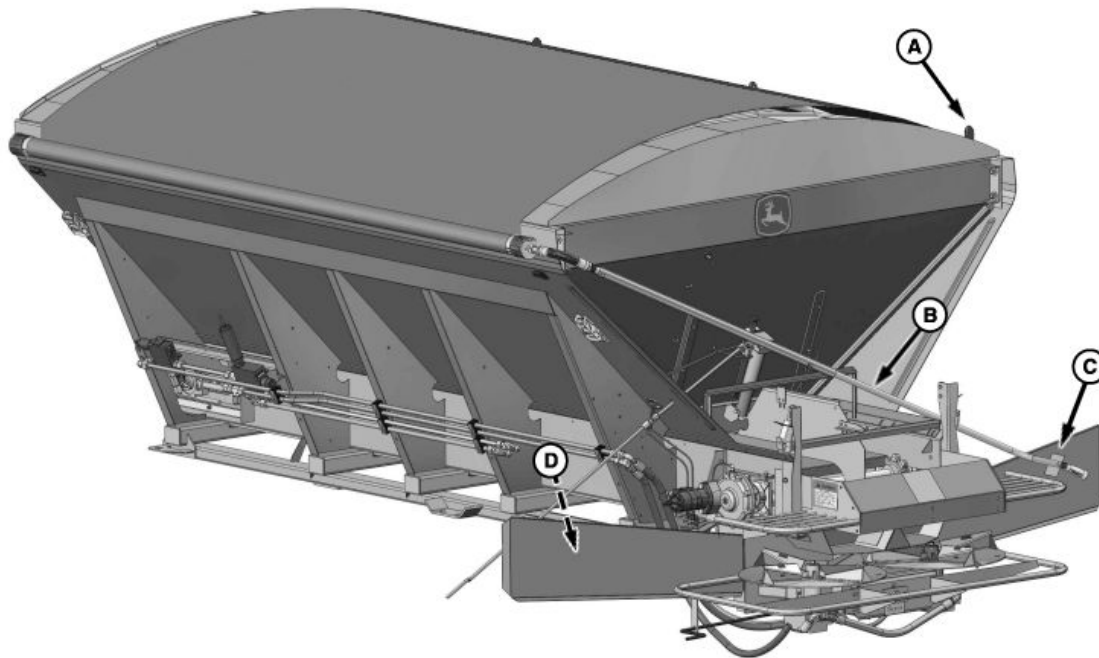
NOTE: CHANGE HYDRAULIC OIL FILTER AFTER FIRST WEEK (OR NOT MORE THAN 50 HOURS) OF OPERATION ON A UNIT.

N98650 —UN—23MAY12

OUC6092,00009B6 -19-19MAY15-1/1

Operate Spreader Box Tarp System (If Equipped)

Open Spreader Box Tarp (If Equipped)



A—Tarp Stop (3 used)
B—Crank Arm

C—Crank Arm Retainer Assembly D—Crank Arm Retainer Assembly

IMPORTANT: Do not adjust ratchets while opening or closing tarp. Do not load or unload bins while tarp is closed. Do not stand or walk on tarp or end caps. Do not drive machine at highway speeds unless tarp is fully open or fully closed (fully closed is recommended.)

1. Remove crank arm (B) from crank arm retainer assembly (C) using both hands.

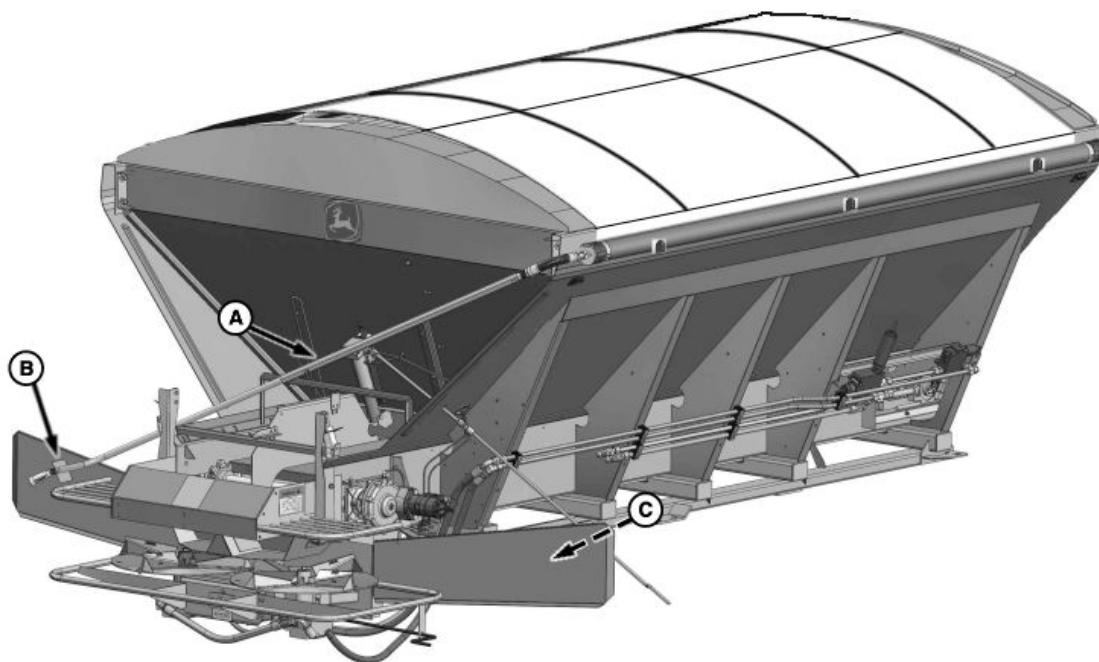
2. Turn crank arm in clockwise direction to roll tarp open.
3. Continue turning until rolled tarp rests against tarp stops (A).
4. Return crank arm to opposite side crank arm retainer assembly (D) and secure.

CAUTION: Hold crank arm firmly with both hands while operating. Uncontrolled crank arm spin may result in injury.

N117365—UN—21APR15

TB90758,0001A0E -19-01MAY15-1/1

Close Spreader Box Tarp (If Equipped)



A—Crank Arm
B—Crank Arm Retainer Assembly
C—Crank Arm Retainer Assembly

IMPORTANT: Do not adjust ratchets while opening or closing tarp. Do not load or unload bins while tarp is closed. Do not stand or walk on tarp or end caps. Do not drive machine at highway speeds unless tarp is fully open or closed (fully closed is recommended.)

1. Remove crank arm (A) from crank arm retainer assembly (B) using both hands.

CAUTION: Hold crank firmly with both hands while operating. Uncontrolled crank arm spin may result in injury.

2. Turn crank in counterclockwise direction to roll tarp to covered position.
3. Continue rolling until spreader box is covered.
4. Secure crank arm in crank arm retainer assembly (C).

TB90758,0001A10 -19-22APR15-1/1

N117361 —UN—22APR15

Tarp Cable Tension Adjustment (If Equipped)

IMPORTANT: Do not adjust ratchets while operating tarping system.

1. Tighten ratchet (B) to remove slack and apply tension to tarp.

NOTE: Ratchet must be in locked position to hold tension. Do not release tension to operate system.

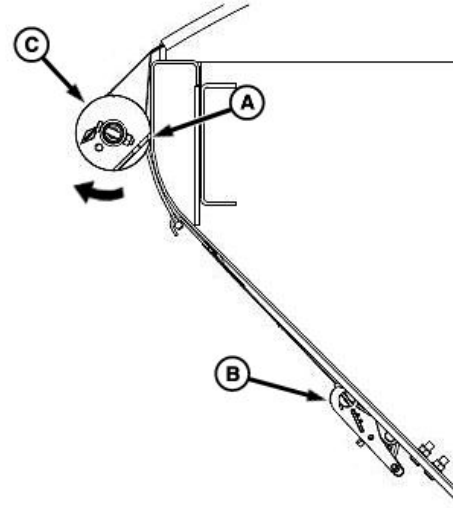
2. Tighten ratchet so spool (C) rotates channel (A) 90° from original position.

NOTE: Procedure is the same for front and rear spool.

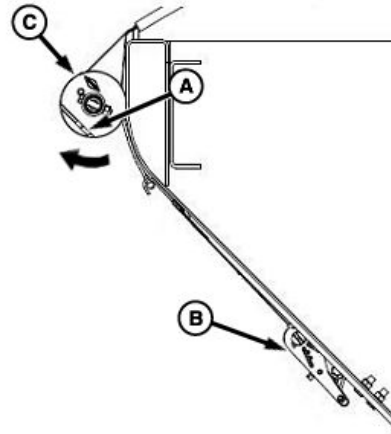
3. Open and close tarp five or six times to allow cable to seat in spool grooves and tarp to pull snug.
4. Check position of channel and tighten ratchet as necessary to rotate channel 90° from original position.

A—Channel (2 used)
B—Ratchet (2 used)

C—Spool (2 used)



Original Channel Position



Final Channel Position

N117362 —UN—14APR15

N117363 —UN—14APR15

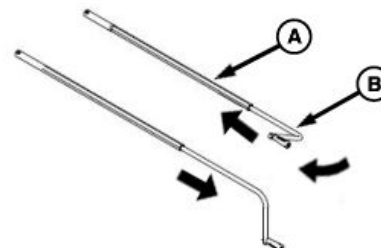
TB90758,0001A03 -19-14APR15-1/1

Adjust Crank Handle Angle (If Equipped)

1. Slide crank handle (B) into hexagonal portion of crank arm (A) until it stops.
2. Rotate handle to desired angle.
3. Pull crank handle out to desired length.

A—Crank Handle

B—Crank Arm



N117364 —UN—15APR15

TB90758,0001A02 -19-15APR15-1/1

Size Grading and Hardness Test

Introduction

The following information will guide you through using the Size Grade Number (SGN) and Hardness Test Kit. Refer to operator's manual for details on unit safety, operation and maintenance.

This SGN kit is available through parts at your John Deere dealer.

CAUTION: Use great caution while working around the spreader. Contact with spinners and other moving parts is very dangerous. Do not adjust while machinery is moving, wear eye

protection and avoid discharge from spinners. Do not ride on moving spreader.

It is highly recommended to do a Hardness Test and SGN Scale Test prior to each season and before using a new product. Testing will define granular characteristics and help determine proper spinner settings for optimal product spread.

Conduct a Spread Pattern test to check settings based on test results. Refer to Spreader Installation Instructions and Spread Pattern Manual for installation and adjustment instructions.

CS12167,0000046 -19-22MAY12-1/1

Crush Strength

Crushing strength is the minimum pressure needed to crush individual particles. Determining the crushing strength, or hardness, will help determine handling and storage requirements of a chosen granular product.¹

Measure crushing strength by applying pressure to individual granules. A simple finger test can be used in the field.

- Granule crushed between thumb and forefinger is "soft".
- Granule crushed between forefinger and a hard surface is "medium hard".
- Granule not crushed between forefinger and hard surface is "hard".

Fertilizer Type ^a	Grade	Crush Strength
Prilled Urea	46-0-0	0.8-1.2
Granule Urea	46-0-0	1.5-3.5
Granule Ammonium Sulfate	21-0-0	1.5-2.5
Prilled Ammonium Nitrate	34-0-0	1.2-1.7
Granule Diammonium Phosphate	18-46-0	3.0-5.0
Granule Monoammonium Phosphate	11-55-0	2.0-3.0
Granule Triple Superphosphate	0-46-0	4.5-8.0
Prilled Potassium Nitrate	13-0-44	1.5-2.0
Granule Potassium Chloride	0-0-60	3.0-5.0
Granule Potassium Sulfate	0-0-50	3.0-4.0

Crushing Strengths of Typical Fertilizers

^aHignett, *Fertilizer Manual*, p.481, table18.6.

Any granule with a less than three (<3) crush strength should not be broadcast with spinner speeds over 700

rpm. Verify granules are not pulverized before increasing speed.

¹T.P. Hignett. *Fertilizer Manual*. (Netherlands: Kluwer Academic Publications and Springer Science+Business, 1998), p. 478-479 with kind permission from Springe Science+Business Media B.V.

CS12167,00002B3 -19-02MAY13-1/1

Hardness Test

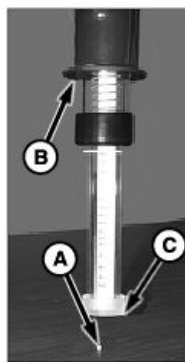
NOTE: Only use granules of equal size when comparing data. Crushing strength increases with particle size.

1. Place individual granule (A) on hard surface.
2. Place hardness tester (B) over granule, open end (C) flush with surface.

A—Granule

B—Hardness Tester

C—Hardness Tester, Open End

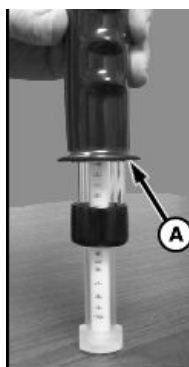


N97279 —UN—13APR12

CS12167,0000048 -19-07MAR12-1/3

3. With one hand on handle, press tester (A) down until granule breaks.

A—Hardness Tester



N97277 —UN—13APR12

CS12167,0000048 -19-07MAR12-2/3

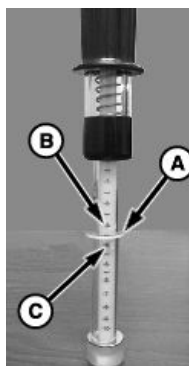
4. Release handle and note where marker (A) rests on number scale. This is the granule crushing strength.

For example, the marker is between 3 (B) and 4 (C) on the scale. Thus, the crushing strength is 3.5.

A—Marker

B—Indicator Mark "3"

C—Indicator Mark "4"



N97278 —UN—13APR12

CS12167,0000048 -19-07MAR12-3/3

Size Grade Number

Size Grade Number (SGN) is the measurement of granule size in millimeters. For machines with spinner height of 182 cm (72 in.) from ground, spread widths increase 3.5-4 m (10-15 ft.) with a 100 rpm increase in spinner speed.

A product's SGN will affect spread width. Knowing the SGN will help determine correct spinner speed for a chosen product.

RPM	Spread Width m (ft.)
600	21-22 (72)
700	24-25 (82)
800	27-28 (92)
900	30-32 (105)

Spinner Height 182 cm (72 in.)

Granule Mesh	Spread Width m (ft.)
140-200	21 (70)
220-300	24 (80)
320-400	27 (90)

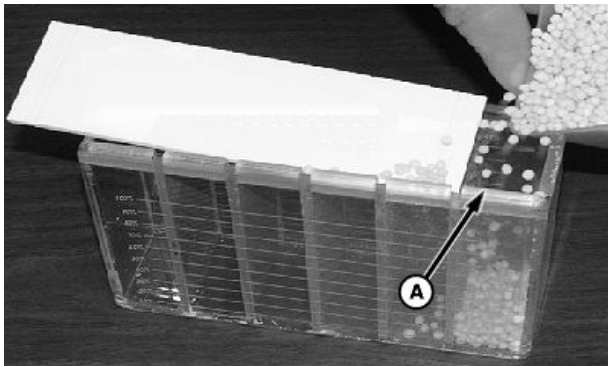
SGN Starting Points

CS12167,0000049 -19-22MAY12-1/1

Size Grade Number Scale

1. Place scale on flat surface so lid slides right.
2. Open lid and fill far right compartment (A) with selected product until full.

A—Compartment



N97280 —UN—26APR12

CS12167,000004A -19-01JUN12-1/4

3. Close lid (A) completely.

A—Lid



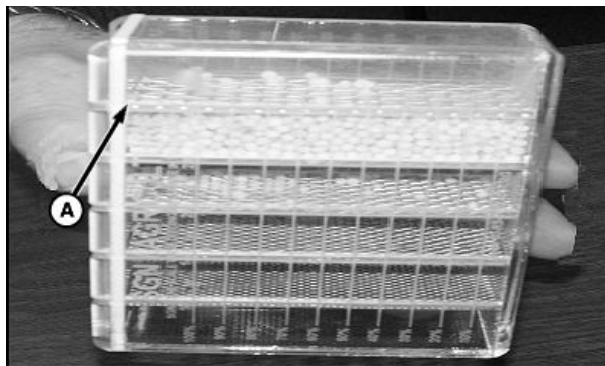
N97281 —UN—26APR12

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CS12167,000004A -19-01JUN12-2/4

4. Rotate scale so compartment with sample (A) is on top.
5. Shake scale up and down until material finishes dispersing, usually less than two minutes.
6. Turn scale to starting position.

A—Filled Compartment



N97282—UN—13APR12

CS12167,000004A -19-01JUN12-3/4

7. View level of material in each compartment and determine SGN level based on markings.

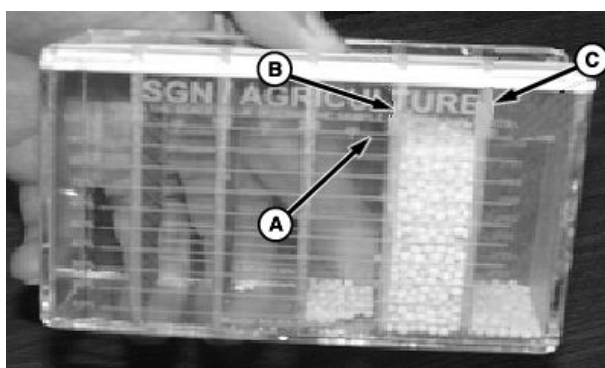
For example, 100 percent of the sample (A) shown is between 280 (B) and 400 (C). Thus, SGN is approximately 340.

A hardness of 2.5 and an SGN of 340 for Urea and 680 spinner speed will broadcast up to 90'

A hardness of 2.5 and an SGN of 240 for Urea and 680 spinner speed will broadcast up to 80'

A hardness of 3.5 and an SGN of 340 for Potash or Diammonium Phosphate and 680 spinner speed will broadcast up to 70'

NOTE: Values listed are to be used as a guide only. Spread pattern results are affected by physical properties such as bulk density, material density, particle size, particle shape, hardness, coefficient of friction, etc. Testing must be performed to verify spread pattern for each material.



N97283—UN—13APR12

A—100 Percent Marking
B—280 Mesh Marking

C—400 Mesh Marking

CS12167,000004A -19-01JUN12-4/4

Spread Pattern

Spread Pattern Adjustment



DRY NUTRIENT APPLICATOR

Spread Pattern Testing

It is recommended that a spread pattern test be performed for all products and applications rates you handle. Once initial testing is completed, testing should be repeated at the beginning of every season, or any time repair work is performed on any component affecting spread patterns. Please refer to your "How To Check Your Spread Pattern" manual for details on settings, adjustments and maintenance.

Starting Spinner Positions

Spinner Indicator Position		
Material (Weight in Pounds/Kilograms)	Floater in (cm)	Post Emergent in (cm)
LIME-HEAVY (100lbs/45kg) Note: Remove divider back plate.	0 (0)	0 (0)
LIME -LIGHT (80-90lbs/36-41kg) Note: Remove divider back plate.	1 (2.5)	1 (2.5)
FERTILIZER (65lbs/29kg)	3.5 (8.9)	3.75 (9.5)
UREA(48lbs/22kg)	4 (10.2)	4 (10.2)
MULTAPPLIERS/MIXED PRODUCT (65lbs/29kg)	3.75 (9.5)	3.75 (9.5)

Spinner Speed:	Floater	Post Emergent
Ag Lime	600 RPM	600 RPM
Fertilizer	800 RPM	700 RPM

NOTE: These charts are to be used as a reference only to begin testing. In general, raising the spinner speed 100 RPM and moving the spinner .25 (.64cm) forward (per scale markings) provides an additional 10 feet (3.5m) of spread swath.

Ideal Pattern



Ideal Pattern Overlap

Once you obtain a desirable pattern, optimum-driving center can be determined. To determine optimum driving centers (effective swath width), locate the points on both the left and right side of the pattern where the amount of material applied is half the amount at the center of the pattern. The distance between these two points represents the driving centers to be used.

309370-B



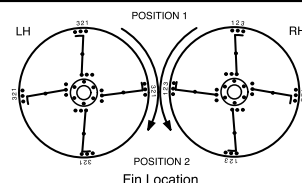
DRY NUTRIENT APPLICATOR

Troubleshooting Patterns

Pattern	Problems	Recommended Adjustments.
	Heavy directly behind the vehicle	<ol style="list-style-type: none"> 1. Check spinner blade quality 2. Move the spinner forward. (toward the conveyor). 3. Decrease spinner RPM. 4. Move one or two spinner blades to a lower numbered hole.
	Light directly behind the vehicle	<ol style="list-style-type: none"> 1. Check spinner blade quality 2. Move the spinner rearward. (away from conveyor). 3. Increase spinner RPM. 4. Move one or two spinner blades to a higher numbered hole.
	LIGHT OUTSIDE VEHICLE TIRE TRACKS	<ol style="list-style-type: none"> 1. Check spinner blade quality 2. Decrease spinner RPM. 3. Move all blades to #2 position.
	Pattern off center	<ol style="list-style-type: none"> 1. Check to see feedgate is level and free of caked material. 2. Make sure hillside divider is mounted squarely and centered. 3. Check to be sure spinner assembly is mounted squarely and centered. 4. Make sure material divider is mounted squarely and centered. 5. Testing should be done parallel the wind.

It is recommended that only one adjustment be made between test runs.

Spinner Blade adjustments



309370-B

Quick Reference Card

CAUTION: Use great caution while working around the spreader. Contact with spinners and other moving parts is very dangerous. Do not adjust while machinery is moving, wear eye protection and avoid discharge from spinners. Do not ride on moving spreader.

NOTE: Spinner assembly has NOT been adjusted at the factory. Before spreading material, spread pattern tests must be conducted to properly adjust the spread pattern. A Spread Pattern Test Kit is available for this purpose. THE MANUFACTURER OF THIS SPREADER WILL NOT BE LIABLE FOR MISAPPLIED MATERIAL DUE TO AN IMPROPERLY ADJUSTED SPREADER.

A quick reference card is provided with your machine for testing spread pattern, and adjusting spreader to achieve proper pattern. This card is only for quick reference. Refer to this manual for detailed information.

It is recommended that spread pattern tests be conducted prior to each spreading season, after any spreader maintenance, and periodically during the spreading

season. Spread pattern tests must be performed for each product and application rate.

Spread pattern is affected by many factors. Among the more significant of these are:

1. Spinner speed.
2. Material density
3. Material granule size.
4. Material flow characteristics.
5. Rate of delivery of material.
6. Point of delivery of material on spinner discs.
7. Balance between deliveries to both spinner discs.
8. Angle of the distributor fins on the spinner discs.
9. Cleanliness of the spinner fins and discs.
10. Level of spreader.
11. Wind and humidity.
12. Spacing of swaths.
13. Wear on spinner fins.

Since many of these factors will vary for each job, trial and experience must be used to determine the adjustments which must be made to obtain the spread width and spread pattern desired. The following instructions are given to cover the adjustments available and the effect that each will have on the spread pattern.

CS12167,0000272 -19-13DEC12-1/1

Spinners

NOTE: Remove paint from spinner discs and fins before performing spread pattern test.

Spinner discs and fins must be kept clean and polished. Even a small buildup on a spinner fin can significantly affect the spread pattern.

Rusty, rough, bent or worn fins (A) will produce poor spread patterns.

Spinner speed is adjustable from approximately 400 to 900 rpm. This is accomplished by changing the settings in Spreadstar™. (See Spreader Product Setup in Spreadstar™ section in this manual.) Proper spinner speed adjustment is very important in obtaining good spread patterns. The best spinner speed to use will depend entirely on the material being spread, and must be determined by testing.

A major factor of maximum pattern width is particle size. This may vary anywhere from 7.6 m (25 ft.) for finely powdered material up to 37 m (120 ft.) or more for extremely large fertilizer pellets.

For every material there is a critical spinner speed. In other words, there is a speed which will result in the maximum width obtainable. Going beyond this speed will not increase spread width, but will result in poor patterns.

Too high a spinner speed could result in a heavy deposit behind the spreader due to break-down of material. This upper speed limit will be quite low for finely powdered material, and can be quite high for extremely coarse materials. In general, this critical speed will fall somewhere

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A—Worn Fins

between 600 and 800 rpm for ordinary materials. One way to adjust spinner speed is to watch the material leaving the spinners. At slow speed the material leaves the fins in narrow bands. At medium speed it forms wide bands in the air. At somewhat higher speed, the bands close into a uniform blur. Normally, the proper spinner speed is slightly higher than that when the bands close to a blur. It is recommended that a spread pattern test be performed for each product and application rate you handle. Once initial testing is completed, testing should be repeated at the beginning of every season, or any time maintenance is performed on any component affecting spread patterns.

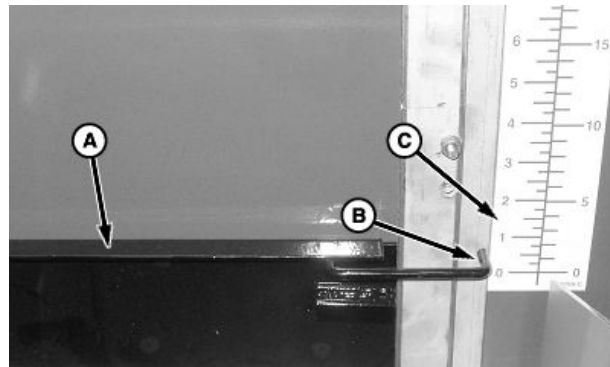
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Spreader Preparation

The spreader to be tested shall be in good mechanical condition and properly adjusted according to this manual.

1. All damaged and worn parts must be replaced. Spinner discs and blades must be free of any material buildup, rust, or paint.
2. Fill the hopper with material to be spread.
3. Determine feedgate opening needed for desired rate per acre.
4. Open feedgate (A) to desired setting and note position of pointer (B) on gauge (C).



A—Feedgate
B—Pointer

C—Gauge

N98641—UN—23MAY12

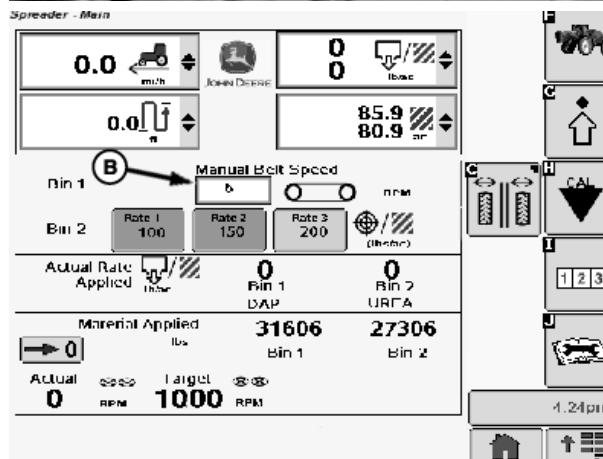
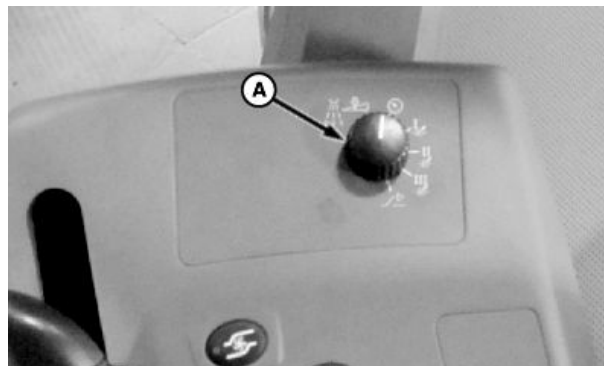
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CS12167,00004AC -19-27MAR14-1/6

5. Turn rate selection switch (A) to manual position.
6. Select input box (B) and set conveyor speed to 10. A numeric key pad appears to input the value. Press "Enter" button on keypad to accept new value.

A—Rate Selection Switch

B—Manual Speed Input Box



CS12167,00004AC -19-27MAR14-2/6

7. Run material out to the end of conveyor using master on/off control (A). Shut down system.

A—Conveyor Belt Master On/Off Switch



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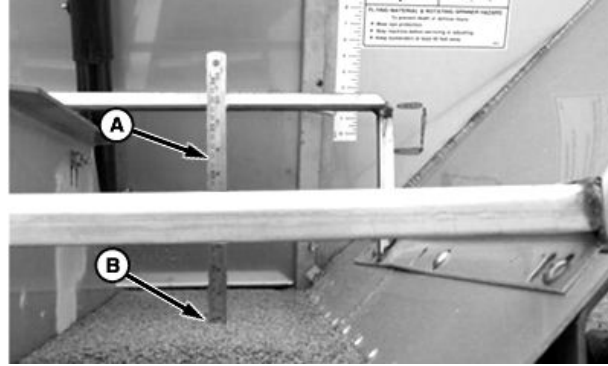
CS12167,00004AC -19-27MAR14-3/6

8. Make sure feedgate is level and the indicator reflects the actual gate opening measured by standing a tape measure (A) vertically in the material (B).

NOTE: Do not match slope of endgate when making this measurement.

A—Tape Measure

B—Material



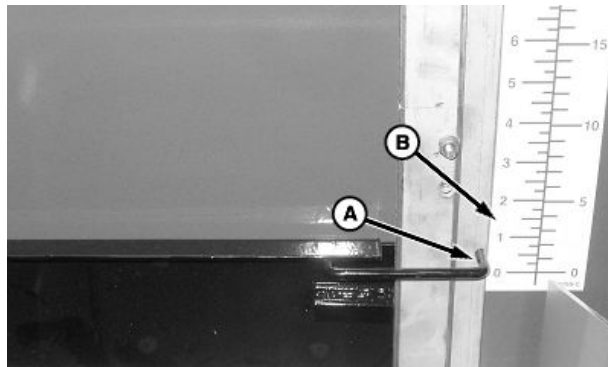
N98642—UN—23MAY12

CS12167,00004AC -19-27MAR14-4/6

9. Adjust feedgate depth indicator (A) on scale (B) as needed to match actual material depth.

A—Depth Indicator

B—Scale



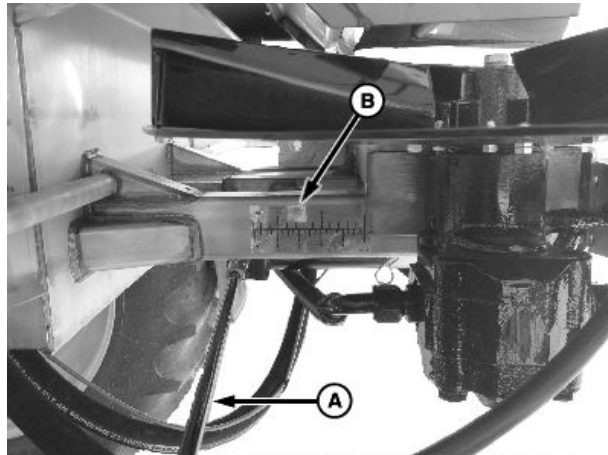
N98686—UN—30MAY12

CS12167,00004AC -19-27MAR14-5/6

10. Adjust the spinner assembly by turning the crank (A). To begin testing, position the spinner according to the chart below.

NOTE: This chart is to be used as a reference only to begin testing.

MATERIAL kg/cu m (lbs/cu ft.)	SPINNER POSITION (SEE DECAL—B) cm (in.)
LIME—LIGHT 1281 (80)	2.5 (1)
<i>NOTE: Remove deflector plate.</i>	
LIME—HEAVY 1601 (100)	0 (0)
<i>NOTE: Remove deflector plate.</i>	
FERTILIZER 1040 (65)	9.5 (3.75)
UREA 768 (48)	10.2 (4)
MIXED PRODUCT, Second Product Bin 1040 (65)	9.5 (3.75)



N98674—UN—23MAY12

A—Adjustment Crank

B—Decal

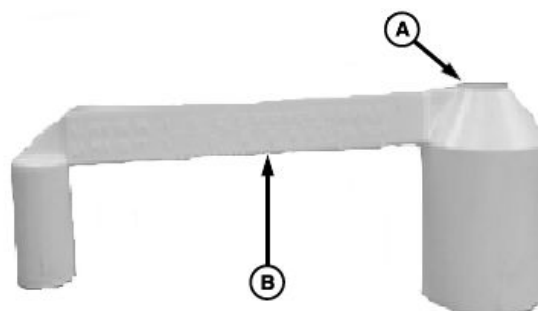
CS12167,00004AC -19-27MAR14-6/6

Determine Material Bulk Density

NOTE: A small variance in density can drastically effect spread rate. Use density scale every load to ensure proper amount is applied.

In order to maintain consistency load the cup the same way every time.

1. Fill cup (A) with material to be spread.
2. Position scale (B) on finger so it is balanced.
3. Enter reading from balance point into Spreadstar™ system. (See Spreader Product Setup in Spreadstar™ section of this manual.)



A—Cup

B—Density Scale

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OUC6092,00009B8 -19-19MAY15-1/1

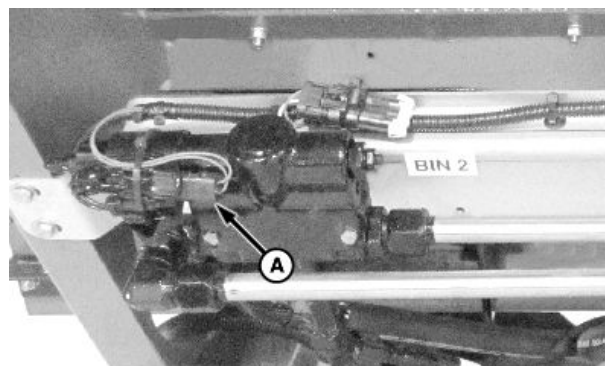
N98675 —UN—23MAY12

Determine Material CFR

Conveyor Feed Rate (CFR) is the volume of material in cm^3 spread per revolution of the belt drive roller at a 1.0 cm feed gate opening (cu. ft. per revolution at a 1.0 in. feed gate opening). The calibration procedure requires the ability to capture the product that is dispensed from the spreader belt with the spinners off.

NOTE: For best results, use at least 362.8 kg (800 lbs.) of product per calibration test.

1. Load spreader box with a sample of product to calibrate.
2. Disconnect connector (A) from spinner PWM valve.



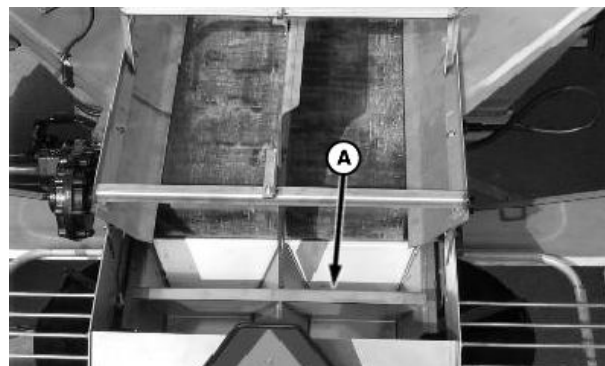
A—Connector

OUC6092,00009B9 -19-19MAY15-1/8

N101125 —UN—14NOV12

3. Remove deflector (A).

A—Deflector



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OUC6092,00009B9 -19-19MAY15-2/8

N98676 —UN—23MAY12

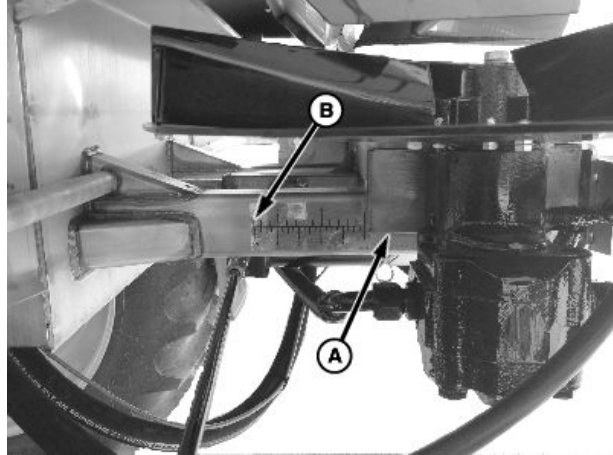
4. Crank spinner assembly (A) forward to position four (B).
5. Position machine so there is access to rear of machine to collect product dispensed during calibration.

NOTE: Prior to beginning calibration, ensure product is dispensing all the way to the spinners. This is very critical for front bin (Bin 1) if a second product bin is installed, otherwise the belt runs for a period of time with no product on it resulting in a false calibration value.

6. Measure actual depth of material on conveyor.

A—Spinner Assembly

B—Position Four



N98677—UN—23MAY12

Continued on next page

OUC6092,00009B9 -19-19MAY15-3/8

Spreader-Calibration

The diagram illustrates the 'Spreader-Calibration' screen. At the top, there are three tabs: 'Product Calibration' (highlighted), 'Dry Spreader Calibration', and 'Vehicle Calibration'. Below the tabs, the main area contains a 'Product Calibration' label with an arrow pointing to a button labeled 'C' (Enter Button). At the bottom left, there is a 'Reset Dry Spreader Product Calibrations To Defaults' label with an arrow pointing to a button. On the right side, there is a vertical stack of softkeys: 'F' (Tractor icon), 'G' (Up arrow icon), 'H' (CAL with a downward arrow icon, labeled 'A'), 'I' (1 2 3 icon), 'J' (Wrench icon), and a 'Park Brake' button with a warning icon. Below the 'Park Brake' button are two more buttons: a house icon and an up arrow with a grid icon.

A—Calibration Softkey **B—Product Calibration Tab** **C—Enter Button**

7. Select the Calibration softkey (A).
8. Select the Product Calibration tab (B).
9. Select the Enter Button (C) next to Product Calibration to go the calibration procedure. The “Start Cal” screen appears.

Continued on next page

OUO6092,00009B9 -19-19MAY15-4/8

N84196—UN—14APR09

10. Select the product to calibrate from drop-down menu (A).
11. Select the bin containing the product for calibration from drop-down menu (B).
12. Select input box (C) next to “Expected CFR”. A numeric key pad appears on the screen. Enter the expected CFR for your spreader model as listed in the following table, if the value is different from value displayed. Press “Enter” button on keypad to accept the new value.

The screenshot shows a calibration screen with the following fields and labels:

- Product Number:** 1 (Label A)
- Product Name:** DAP
- Product Bin:** Bin 1 (Label B)
- Expected CFR (cu.ft/rev):** 0.346 (Label C)
- Product Density During Calibration (cu.ft/rev):** 60.0 (Label D)
- Feed Gate Opening During Calibration (in):** 3.00 (Label E)
- Desired Weight of Product (lbs):** 0.0 (Label F)
- Calculated CFR (cu.ft/rev):** 0.000

At the bottom left, there is a button with three diagonal lines. On the right side, there is a vertical text label: N87285 —UN—17NOV09.

A—Drop-Down Menu
B—Drop-Down Menu
C—Input Box

D—Input Box
E—Input Box
F—Input Box

Expected CFR Values			
CFR (metric) ^a	CFR (English) ^b	Conveyor Type	Model
2854	0.256	Belt Over Chain Conveyor	DN456 and DN485
3400	0.305	Straight Belt Conveyor	DN456 and DN485
1605	0.144	Belt Over Chain Conveyor	Second Product Bin

^aBased on 1.0 cm feed gate opening

^bBased on 1.0 in. feed gate opening

13. Select input box (D) and input the Product Density for the product using the numeric key pad that appears. Press “Enter” button to accept the new value.

NOTE: Use at least 362.8 kg (800 lbs.) for the calibration.

It is important to measure the actual product depth dispensed on the belt and enter that value as the feed gate opening for accurate calibration and application.

14. Select input box (E) and input the feed gate opening using the numeric key pad. Press “Enter” button to accept the new value.

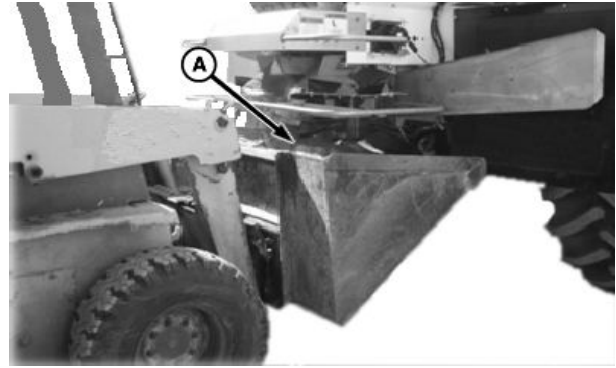
15. Select input box (F) and input the desired weight of product to dispense using the numeric key pad. Press “Enter” button to accept the new value.

Continued on next page

OOU6092,00009B9 -19-19MAY15-5/8

16. Position suitable container to capture product dispensed (A) from conveyor belt.

A—Dispensed Product



N98678 —UN—23MAY12

OOU6092,00009B9 -19-19MAY15-6/8

CAUTION: Prevent personal injury from spinning blades. Verify that spinner PWM valve is disconnected electrically to prevent unexpected spinner blade movement while catching product dispensed during calibration procedure.

NOTE: SOLUTION PUMP ENGAGE switch is used as SPINNER ENABLE switch when dry spreader is installed. MASTER ON switch on multifunction control handle is used for CONVEYOR BELT START switch.

17. Turn on Spinner Enable switch and Conveyor Belt Start switch. The belt starts turning and the “Cal Running” screen appears. The estimated weight (A) of material dispensed by the belt is displayed and updated as more material is dispensed.
18. Calibration stops when estimated material dispensed is equal to desired weight of product to dispense. Operator can stop calibration procedure at any time by turning off the spreader. Calibration resumes when operator turns spreader back on.
19. When calibration is done, display indicates “Cal Done: Enter Measured Weight of Product”.

Product Number	1	Cal Running:
Product Bin	Bin 1	
Expected CFR (cu.ft/rev)	0.346	Estimated Material Dispensed (lbs) 198.00 Calculated CFR (cu.ft/rev) 0.346
Product Density During Calibration (lbs/cu.ft)	60.0	
Feed Gate Opening During Calibration (in)	3.00	
Desired Weight of Product (lbs)	749.6	

A—Estimated Weight

N78484 —UN—22OCT07

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OOU6092,00009B9 -19-19MAY15-7/8

20. Weigh the product dispensed. Select input box (A) and input the measured weight of product dispensed using the numeric key pad that appears.
21. Press "Enter" button (B). Spreadstar™ generates and displays the Calculated CFR (C). This value is stored for the product or a value can be entered to override the Calculated CFR.
22. The accuracy of the Calibrated CFR can be checked by running the calibration procedure again, this time using the Calculated CFR as the Expected CFR. If the Calculated CFR is correct, the "Desired Weight of Product" to dispense entered closely matches the measured weight of product when the procedure is run.
23. Connect previously disconnected electrical connector to spinner PWM valve.

A—Input Box
B—Enter Button

C—Calibrated CFR Value

Cal Done: Enter Measured Weight of Product

Product Number: 1

Product Bin: Bin 1

Expected CFR (cu.ft/rev): 0.346

Product Density During Calibration (lbs/cu.ft): 60.0

Feed Gate Opening During Calibration (in): 3.00

Desired Weight of Product (lbs): 749.6

Measured Weight of Product (lbs): 776.0 (A)

Estimated Material Dispensed (lbs): 750.20 (B)

Calculated CFR (cu.ft/rev): 0.339 (C)

Start Cal: Enter estimated CFR, Density, Gate Opening and Desired Weight

Product Number: 1

Product Bin: Bin 1

Expected CFR (cu.ft/rev): 0.339

Product Density During Calibration (lbs/cu.ft): 60.0

Feed Gate Opening During Calibration (in): 3.00

Desired Weight of Product (lbs): 0.0

Calculated CFR (cu.ft/rev): 0.339 (C)

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N78486—UN—22OCT07

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OUC6092,00009B9 -19-19MAY15-8/8

Spread Pattern Test Procedure



Spread Pattern Testing

OOU6092,00009BA -19-19MAY15-1/6

N107964 —UN—31OCT13

1. Select testing course (Figure A), measuring 37 m x 122 m (120 ft. x 400 ft.), should have a slope of less than two degrees.

NOTE: All testing should be done when the wind velocity is less than 8.05 km (5 mph). If wind is present, testing must be done with spreader traveling parallel (within ± 15 degrees) to the wind direction.

A—Collection Tray

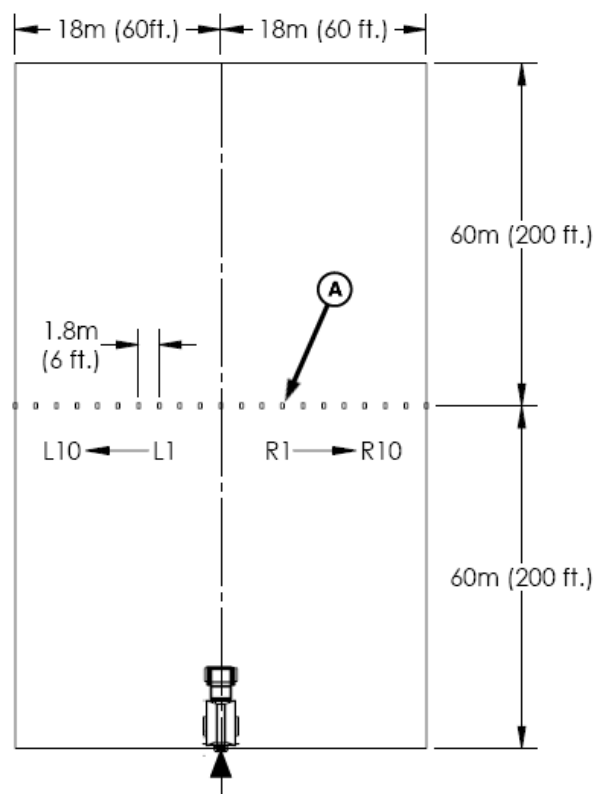


Figure A—Test Course Setup

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OOU6092,00009BA -19-19MAY15-2/6

N98681 —UN—30MAY12

2. Insert a plastic grid (A) into each of the 21 collection trays (B).
3. Position the 21 collection trays on six-foot 182.88 cm (6 ft.) centers with the longest dimension of the tray parallel to the direction of travel. Using provided rope (C) with indicator marks (D).

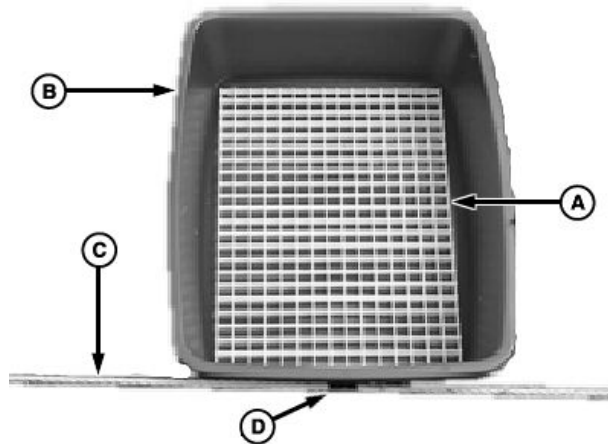
NOTE: Do not allow loaded spreader to sit for more than four hours prior to testing.

4. Position spreader at the beginning of the course so that vehicle will straddle center collection tray. Set gate opening based on desired rate/acre according to theoretical application charts supplied with each unit.

NOTE: Prior to driving the spreader through the test course, it should be driven at least 137 m (450 ft.) at spreader test speeds.

Each test must be repeated driving the same direction (not back and forth).

5. Drive spreader completely through course at normal operating speeds.



A—Plastic Grid
B—Collection Tray

C—Rope
D—Placement Indicator

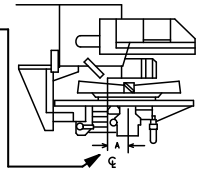
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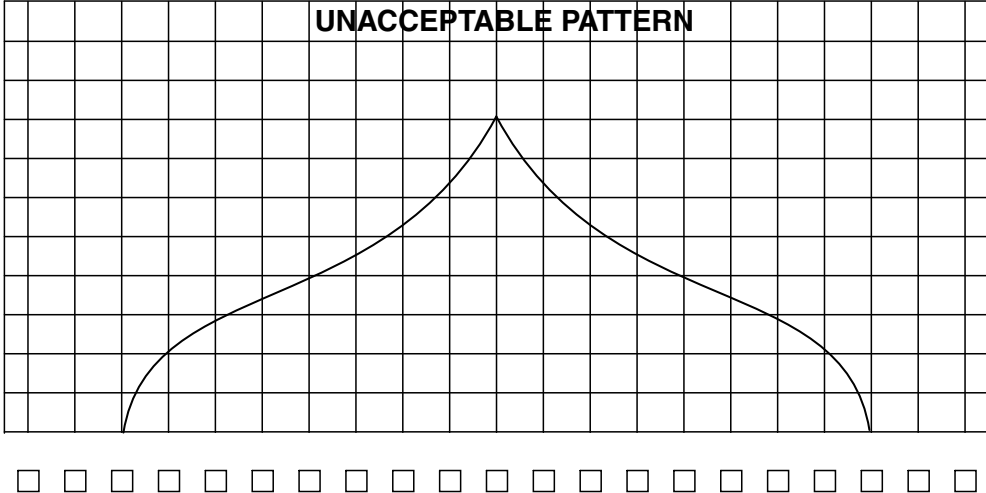
OOU6092,00009BA -19-19MAY15-3/6

Spread Pattern

Pattern Test No. _____	Material Used _____	Spinner Indicator Setting _____
Site _____	Weight/Cu.Ft. _____	Drop-off Point to CL Distance _____
Date _____	Rate/Acre _____	Blade Settings _____
Spreader Model _____	Gate Opening _____	Spinner Valve Setting _____
Conveyer Type _____	Wind; From _____ at _____ MPH	Spinner RPM _____



UNACCEPTABLE PATTERN



ACCEPTABLE PATTERN

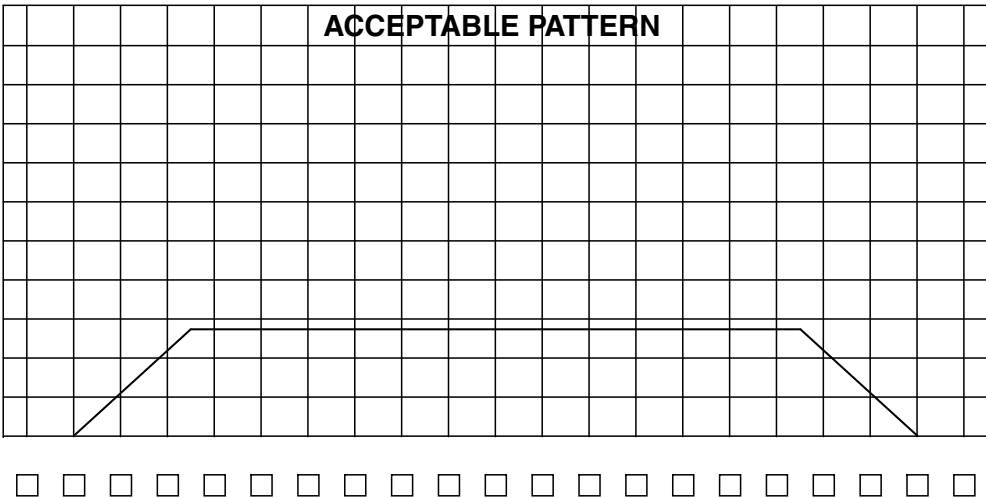


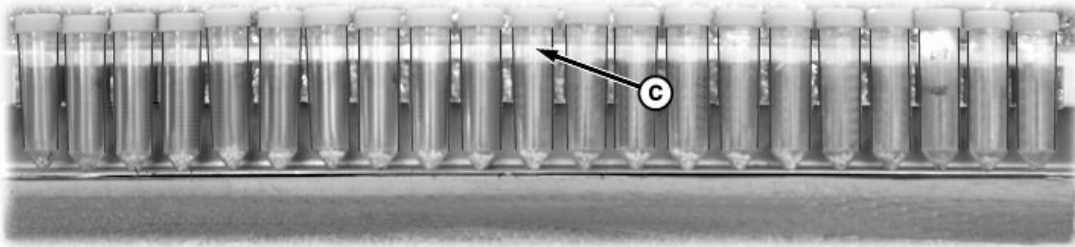
Figure B—Spread Chart Example

6. Using the data sheets supplied with the kit, document all spreader adjustments required.

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OUO6092,00009BA -19-19MAY15-4/6

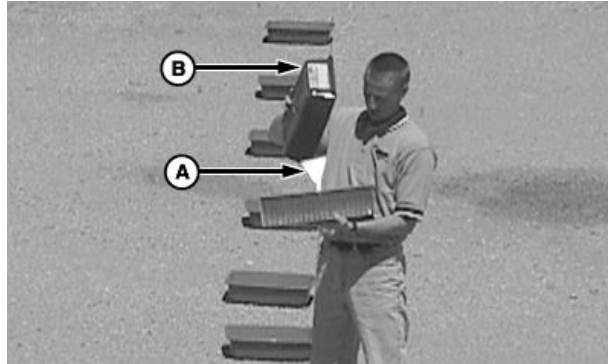
N97289—UN—05MAR12



N98687 —UN—01JUN12

7. Using the funnel (A), transfer the contents of each collection tray (B) into its corresponding test tube (C) beginning at one end of the trays and working towards the opposite end.
8. Record the volume in each test tube in the box on the data sheet under the corresponding tray position. (Figure B).

NOTE: It is highly recommended that **ONLY ONE ADJUSTMENT** be made between test samples taken. If more than one adjustment is made, it will be difficult to determine which adjustment was responsible for the change in pattern shape.



N98680 —UN—23MAY12

DETERMINE DRIVING CENTERS

Once you attain a desirable pattern (Figure E), optimum-driving centers can be determined. To determine optimum driving centers (effective spread width), locate the points on both the left and right side of the pattern where the amount of material applied is half the amount at the center of the pattern. The distance between these two points represents the driving centers to be used (effective spread width).

When blended fertilizers are being applied, a visual inspection of the samples should be made to determine whether the blend within the effective spread width is consistent with the desired blend. If the blend is not consistent, a narrower overall spread width should be used and a new optimum driving center (effective spread width) should be determined.

Once the effective spread width has been established, change spread width in Spreadstar™ to match actual spread width.

A—Funnel

B—Collection Tray

C—Test Tubes

DRIVING METHODS

The perimeter (Figure C) and switch back (Figure D) driving methods are both acceptable.

NOTE: Utilizing the switch back method amplifies non-symmetrical patterns by blending right side on right and left side on left. The perimeter method compensates for nonsymmetrical patterns by blending the right side of the pattern with the left side of the adjacent pattern or vice versa.

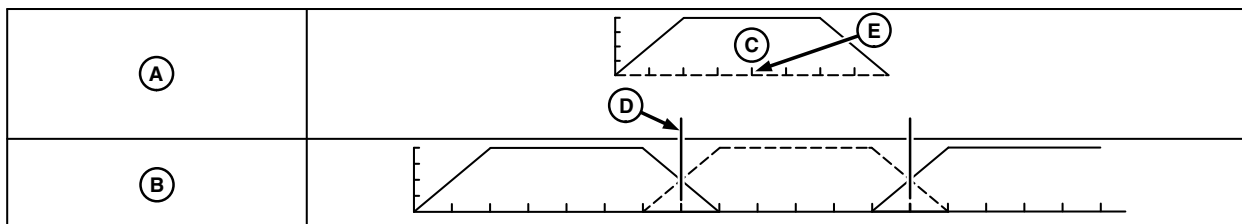


Figure E—Ideal Method

A—Flat Top Pattern

B—Ideal Pattern Overlap

C—Flat Top

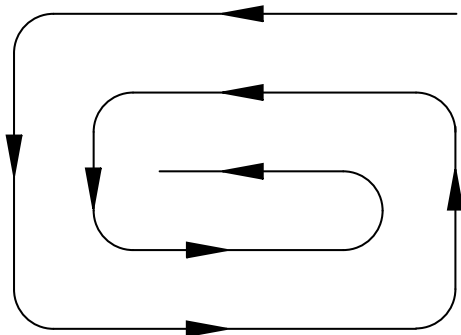
D—Spread Width

E—Center of Pattern

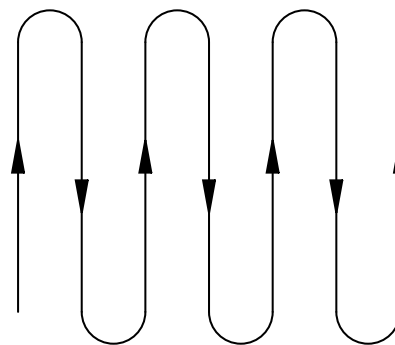
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N97290 —UN—05MAR12



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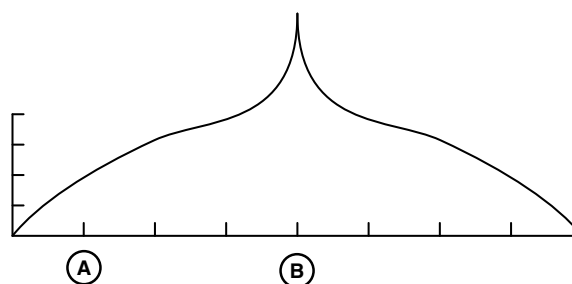
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Troubleshooting

Heavy Directly Behind the Vehicle

RECOMMENDED ADJUSTMENTS

1. Move the spinner forward (toward the conveyor). (See Spreader Preparation in this section.)
2. Decrease spinner RPM. (See Spreader Product Setup in Spreadstar™ section of this manual.)
3. Check spinner blade quality. (See Spinners in this section.)
4. Move one or two spinner blades to a lower numbered hole. (See Install Replacement Spreader Fins in Lubrication and Maintenance section of this manual.)



A—Spread Width

B—Center

N97346 —UN—05MAR12

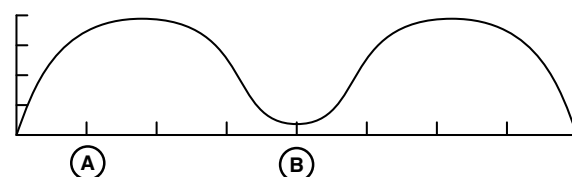
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OUC6092,00009BB -19-19MAY15-1/4

Light Directly Behind the Vehicle

RECOMMENDED ADJUSTMENTS

1. Move the spinner rearward (away from conveyor). (See Spreader Preparation in this section.)
2. Increase spinner RPM. (See Spreader Product Setup in Spreadstar™ section of this manual.)
3. Check spinner blade quality. (See Spinners in this section.)
4. Move one or two spinner blades to a higher numbered hole. (See Install Replacement Spreader Fins in Lubrication and Maintenance section of this manual.)



A—Spread Width

B—Center

N97347 —UN—05MAR12

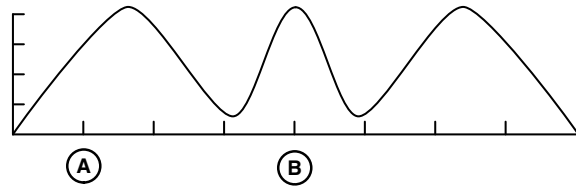
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OUC6092,00009BB -19-19MAY15-2/4

Light Outside Vehicle's Tire Tracks

RECOMMENDED ADJUSTMENTS

1. Check spinner blade quality. (See Spinners in this section.)
2. Decrease spinner RPM. (See Spreader Product Setup in Spreadstar™ section of this manual.)
3. Move all blades to #2 position. (See Install Replacement Spreader Fins in Lubrication and Maintenance section of this manual.)



A—Spread Width

B—Center

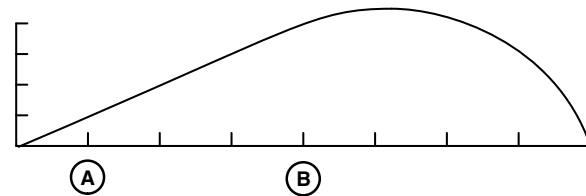
N97348—UN—05MAR12

OUC6092,00009BB -19-19MAY15-3/4

Pattern Off Center

RECOMMENDED ADJUSTMENTS

1. Check to see feedgate is level and free of caked material. (See Verify Feedgate Opening in this section.)
2. Make sure hillside divider is mounted squarely and centered. (See Verify Hillside Divider Location in Pre-Starting Checks section in this manual.)
3. Check to be sure spinner assembly is mounted squarely and centered. (See Squaring Spinner Frame in Pre-Starting Checks section in this manual.)
4. Make sure material divider is mounted squarely and centered. (See Verify Material Divider Correct Position in Pre-Starting Checks section in this manual.)
5. Testing should be done parallel to wind. (See Test Procedure in this section.)



A—Spread Width

B—Center

N97349—UN—05MAR12

OUC6092,00009BB -19-19MAY15-4/4

Lubrication and Maintenance

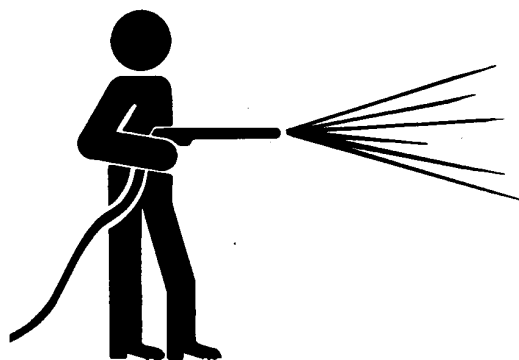
Clean Vehicle of Hazardous Chemicals, Including Pesticides

CAUTION: During application of hazardous chemicals, including pesticides, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical.

When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.

IMPORTANT: Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.



3. Wash entire exterior of vehicle.
4. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

OUC6092,000070F -19-07MAR12-1/1

T6642EJ—UN—18OCT88

Prevent Hydraulic System Contamination

IMPORTANT: Cleanliness is very important when working on the hydraulic system. Prevent contamination by assembling the cylinders, hoses, couplers, and valves in a clean area of the shop.

Leave protective caps on the fluid openings until ready to make the connection. When charging

the system, use a tractor or other source that contains clean oil, free of abrasive materials. Keep couplers clean. Abrasive particles, like sand or metal fragments, can damage seals, barrels and pistons, causing internal leakage.

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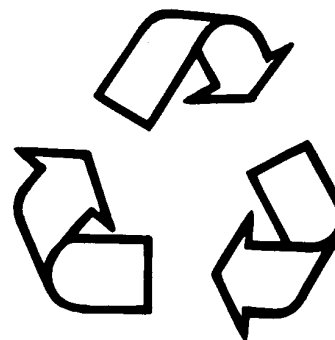
Dispose of Waste Properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.



Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer.

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TS1133—UN—15APR13

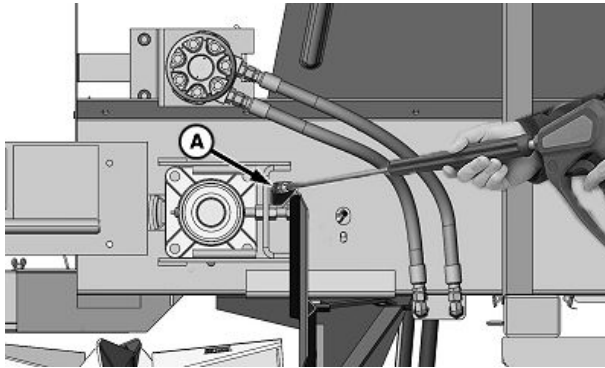
Service Intervals

LOCATION	PLACES	METHOD	INTERVAL ^a			
			Daily	Weekly	Monthly	Annually
Straight Belt Conveyor						
Drive Shaft Bearings	2	Grease Gun		•		
Idler Shaft Bearings	2	Grease Gun		•		
Snubber Pulley Bearings	2	Grease Gun		•		
Idler Adjusting Screws	2	Hand Grease		•		
Gear Case	1	Gear Oil			• Check	• Change
Belt Over Chain Conveyor						
Drive Shaft Bearings	2	Grease Gun		•		
Idler Shaft Bearings	2	Grease Gun		•		
Snubber Pulley Bearings	2	Grease Gun		•		
Idler Adjusting Screws	2	Hand Grease		•		
Chain—If Equipped	2 Strands	Spray Oil	•			
Chain Oiler—If Equipped	1	Oil Mixture	•			
Gear Case	1	Gear Oil			• Check	• Change
Feedgate Jack Assembly						
Gears	1	Grease Gun				•
Tube	1	Grease Gun		•		
Spinner						
Grease Zerks – Jack & Shaft	4	Grease Gun		•		
Second Product Bin						
Idler Shaft Bearings	2	Grease Gun		•		
Drive Shaft Bearings	2	Grease Gun		•		
Idler Adjusting Screws	2	Hand Grease				•

^aUnusual conditions, such as excessive dust, temperature extremes or excessive moisture may require more frequent lubrication of specific parts.

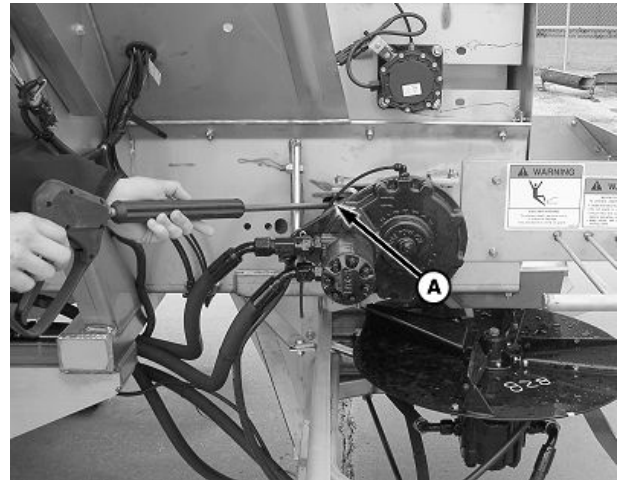
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Conveyor Cleanout—As Required



Right Side Shown

N103535 —UN—26APR13



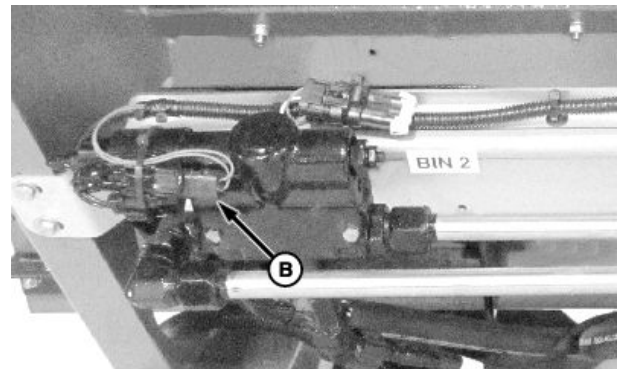
Left Side Shown

N98652 —UN—23MAY12

Ports (A) have been provided to aid conveyor belt cleanout.

CAUTION: Disconnect connector (B) from spinner PWM valve prior to performing conveyor belt cleanout. Disconnecting PWM valve prevents spinners from running while conveyor is running.

1. Set conveyor speed to manual operation and select a slow speed. (See Initial Setup in Operate System section of this manual.)
2. Start conveyor by pressing conveyor belt master on/off switch. Allow conveyor to run during cleanout.
3. Insert pressure washer nozzle into ports (A) to wash debris from between belt.
4. Shut off conveyor belt when finished.



A—Wash Port

B—Connector

N110821 —UN—24MAR14

CS12167,0000541 -19-21MAR14-1/1

Straight Belt Conveyor Maintenance and Adjustment — As Required

Belt Maintenance

- Check conveyor belt daily for proper tension and tracking.

NOTE: Belt side wear is normal if tracking is correct.

Belt will operate satisfactorily with up to 25.4 mm (1 in.) wore from sides.

- Inspect belt lacing for wear of belt grip area and loosening hardware
- Tighten loose nuts and peen end of lacing screw into nut slot as required.

Belt Adjustment

1. Tension

Belt tension should be just tight enough to prevent slippage—no tighter. If the “flats” on the conveyor drive belt are visible through the belt, tension is high enough.

2. Tracking

Empty spreader to check tracking by doing the following:

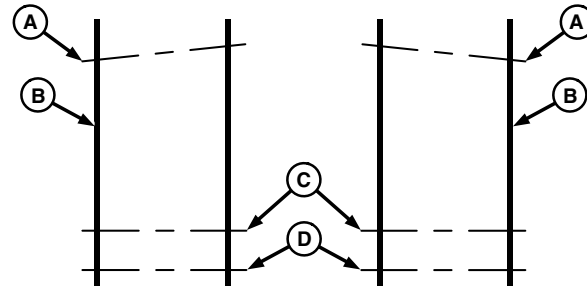
- Make sure that machine engine is shut off. Set spinner speed to 0 rpm by placing solution pump switch in off position.

CAUTION: Do not work near rotating spinners. Severe injury can result from contact with moving parts.

- Make sure that the conveyor is shut off. Measure vertical distance from bottom of sill to conveyor in front of second stake from front. Measurement should be 7.62 cm (3 in.) on both sides of conveyor. Use front adjusting bolts to tension both sides of conveyor as necessary.
- Verify that snubber pulley is secure and square. Measure from bearing block to rear of sill on both sides. Move bearing blocks in slotted holes as necessary to make measurements equal.
- Run machine engine, place controller in manual mode (see Verify Feedgate Opening in Pre-Starting Checks section of this manual) and run conveyor at slow speed. Gradually increase speed (40—50 rpm) until unit tracking is visual. If problems occur, refer to next page.

CAUTION: Use great care to avoid entanglement with any moving parts.

A properly adjusted belt will either remain in a steady position centered on the pulley or more often will “wander”



Problem 1

A—Idler Pulley, Belt Contact Side
B—Belt Contact Point

C—Snubber
D—Drive Pulley

back and forth 6.35 mm (1/4 in.) to 127 mm (1/2 in.) across the pulley, but remain generally centered. The conveyor belt sides should not curl or scuff.

Tracking problems and solutions

Improper tracking is usually due to three basic causes. These problems and their respective solutions follow:

• Problem 1:

Belt tracks to one side, contacts side of conveyor. Contact is more severe at the front and may not quite touch at the rear.

• Solution 1:

Tighten idler bearing at side in contact with belt. Make this adjustment one turn at a time. Operate conveyor 10—15 minutes at high speed to allow belt to react to the adjustment. Repeat if necessary.

N97101—UN—28FEB12

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CS12167,00004AE -19-27MAR14-1/10

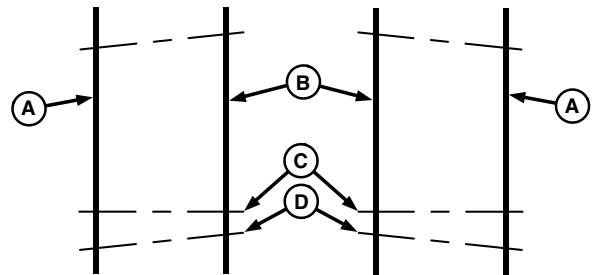
• **Problem 2:**

Belt contacts one side at front and contacts other side at rear.

• **Solution 2:**

If adjusting as in Problem 1 does not remedy the situation, adjustment of the drive pulley is necessary. Mark the position of the adjustment screw (right-hand side) on the side of the unit. Determine which illustration shows the problem to determine which direction the drive shaft should be moved. Loosen the adjustment screw to move the shaft forward; tighten the screw to move the shaft rearward.

NOTE: The illustration is exaggerated. Only move the adjustment screw 6.35 mm (1/4 in.) turn at a time after loosening the bolts holding the bearing. Usually 0.4 mm (1/64 in.) to 0.8 mm (1/32 in.) is all that is necessary. Retighten bearing. Operate conveyor for 10—15 minutes at a high speed to allow belt to react to adjustment. The problem should change to problem 1. Adjust as in problem 1 to track belt properly.



Problem 2

A—Belt Contact, Front
B—Belt Contact, Rear

C—Drive Pulley, Adjustment Side
D—Snubber

Continued on next page

CS12167,00004AE -19-27MAR14-2/10

N97102 —UN—28FEB12

• **Problem 3:**

Belt contacts side as in problem 1, but contacts more heavily at a point approximately 0.91 m (3 ft.) from rear.

• **Solution 3:**

Realign snubber pulley. Note the point or side of contact from the illustration. This side of the snubber is too low.

NOTE: This pulley moves up and down ONLY.

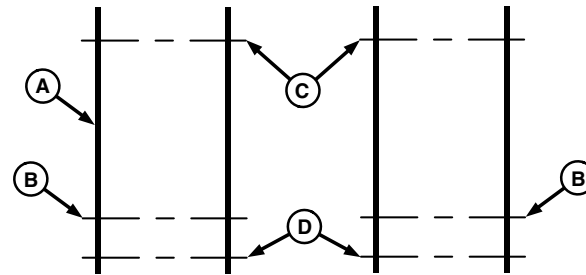
1. Loosen belt and raise or lower as necessary.
2. Loosen the two bolts holding the snubber bearing on the side to be adjusted after marking the old position.
3. Move approximately 1.6 mm (1/16 in.) at a time and retighten.
4. Retighten belt the exact number of turns previously loosened.
5. Operate conveyor 10—15 minutes to allow belt to react to adjustment.
6. Refer to problem 1 and readjust. If readjustment does not compensate, repeat.

If, after adjustment, the belt does not track properly, check the following.

1. Check for twisted spreader body. Shims must be placed between spreader cross-tubes and the mounting surface to eliminate any twist in the body structure.
2. Check for crowned Idler Pulley by placing a straight edge on the pulley. If properly crowned, the straight edge will contact the center pulley leaving 1.6 mm (1/16 in.) gap between the straight edge and both pulley ends. Replace pulley if crown is not present.
3. Check for lacing "squareness" by removing the belt. This should be done as a last resort. If the lacing is not square to the belt ends, contact your dealer for service.
4. Sight down the body under the belt shields. The only point which should come close to or slightly contact the belt, is the lowest point on the shield. If the belt contacts the shield firmly at any other point, tracking will be impossible and you should see your dealer immediately. Only your dealer can correct the situation.

Belt Shield

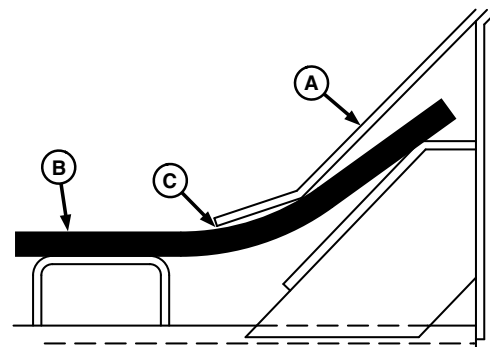
- The belt shields along each side of the belt inside the unit should be just contacting the belt when the belt is properly adjusted and the unit is empty.



Problem 3

A—Belt Contact Point
B—Snubber, Low Side

C—Idler Pulley
D—Driver Pulley



Belt Shield

A—Belt Shield
B—Belt

C—Proper Adjustment of
Shield, Zero Gap

- If a shield has clearance along its length, it can be moved down until it just contacts the belt by loosening the fastener bolts, allowing the shield to slide downward and tightening bolts.
- If the shield is tending to cut into the belt along its full length, loosening the bolts and raising the shield until it just contacts the belt will correct the problem.
- If the shield cuts the belt at one or more points or if it gaps at one or more points, it should be replaced.

Belt Removal and Replacement

NOTE: Two people are required for belt removal and replacement procedure.

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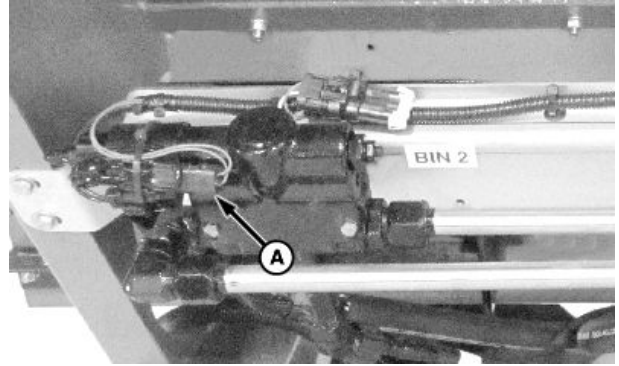
CS12167,00004AE -19-27MAR14-3/10

N97103—UN—28FEB12

N97104—UN—28FEB12

1. Disconnect connector (A) from spinner PWM valve to prevent spinners from running during procedure.

A—Connector

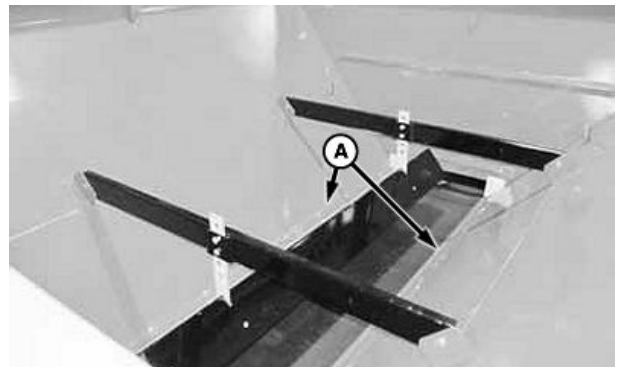


N101125—UN—14NOV12

CS12167,00004AE -19-27MAR14-4/10

2. Remove belt shields (A), clean and repaint.
3. Set conveyor speed to manual operation and select a slow speed so tracking is visual. (See Initial Setup in Operate System section of this manual.)

A—Belt Shields



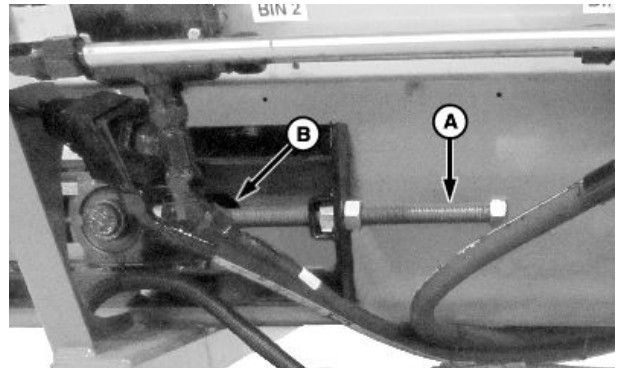
N101378—UN—19DEC12

CS12167,00004AE -19-27MAR14-5/10

4. Move front idler adjustment bolts (A) to extreme rear position (B).
5. Shut down spreader.
6. Remove splice pin to separate belt splice.
7. Insert pin into one side of belt splice.
8. Attach winch to belt splice and remove belt.

NOTE: If splice pin cannot be removed, cut belt and remove by hand.

9. Using any suitable tool, remove any caked material from the drive pulley, snubber pulley, idler pulley and from inside frame channels. Clean and paint as required.



A—Idler Adjustment Bolt

B—Extreme Rear Position

N101311—UN—18DEC12

Continued on next page

CS12167,00004AE -19-27MAR14-6/10

10. Thread OLD splice pin through one end of new belt. Connect wire (A) to pin about 0.64 cm (1/4 in.) in from each side of the belt, forming a loop.

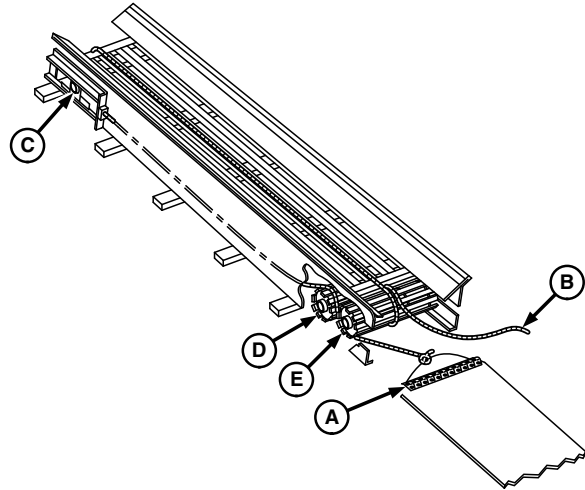
CAUTION: Be sure that power is shut off before performing threading operation.

11. Thread the rope (B) along the top of the belt channel, around the front idler pulley (C), over the snubber pulley (D) and under the drive pulley (E).
12. Tie end of rope under drive pulley to wire loop. Wrap other end once around drive pulley and out the rear.

CAUTION: Use extreme care to avoid entanglement! Someone must stay at controls to stop conveyor instantly if required.

Use extreme care to avoid entanglement! Stay well back from drive pulley.

13. Start conveyor drive so drive pulley turns slowly. Pull on rope while another person feeds belt into unit from rear. Pull new belt under drive pulley, over snubber pulley, along frame channels, around front idler pulley and back to drive pulley.



A—Wire
B—Rope, 762—914.4 cm
(25—30 ft.)
C—Idler Pulley

D—Snubber Pulley
E—Drive Pulley

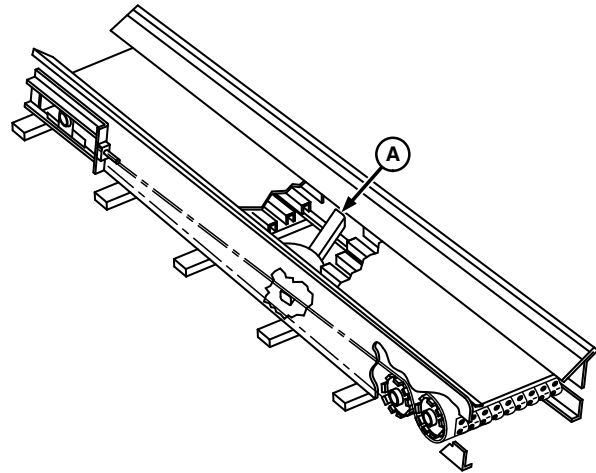
CS12167,00004AE -19-27MAR14-7/10

14. Shut off all power and insert lumber under belt to support its weight.

NOTE: Use three pieces of lumber to support belt weight.

15. Insert a plastic tube in each splice and across the full width of the belt and pull the two ends together at the center of the rear face of the drive pulley.
16. Insert the splice pin.
17. Snug belt up by tightening idler pulley until the edge of belt is approximately 5.08 cm (2 in.) above lower edge of sill lower flange on each side.
18. Adjust as needed for proper tracking. (See Belt Adjustment in this section.)

A—Lumber, 5.08 cm x 10.16 cm
x 91.44 cm (2 in. x 4 in. x
36 in.)

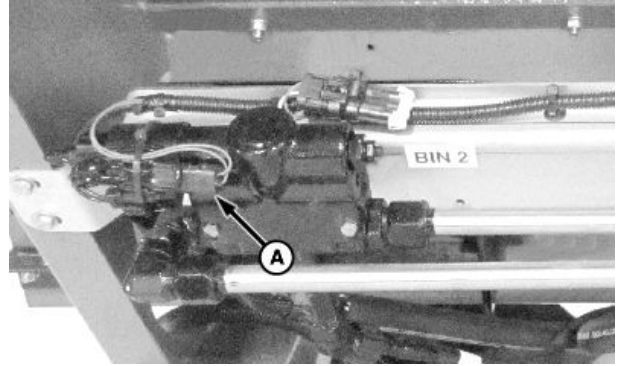


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CS12167,00004AE -19-27MAR14-8/10

19. Connect connector (A) at spinner PWM valve.

A—Connector



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CS12167,00004AE -19-27MAR14-9/10

N101125—UN—14NOV12

Belt Over Chain Conveyor Maintenance and Adjustment—As Required (If Equipped)

4 Conveyor Chain Maintenance

CAUTION: Do not remove material while conveyor or spinner is running.

IMPORTANT: Conveyor will move away from bottom panel if material accumulates under conveyor or on sprockets. The more material that accumulates, the closer the chain will come to the chain shields. If the conveyor should catch chain shield, permanent damage could happen to conveyor, chain shields or unit.

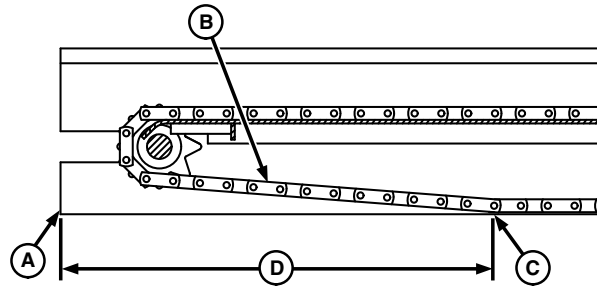
- Hose down unit and remove any material buildup on sprockets and under chain.
- **Lubricate conveyor chain daily.**
 - a. Allow unit to dry after washing.
 - b. Shut down spinners and run conveyor slowly. (See initial Start-up procedure in Operating System section in this manual.)
 - c. Use mixture of 75% fuel oil and 25% SAE 10 oil in a pressurized hand spray gun.
 - d. Spray oil mixture between links of chain through openings provided at rear end of sill or from front outside body when clearance is adequate.
- **If a chain oiler is used.**
 - a. Fill oiler reservoir daily with a mixture of 75% fuel oil and 25% SAE 10 oil.
 - b. Before each filling of unit with material to be spread, open petcock and run conveyor until full length of chain has been oiled, then shut petcock.

Chain Maintenance.

Proper belt tension is also a factor in chain and sprocket life.

NOTE: Second product bin conveyor contacts bottom of sill only at center when properly tensioned.

1. Measure from rear of sill (A) to where conveyor chain (B) contacts with bottom of sill (C).
2. Verify that measurements on both sides of conveyor are equal and within specified range.



A—Rear Sill Edge
B—Conveyor Chain

C—Contact Point
D—Dimension

Specification

Conveyor Chain	
Tension—Distance.....	91-102 cm. 36-40 in.

3. Adjust at front idler pulley if necessary.

IMPORTANT: Conveyor chains that are too tight will tend to stretch, causing excess sprocket wear and eventually breakage.

Excess slack presents the possibility of chain catching on subframe parts.

Bent or distorted chain bars will cause damage as well. Straighten or replace bent or distorted chain bars immediately.

#4 Conveyor Belt Maintenance

The standard belt for the #4 conveyor has a nylon fabric that is impervious to moisture, weathering or normal action except oil.

1. Inspect belt fastener occasionally for wear or “raveling” of belt grip area.

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CS12167,000053E -19-05MAR14-1/2

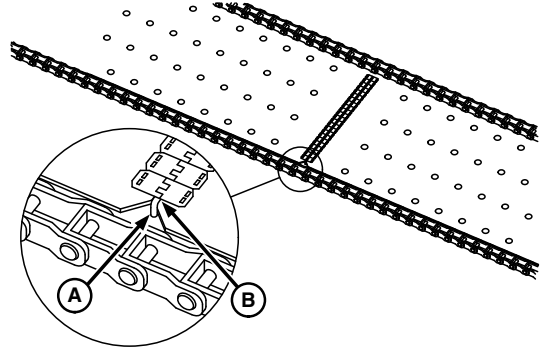
N97839—UN—27APR12

IMPORTANT: Pin must not rotate. If pin ends (A) are not bent down and tight against lacing (B), the ends may cut into the chain shield or belt wipers.

2. Verify that belt connecting pin is positioned correctly.

A—Splice Pin End

B—Lacing Edge

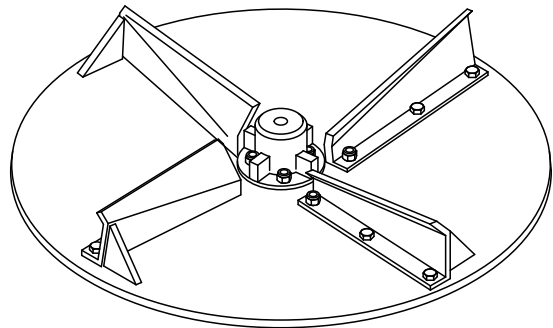


N97840—UN—10APR12

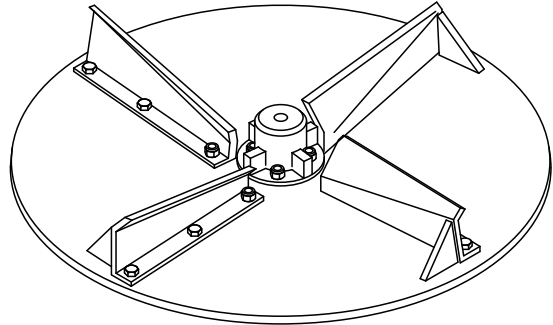
CS12167,000053E -19-05MAR14-2/2

Install Replacement Spreader Fins—As Required

1. Remove existing spreader fins.
2. Locate proper replacement fins and hardware from fin kit.
3. Position fins with gusset near outer edge of spinner disc.
 - Gusset faces counter-clockwise for left-hand disc.
 - Gusset faces clockwise for right-hand disc.



Left-Hand Spinner Disc



Right-Hand Spinner Disc

N97834—UN—04APR12

N97835—UN—04APR12

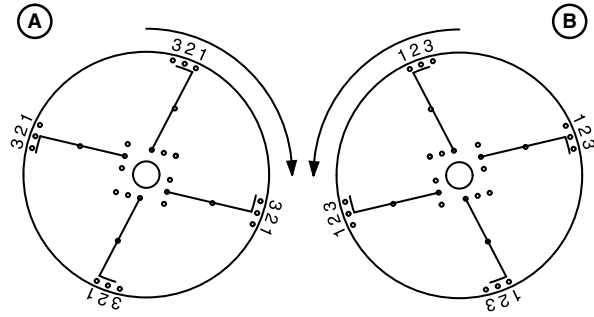
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OUC6435,000075C -19-31MAY12-1/3

4. Place fin hole closest to gusset over proper hole near outer edge of spinner disc as shown.

A—Left-Hand

B—Right-Hand



N97836—UN—04APR12

OUC6435,000075C -19-31MAY12-2/3

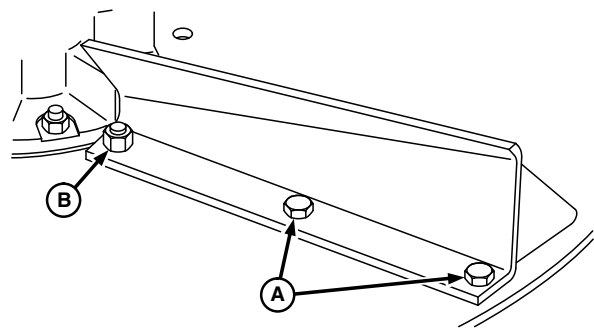
IMPORTANT: Cap screw (B) must be installed with head of bolt on bottom side of disc for the speed sensor. Incorrectly installed hardware will result in machine damage.

NOTE: Spinner speed sensor will not work if stainless steel hardware is used for cap screw (B).

5. Loosely install cap screws (A) and (B) as shown.
6. Tighten hardware (A) and (B).

A—Cap Screws and Lock Nuts
(Head on Top Side of Disc)

B—Cap Screw and Lock Nut
(Head on Bottom Side of
Disc)



Detail of Cap Screw Position

N97838—UN—04APR12

OUC6435,000075C -19-31MAY12-3/3

Clean Bin Sensor—As Required

CAUTION: Avoid injury from falling. Stay out of spreader body. Do not climb on spreader body.

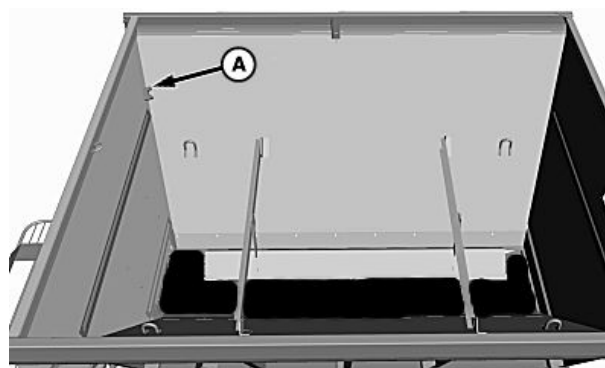
IMPORTANT: Avoid spreading wet material, it may stick to sensor and not warn operator when bin is low.

DO NOT aim high pressure washer directly at sensor damage to sensor may occur.

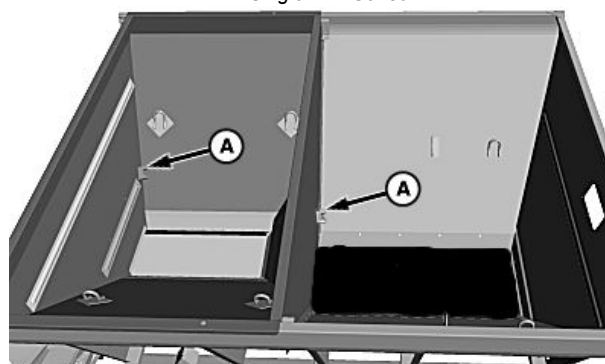
NOTE: Clean sensor periodically to prevent accumulation of material.

1. Use a commercial ladder to access bin sensors (A) without climbing on or entering spreader body.
2. Clean sensor with brush or hose.

A—Bin Sensor



Single Bin Sensor



Dual Bin Sensors

N108298—UN—05NOV13

N108299—UN—05NOV13

CS12167,00004B1 -19-29JAN14-1/1

Inspect Tarp—Biweekly (If Equipped)

1. Inspect tarp for any tears, cuts or worn areas.

2. Repair or replace as required.

TB90758,00019F7 -19-06MAY15-1/1

Inspect Tarp Assembly Hardware—Biweekly (If Equipped)

1. Inspect tarp assembly for loose or missing hardware.

NOTE: All hardware supplied with tarp assembly is stainless steel. Ensure that replacement parts are stainless steel.

2. Replace missing or damaged hardware.

TB90758,00019F8 -19-06MAY15-1/1

Check Tarp Assembly Cable Tension—Biweekly (If Equipped)

1. Check cable tension.

2. Adjust as necessary. (See Install Cables and Ratchets for adjustment.)

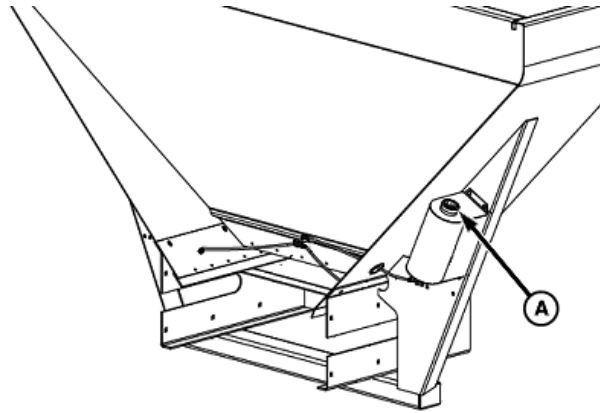
TB90758,00019F9 -19-06MAY15-1/1

Lubricate Belt Over Chain Conveyor—Daily

IMPORTANT: Do not lubricate straight belt conveyors or second product bin conveyor. Use of lubricants will cause the belt to deteriorate and fail prematurely.

Belt Over Chain Conveyor Only: Use a 75% diesel fuel and 25% number 10 oil mixture.

A—Belt Over Chain Conveyor
Oiler



Chain Oiler

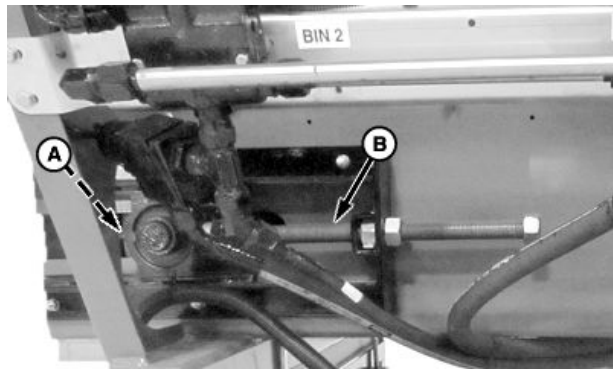
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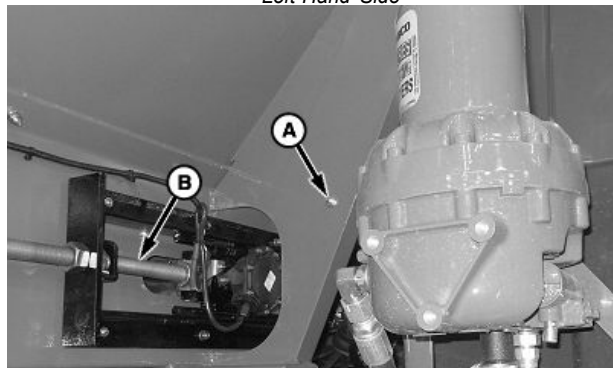
Lubricate Idler Shaft Bearings and Adjustment Screws—Weekly

Lubricate front idler bearing (A) and adjusting screws (B) using John Deere SD Poly Urea grease. Use three pumps of grease at fitting (A). Hand grease threads (B).

A—Idler Bearing Grease Fitting B—Idler Adjusting Screws



Left-Hand Side



Right-Hand Side

N101312 —UN—14MAY13

N103536 —UN—26APR13

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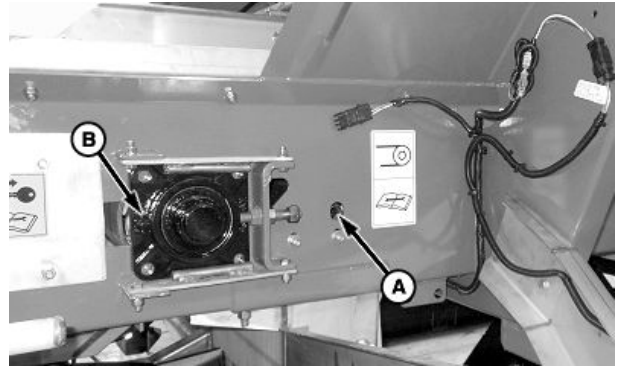
Lubricate Snubber and Drive Shaft Bearings—Weekly

Lubricate snubber and drive shaft bearings using John Deere SD Poly Urea grease. Use three pumps of grease at fittings (A) and (B).

Repeat on left-hand side.

A—Snubber Shaft Grease Fitting

B—Drive Shaft Grease Fitting



Right-Hand Side Shown

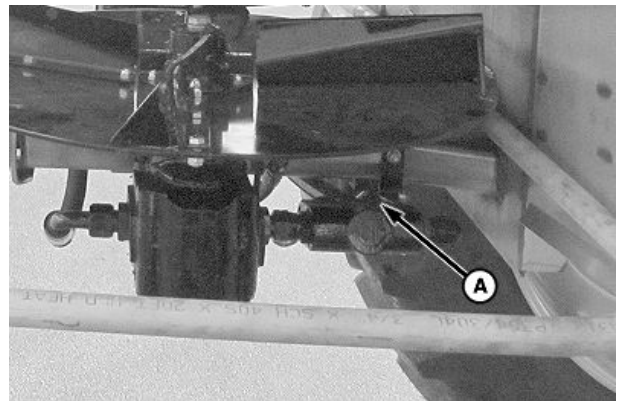
CS12167,00004AF -19-30OCT13-1/1

N108297—UN—05NOV13

Lubricate Spinner Jack—Weekly

Lubricate spinner jack using John Deere SD Poly Urea grease. Use three pumps of grease at fitting (A).

A—Spinner Jack Grease Fitting



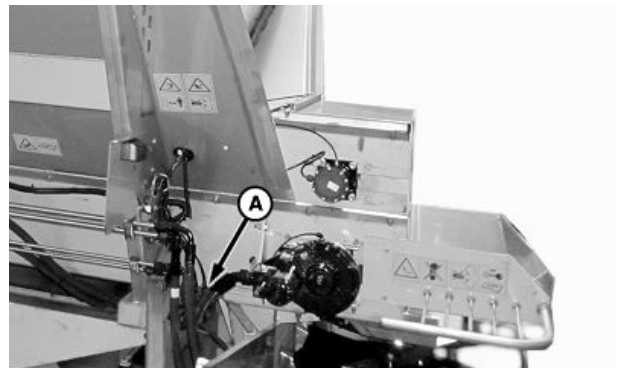
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N97230—UN—13APR12

Lubricate Second Product Bin Drive and Idler Shaft Bearings—Weekly

Lubricate second product bin drive and idler shaft bearings using John Deere SD Poly Urea grease. Use three pumps of grease at each fitting on lube bank (A).

A—Lube Bank



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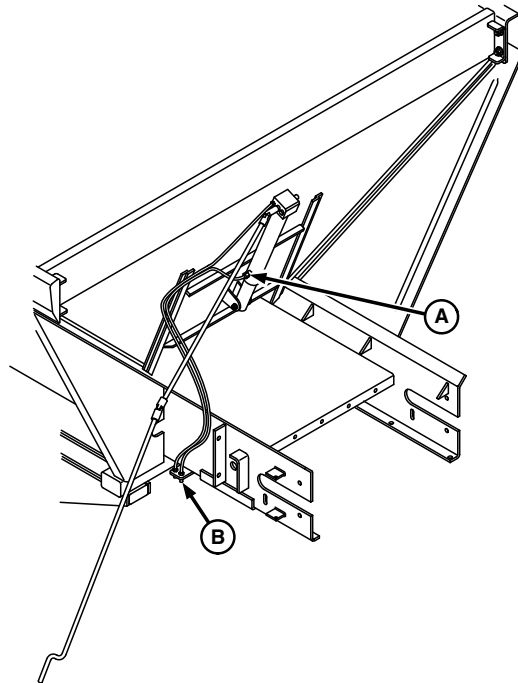
N109664—UN—30JAN14

Lubricate Feedgate Jack Tube (If Equipped)—Weekly

Lubricate feedgate tube (A) using John Deere SD Poly Urea grease. Use three pumps of grease at lube bank (B).

A—Tube

B—Lube Bank



N97285—UN—05MAR12

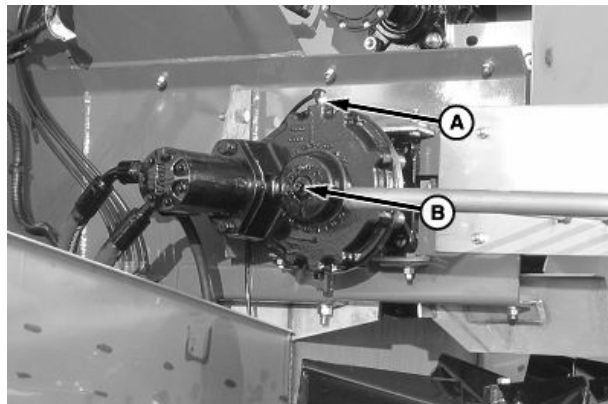
CS12167,000035E -19-25APR13-1/1

Check Gear Case Oil—Monthly

1. Park machine on flat level surface.
2. Remove fill plug (A).
3. Remove fill level plug (B).
4. Fill hub through fill plug hole, with recommended oil until fill level is reached. (See Gear Case Oil in Lubricant Specifications section.)
5. Reinstall plugs.

A—Fill Plug

B—Fill Level Plug

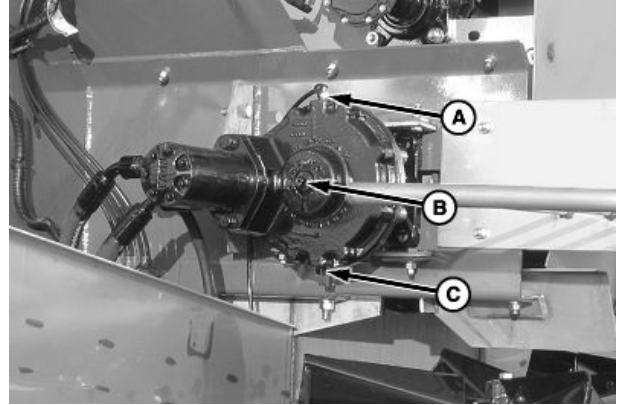


N97231—UN—13APR12

CS12167,0000279 -19-09MAY13-1/1

Change Gear Case Oil—Annually

1. Park machine on flat level surface.
2. Remove drain plug (C) and drain hub oil. Reinstall plug.
3. Remove fill plug (A).
4. Remove fill level plug (B).
5. Fill hub through fill plug hole, with approximately 0.43 L (1 pt.) of recommended oil until fill level is reached. (See Gear Case Oil in Lubricant Specifications section.)
6. Reinstall plugs.



A—Fill Plug
B—Fill Level Plug

C—Drain Plug

N97284 —UN—13APR12

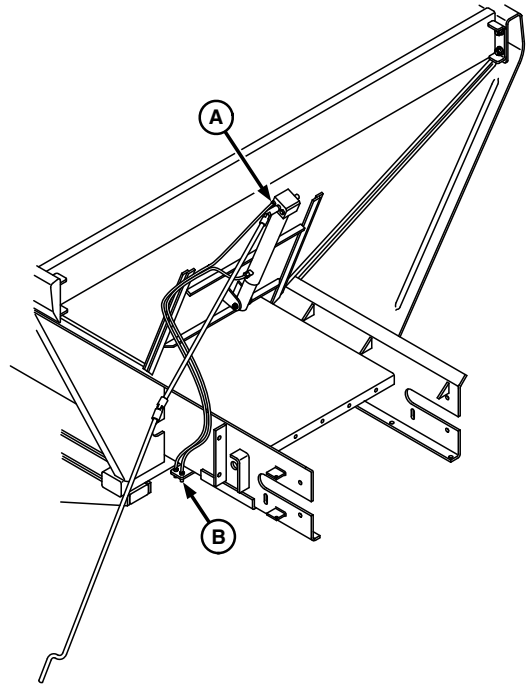
CS12167,000027A -19-09MAY13-1/1

Lubricate Feedgate Jack Gears (If Equipped)—Annually

Lubricate feedgate gears (A) using John Deere SD Poly Urea grease. Use three pumps of grease at lube bank (B).

A—Gears

B—Lube Bank



N97286 —UN—05MAR12

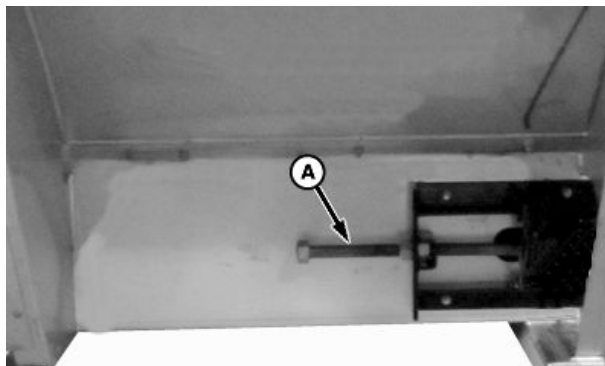
CS12167,000035D -19-25APR13-1/1

Lubricate Second Product Bin Idler Adjustment Screws—Annually

NOTE: Second product bin must be removed to grease adjustment screws (A).

Lubricate adjustment screws using John Deere SD Poly Urea grease. Hand apply grease to threads.

A—Adjustment Screw, 2 used



Adjustment Screw—Right Hand Side Shown

N109665 —UN—30JAN14

CS12167,000053F -19-29JAN14-1/1

Lubricant Specifications

Hydrostatic/Hydraulic Drive Oil

IMPORTANT: The lubricant distributor and/or supplier is to be held responsible for results obtained from their products. Procure lubricants from distributors and/or supplier of unquestioned integrity, supplying known and tested products. Do not jeopardize your equipment with inferior lubricants. Use only products qualified under the following oil viscosity specifications and classification recommended by reputable oil companies.

Use oil viscosity based on the expected air temperature range during the period between oil changes.

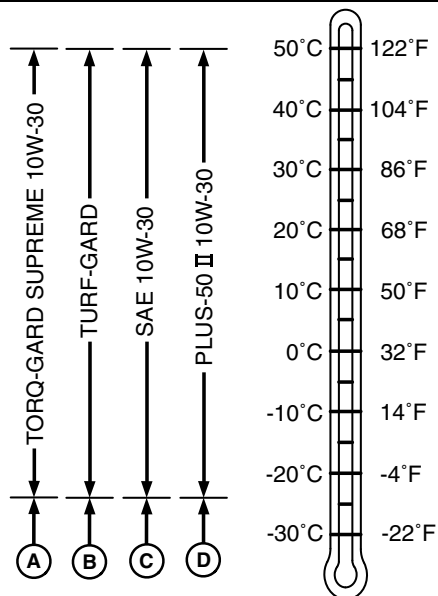
The following oils are preferred:

- TURF-GARD™
- TORQ-GARD SUPREME™ 10W-30
- Plus-50™ II 10W-30 with API of CI-4 or higher

Also acceptable:

SAE 10W-30 with API of CI-4 or higher

TURF-GARD is a trademark of Deere & Company
TORQ-GARD SUPREME is a trademark of Deere & Company
Plus-50 is a trademark of Deere & Company



A—TORQ-GARD SUPREME
10W-30
B—TURF-GARD

C—SAE 10W-30
D—Plus-50 II 10W-30

N102625 —UN—28FEB13

CS12167,000035F -19-25APR13-1/1

Gear Case Oil

Lubricate these assemblies with non-corrosive type SAE 90 E.P. (extreme pressure) gear oil conforming to MIL-L2105B multi-purpose gear lubricating oil requirements (API Service GL 4) with ambient

temperatures from 40 to 100°F (4.4 to 37.8°C). Ambient temperatures below 40°F (4.4°C) require an SAE 80 E.P. lubricant; above 100°F (37.8°C) use an SAE 140 E.P. grade oil.

CS12167,000003F -19-16APR12-1/1

Grease

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

John Deere SD Polyurea Grease is preferred.

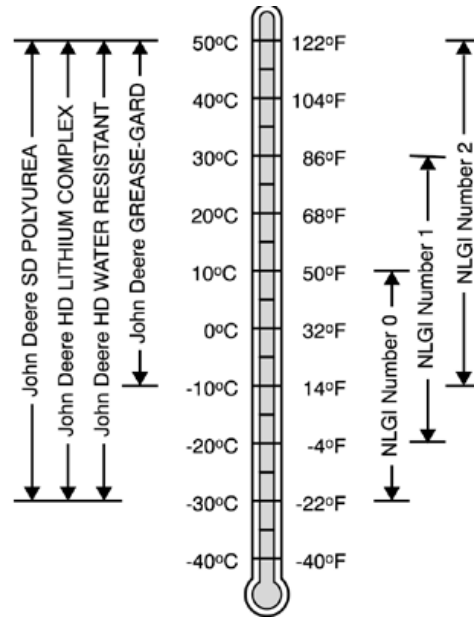
The following greases are also recommended:

- John Deere HD Lithium Complex Grease
- John Deere HD Water Resistant Grease
- John Deere GREASE-GARD™

Other greases may be used if they meet the following:

- NLGI Performance Classification GC-LB

IMPORTANT: Some types of grease thickeners are not compatible with others. Consult your grease supplier before mixing different types of grease.



Greases for Air Temperature Ranges

GREASE-GARD is a trademark of Deere & Company

DX,GREA1 -19-14APR11-1/1

TS1673 —UN—31OCT03

Chain Oiler Mixture

IMPORTANT: DO NOT lubricate the straight belt conveyor or the second product bin. Use of lubricants will cause the belt to deteriorate and fail prematurely.

Belt Over Chain Conveyor Only: Use a 75% diesel fuel and 25% number 10 oil mixture.

CS12167,0000574 -19-24MAR14-1/1

Troubleshooting

Troubleshooting

Symptom	Problem	Solution
Spinner motors do not turn when spinner control valve is in running position or conveyor does not run when controller is in manual mode.	Hydraulic oil level low.	Add hydraulic oil as necessary to maintain level around mid-point of sight gauge.
	Hydraulic Pump is not rotating.	Refer to John Deere 4 Series manual.
	Relief valve set too low.	Refer to John Deere 4 Series manual.
	Worn pump.	Refer to John Deere 4 Series manual.
	Jammed or frozen spinner motors.	Free up. If not possible, replace as required.
	Jammed or frozen conveyor.	Free up conveyor.
Spinners turn but conveyor does not run in manual mode.	Jammed or frozen conveyor hydraulic motor.	Replace motor.
	Relief valve open to return line.	Using relief valve testing adapter and flowmeter, test valve for opening pressure. If pressure is not 13,800 kPa (138 bar) (2000 psi), replace relief valve.
	Jammed or frozen conveyor.	Free up conveyor.
	Jammed or frozen conveyor hydraulic motor.	Replace motor.
Console in operation mode, but the conveyor does not move when the machine moves.	Conveyor hydraulic motor shaft key sheared.	Replace key.
	Relief valve open to return line.	Using relief valve testing adapter and flowmeter, test valve for opening pressure. If pressure is not 13,800 kPa (138 bar) (2000 psi), replace relief valve.
	Jammed or frozen conveyor.	Free up conveyor.
	Jammed or frozen conveyor hydraulic motor.	Replace motor.
Spinner speed does not stay constant.	Conveyor hydraulic motor shaft key sheared.	Replace key.
	Relief valve set too low.	Refer to John Deere 4 Series manual.
	Worn pump.	Refer to John Deere 4 Series manual.
	Defective spinner control valve.	Replace valve metering spool spring. If no improvement, replace spinner control valve.
	Contamination in John Deere load sense bleed-down orifice.	Clear orifice.

Continued on next page

TB90758,0001906 -19-11MAY15-1/3

Symptom	Problem	Solution
Spinner speed on display not accurate.	Inner fin hardware is stainless steel.	Replace hardware with non-stainless steel hardware.
Hydraulic oil overheats (93.4°C. (200°F.) or hotter).	Hydraulic oil level low.	Add hydraulic oil as necessary to maintain level around mid-point of sight gauge.
	Relief valve set too low.	Refer to John Deere 4 Series manual.
	Conveyor relief valve open to return line.	Using relief valve testing adapter and flowmeter, test valve for opening pressure. If pressure is not 13,800 kPa (138 bar) (2000 psi), replace relief valve.
	Worn motor (spinner or conveyor).	Motor heats up at an excessive rate (check for this heating when system is cold). Replace motor.
	Improper or deteriorated hydraulic oil.	Replace hydraulic oil with proper specification oil and replace filter.
	Pinched or obstructed hose, hydraulic line, or fitting.	Clear obstruction or replace part. Straighten kinked hoses.
Hydraulic system pulsates.	Hydraulic pump requires adjustment.	Refer to John Deere 4 Series manual.
Spreader not functioning properly.	Controller application or programming.	Refer to the control manual Troubleshooting section.
Hopper empties with no low bin warning.	Bin sensor covered with material.	Clean bin sensor. (See Clean Bin Sensor in Lubrication and Maintenance section.
	Faulty bin sensor.	Replace bin sensor.
	Controller alarm not enabled.	Program controller to count down product with low bin warning.
Cables do not wind properly in the spool grooves.	Spools are binding on the roll tube.	Remove, clean, and regrease spools.
	Tarp is not centered.	Measure, center tarp and verify that plastic washers are installed on fixed tube.
	Ratchets are not installed correctly.	Adjust from side to side
	Incorrect cable tension.	Adjust tension.
Tarp does not roll evenly, binds on one or both ends.	Spools are binding on the roll tube.	Remove, clean, and regrease spools.
	Cable tension is too loose.	Adjust tension as necessary.

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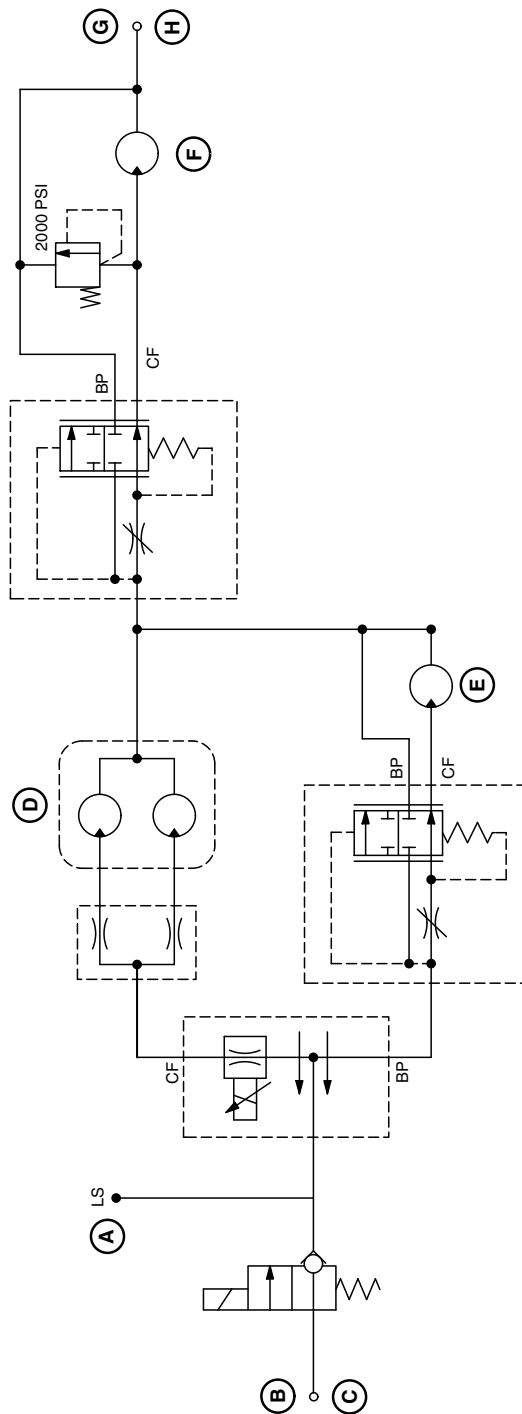
TB90758,0001906 -19-11MAY15-2/3

Troubleshooting

Symptom	Problem	Solution
Tarp is not taut in the middle when closed.	Tarp size has changed.	Verify that tarp has not been altered or improperly repaired, and that tarp is square.
	Tension too loose.	Adjust tension as necessary.
	Ridge straps are not in correct location.	Move or install ridge straps as needed.
Tarp is worn or has holes.	Bow height and spacing are incorrect.	Move, adjust, repair, or replace bows as necessary.
	Sharp edges on spreader box.	Remove sharp edges, repair, or replace tarp parts and /or tarp.

TB90758,0001906 -19-11MAY15-3/3

Hydraulic Schematic



A—To Combo Valve “AL” Port
B—Pressure (33 GPM)

C—To Combo Valve “BT” Port
D—Spinner
E—Second Product Bin
Conveyor

F—Conveyor
G—Return
H—To Hose Barb On Filter

N103538 — UN—30APR13

Storage

Avoid Exposure To Chemicals

CAUTION: Exposure to chemicals, including pesticides, can cause injury or death.

DO NOT RELY ON THIS CAB, CAB PRESSURE INDICATOR, OR CAB AIR FILTERS TO PROTECT AGAINST CHEMICAL EXPOSURE.

To reduce risk of chemical exposure:

- Wear PERSONAL PROTECTIVE EQUIPMENT in accordance with chemical manufacturer's label
- Allow only trained, certified applicators to apply chemicals
- Always close the windows and doors during spreading
- Verify that John Deere activated carbon filters, or appropriate substitutes, are installed at all times (see Checking and Replacing Cab Air Filters in the Cab and Air Conditioning section of machine Operator's Manual)
- Keep chemicals out of the cab
- Clean or remove contaminated shoes or clothing before entering the cab
- Keep cab interior clean
- Read and follow all instructions in:
 - Manufacturer's label for each chemical applied
 - U.S. Environmental Protection Agency (EPA) Worker Protection Standard for Agricultural Pesticides
 - State or regional guidelines for worker safety and health
 - Operator's Manual for this machine
- Numerous requirements must be met, including but not limited to EPA regulations
- Even while inside cab, always wear long sleeves, long pants, shoes, and socks when applying chemicals, including pesticides



- If necessary to leave cab when chemicals, including pesticides, are present, always use personal protective equipment recommended by chemical manufacturer
- Before reentering cab, remove personal protective equipment used to handle chemicals, including pesticides, and store equipment in accordance with EPA guidelines to prevent contaminating cab

OUO6092.000079E -19-04JUN12-1/1

TS220 —UN—15APR13

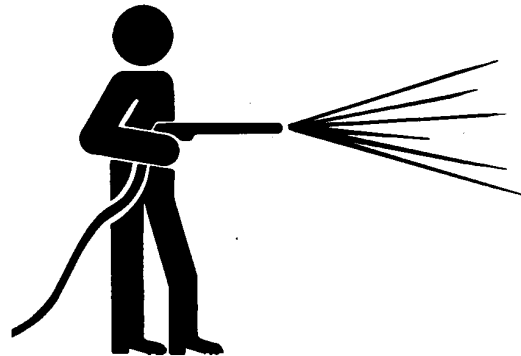
TS272 —UN—23AUG88

Clean Vehicle of Hazardous Chemicals, Including Pesticides

CAUTION: During application of hazardous chemicals, including pesticides, residue can build up on the inside or outside of the vehicle. Clean vehicle according to use instructions of hazardous chemical.

When exposed to hazardous chemicals, clean exterior and interior of vehicle daily to keep free of the accumulation of visible dirt and contamination.

IMPORTANT: Directing pressurized water at electronic/electrical components or connectors, bearings and hydraulic seals, fuel injection pumps or other sensitive parts and components may cause product malfunctions. Reduce pressure, and spray at a 45 to 90 degree angle.



1. Wash entire exterior of vehicle.
2. Dispose of any wash water with hazardous concentrations of active or non-active ingredients according to published regulations or directives.

OUO6092.0000784 -19-07MAR12-1/1

T6642EJ —UN—18OCT88

Prepare Machine for Storage

1. Clean machine thoroughly, inside and out. (See Clean Vehicle Of Hazardous Chemicals, Including Pesticides in this section.)
2. Lubricate spreader box. (See Lubrication and Maintenance section in this manual.)
3. Paint as necessary to prevent rust.
4. Refer to John Deere 4 series manual for proper procedure for preparing machine for storage.
5. Leave a note in the cab detailing what was done for winter protection so that the next person to use the machine will know what kind of preparation is needed for field operation.

CS12167,00004B2 -19-31OCT13-1/1

Remove Machine from Storage

1. Clean machine thoroughly, inside and out.
2. Check oil level in hydrostatic/hydraulic reservoir. If low, check for leaks. Add oil as required.
3. Make sure all hardware is tight.
4. Lubricate all grease fittings. (See Lubrication and Maintenance section in this manual.)
5. Review Operator's Manual for operating adjustments and safety information.
6. Calibrate spreader.

CS12167,00002B2 -19-02JAN13-1/1

Specifications

Specifications DN456

CAPACITIES

Struck Capacity

DN456	5.64 cu. m (7.38 cu. yd.) (199 cu. ft.)
DN456 with Second Product Bin	Front Bin—3.07 cu. m (4.02 cu. yd.) (108 cu. ft.) Second Product Bin—1.87 cu. m (2.44 cu. yd.) (66 cu. ft.)

WEIGHT (EMPTY)

Base Machine (Chassis Only)—R4030	9262 kg (20,376 lb.)
Base Machine (Chassis Only)—R4038	9673 kg (21,281 lb.)
Base Machine (Chassis Only)—R4045	11,728 kg (25,860 lb.)
Dry Spreader (Straight Belt Conveyor) with Endgate	1469 kg (3240 lb.)
Dry Spreader (Straight Belt Conveyor) with Second Product Bin	1741 kg (3840 lb.)
Dry Spreader (Belt Over Chain Conveyor) with Endgate	1651 kg (3640 lb.)
Dry Spreader (Belt Over Chain Conveyor) with Second Product Bin	1923 kg (4240 lb.)
Second Product Bin	431 kg (950 lb.)
Removable Endgate	158 kg (350 lb.)

CAUTION: Do not exceed the load capacity for the tires used and the maximum allowed homologated mass of the machine configuration as follows.

- 18,100 kg (39,910 lb.) for R4030
- 18,800 kg (41,454 lb.) for R4038
- 23,900 kg (53,700 lb.) for R4045

Spreader Items	Specification
Spinner Speed (Max.)	1050 rpm ^a
Gate Height	
Standard Feed Gate Height	0—127 mm (0—5 in.)
High Rate Feed Gate Height	0—280 mm (0—11 in.) ^b
Spreader Box with Second Product Bin	38—76 mm (1.5—3 in.) Main Bin 38—76 mm (1.5—3 in.) on Second Product Bin
Minimum Controllable Conveyor RPM	5 rpm
Maximum Conveyor RPM	50 rpm Main Bin 60 rpm Second Product Bin

^aBased on 121 L/min (32 gpm) at 3000 psi

^bAvailable only when installed on R4045

BB83525,0000016 -19-26MAR14-1/1

Specifications DN485

CAPACITIES	
Struck Capacity	
DN485	8.46 cu. m (11.06 cu. yd.) (300 cu. ft.)
DN485 with Second Product Bin	Front Bin—6.02 cu. m (4.6 cu. yd.) (162 cu. ft.) Second Product Bin—3.94 cu. m (3.01 cu. yd.) (106 cu. ft.)
WEIGHT (EMPTY)	
Base Machine (Chassis Only)—R4045	11,728 kg (25,860 lb.)
Dry Spreader (Straight Belt Conveyor) with Endgate	1696 kg (3740 lb.)
Dry Spreader (Straight Belt Conveyor) with Second Product Bin	1969 kg (4340 lb.)
Dry Spreader (Belt Over Chain Conveyor) with Endgate	1877 kg (4140 lb.)
Dry Spreader (Belt Over Chain Conveyor) With Second Product Bin	2059 kg (4540 lb.)
Second Product Bin	431 kg (950 lb.)
Removable Endgate	158 kg (350 lb.)

CAUTION: Do not exceed the load capacity for the tires used and the maximum allowed homologated mass of the machine configuration as follows.

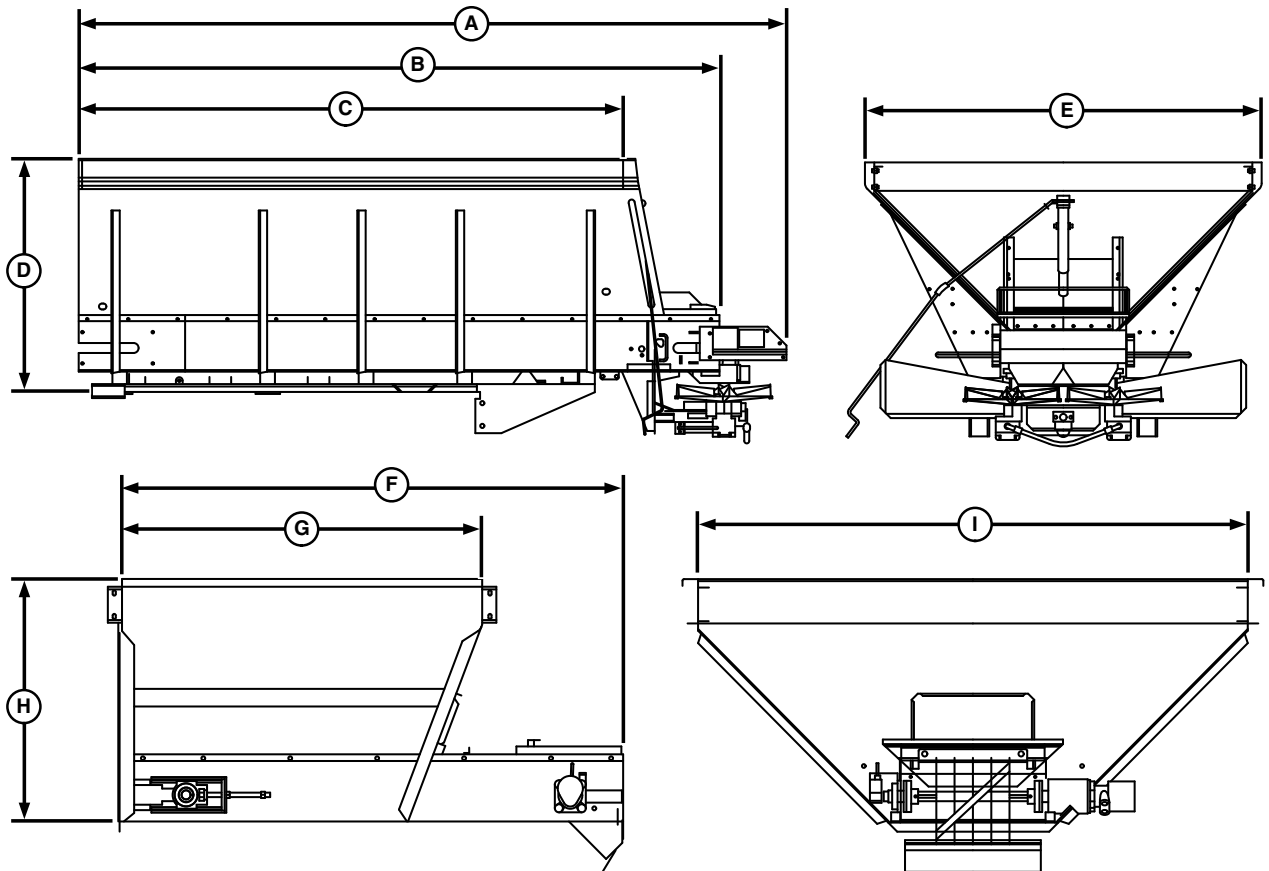
• 23,900 kg (53,700 lb.) for R4045

Spreader Items	Specification
Spinner Speed (Max.)	1050 rpm ^a
Gate Height	
Standard Feed Gate Height	0—127 mm (0—5 in.)
Spreader Box with Second Product Bin	38—76 mm (1.5—3 in.) Main Bin 38—76 mm (1.5—3 in.) on Second Product Bin
Minimum Controllable Conveyor RPM	5 rpm
Maximum Conveyor RPM	50 rpm Main Bin 60 rpm Second Product Bin

^aBased on 121 L/min (32 gpm) at 3000 psi

BB83525,0000013 -19-26MAR14-1/1

Dimensions DN456



DN456 and Second Product Bin

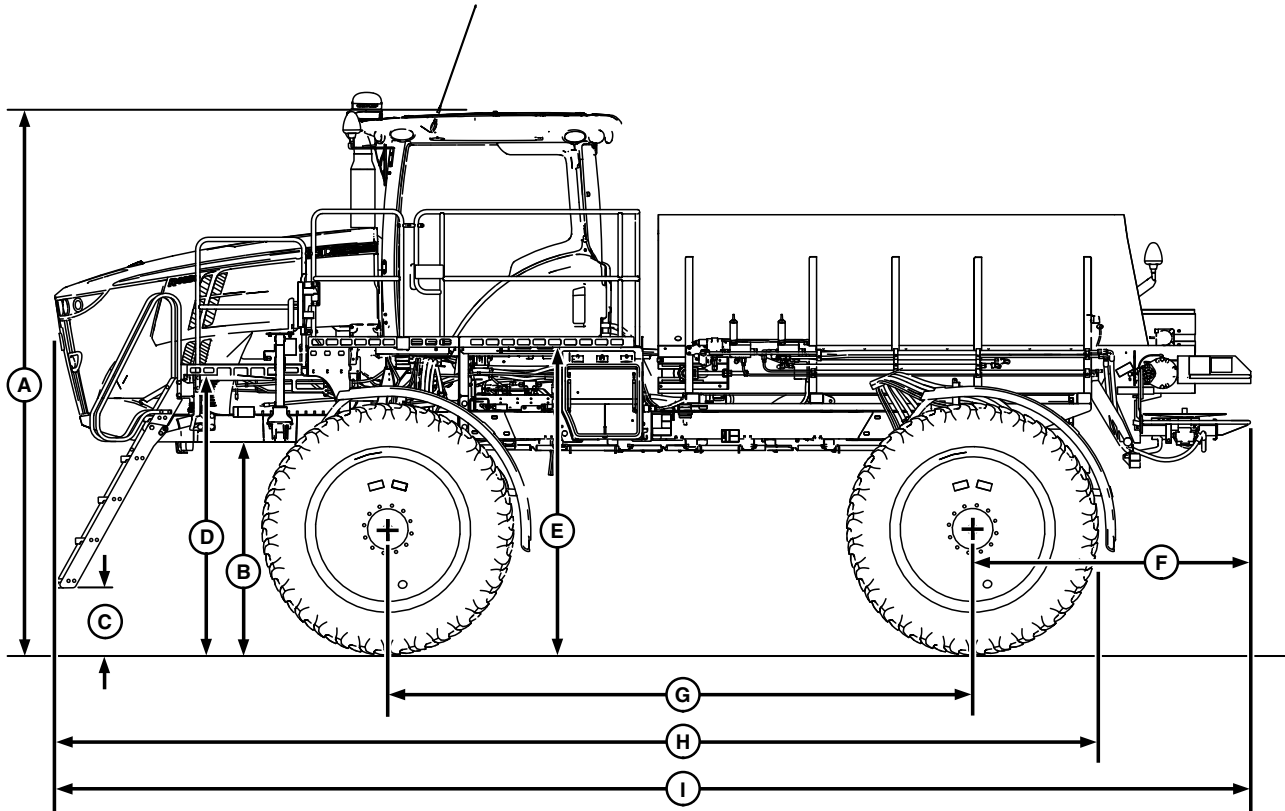
Unmounted Dimensions		
Item	Description	Measurement
A	Overall Length	4370 mm (172 in.)
B	Bottom Length	3960 mm (156 in.)
C	Inside Length	3350 mm (132 in.)
D	Height	1448 mm (57 in.)
E	Width	2438 mm (96 in.)
F	Second Product Bin Bottom Length	2120 mm (83.5 in.)
G	Second Product Bin Inside Length	1524 mm (60 in.)
H	Second Product Bin Height	1016 mm (40 in.)
I	Second Product Bin Inside Width	2324 mm (91.5 in.)

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CS12167,000027C -19-09MAY13-1/2

N95914—UN—27FEB12

Specifications



N103602—UN—02MAY13

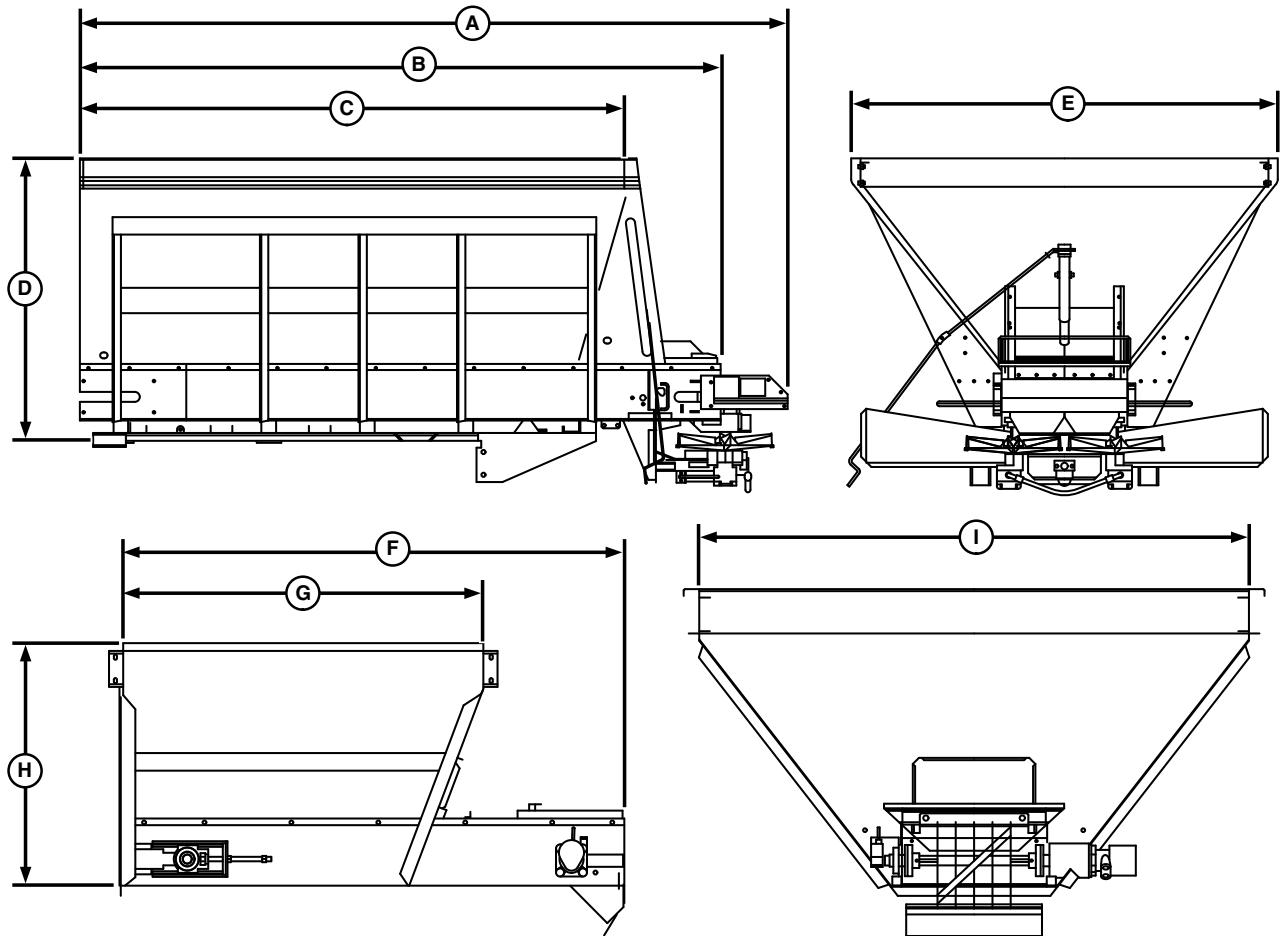
Dimensions ^a		
Item	Description	Measurement
A	Cab Height with Air Springs, Inflated	3918 mm (154.25 in.)
A	Cab Height with Air Springs, Deflated	3810 mm (150.0 in.)
B	Underframe Clearance	1448 mm (57.0 in.)
C	Bottom Of Ladder	533 mm (21.0 in.)
D	Front Platform Height	2013 mm (79.25 in.)
E	Top Platform	2235 mm (88.0 in.)
F	Center of Rear Tire to Rear Spinner Guard	2051 mm (80.75 in.)
G	Wheelbase	4300 mm (169.3 in.)
H	Front of Machine-to-Rear of Rear Tire ^b	7353 mm (289.5 in.)
I	Front of Machine-to-Rearmost Boom Point	6120 mm (241 in.)

^aNumbers shown are with springs inflated unless otherwise noted.

^bMeasured from front of hood

CS12167,000027C -19-09MAY13-2/2

Dimensions DN485



DN485 and Second Product Bin

N95913 —UN—13APR12

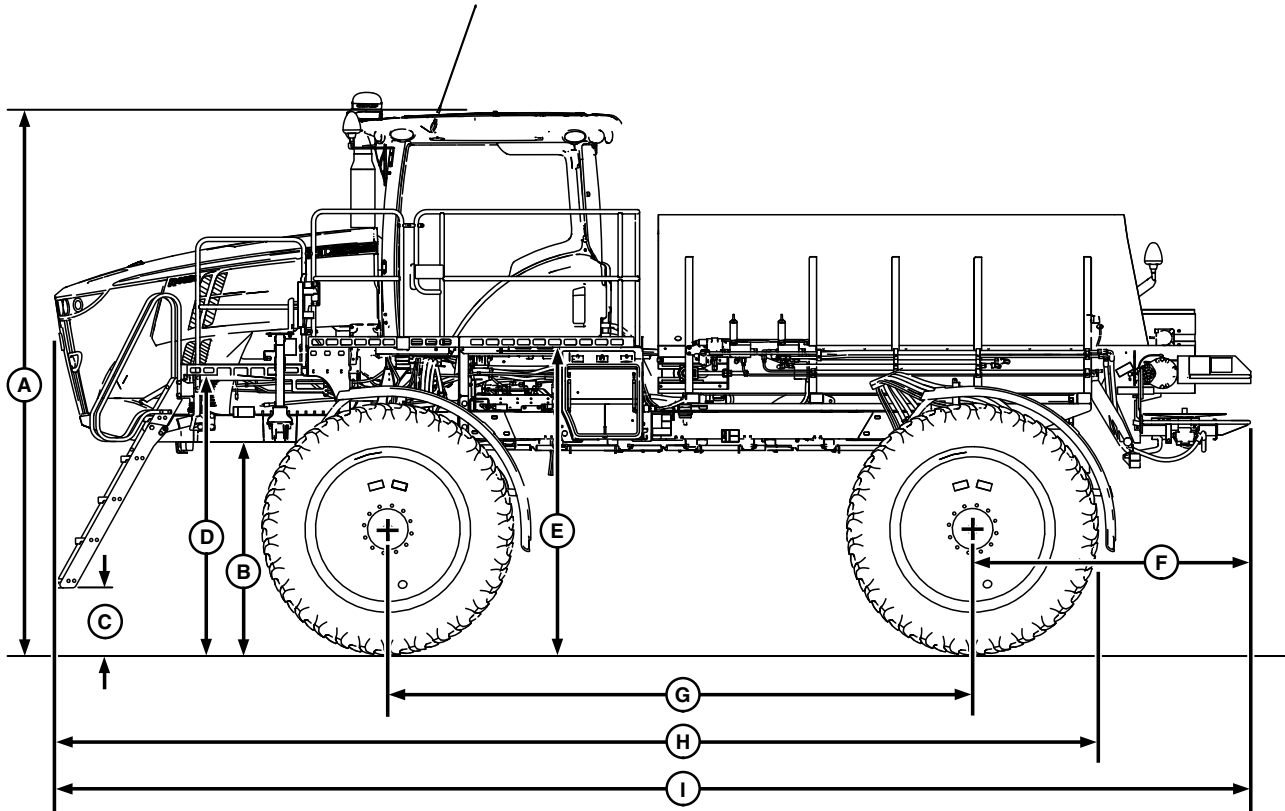
Unmounted Dimensions

Item	Description	Measurement
A	Overall Length	437 cm (172 in.)
B	Bottom Length	396 cm (156 in.)
C	Inside Length	335 cm (132 in.)
D	Height	170 cm (69 in.)
E	Width	305 cm (120 in.)
F	Second Product Bin Bottom Length	212 cm (83.5 in.)
G	Second Product Bin Inside Length	152.4 cm (60 in.)
H	Second Product Bin Height	129.5 cm (51 in.)
I	Second Product Bin Inside Width	292.9 cm (115.3 in.)

Continued on next page

CS12167,00004B4 -19-31OCT13-1/2

Specifications



N103602—UN—02MAY13

Dimensions ^a		
Item	Description	Measurement
A	Cab Height with Air Springs, Inflated	3886 mm (153 in.)
A	Cab Height with Air Springs, Deflated	3719 mm (146.4 in.)
B	Underframe Clearance	1189 mm (46.8 in.)
C	Bottom Of Ladder	375 mm (14.75 in.)
D	Front Platform Height	1966 mm (77.38 in.)
E	Top Platform	2153 mm (84.75 in.)
F	Center of Rear Tire to Rear Most Boom Point ^b	2051 mm (80.75 in.)
G	Wheelbase	3691 mm (170 in.)
H	Front of Machine-to-Rear of Rear Tire ^c	8180 mm (322 in.)
I	Front of Machine-to-Rearmost Boom Point	6120 mm (241 in.)

^aNumbers shown are with springs inflated unless otherwise noted.

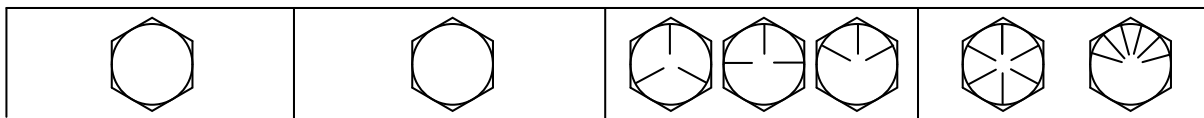
^bLift arms parallel to ground

^cMeasured from front of hood

CS12167,00004B4 -19-31OCT13-2/2

Unified Inch Bolt and Screw Torque Values

TS1671 —UN—01MAY03



Bolt or Screw Size	SAE Grade 1				SAE Grade 2 ^a				SAE Grade 5, 5.1 or 5.2				SAE Grade 8 or 8.2			
	Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c		Lubricated ^b		Dry ^c	
	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	3.7	33	4.7	42	6	53	7.5	66	9.5	84	12	106	13.5	120	17	150
													N·m	lb.-ft.	N·m	lb.-ft.
5/16	7.7	68	9.8	86	12	106	15.5	137	19.5	172	25	221	28	20.5	35	26
									N·m	lb.-ft.	N·m	lb.-ft.				
3/8	13.5	120	17.5	155	22	194	27	240	35	26	44	32.5	49	36	63	46
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
7/16	22	194	28	20.5	35	26	44	32.5	56	41	70	52	80	59	100	74
	N·m	lb.-ft.														
1/2	34	25	42	31	53	39	67	49	85	63	110	80	120	88	155	115
9/16	48	35.5	60	45	76	56	95	70	125	92	155	115	175	130	220	165
5/8	67	49	85	63	105	77	135	100	170	125	215	160	240	175	305	225
3/4	120	88	150	110	190	140	240	175	300	220	380	280	425	315	540	400
7/8	190	140	240	175	190	140	240	175	490	360	615	455	690	510	870	640
1	285	210	360	265	285	210	360	265	730	540	920	680	1030	760	1300	960
1-1/8	400	300	510	375	400	300	510	375	910	670	1150	850	1450	1075	1850	1350
1-1/4	570	420	725	535	570	420	725	535	1280	945	1630	1200	2050	1500	2600	1920
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2140	1580	2700	2000	3400	2500
1-1/2	990	730	1250	930	990	730	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For plastic insert or crimped steel type lock nuts, for stainless steel fasteners, or for nuts on U-bolts, see the tightening instructions for the specific application. Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Replace fasteners with the same or higher grade. If higher grade fasteners are used, tighten these to the strength of the original. Make sure fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

^aGrade 2 applies for hex cap screws (not hex bolts) up to 6 in. (152 mm) long. 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.

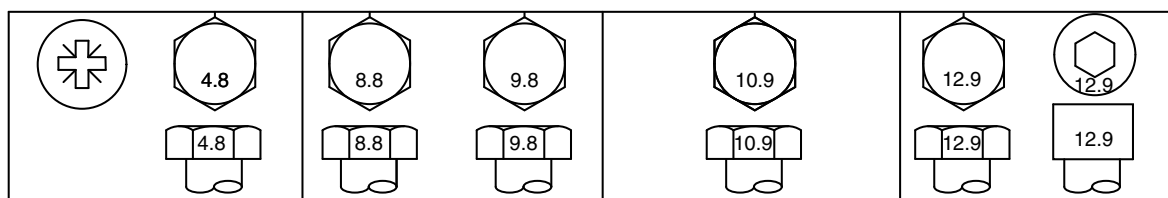
^b"Lubricated" means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or 7/8 in. and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

^c"Dry" means plain or zinc plated without any lubrication, or 1/4 to 3/4 in. fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ1 -19-12JAN11-1/1

Metric Bolt and Screw Torque Values

TS1670 —UN—01MAY03



Bolt or Screw Size	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^b		Lubricated ^a		Dry ^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	4.7	42	6	53	8.9	79	11.3	100	13	115	16.5	146	15.5	137	19.5	172
									N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.
M8	11.5	102	14.5	128	22	194	27.5	243	32	23.5	40	29.5	37	27.5	47	35
			N·m	lb.-ft.	N·m	lb.-ft.	N·m	lb.-ft.								
M10	23	204	29	21	43	32	55	40	63	46	80	59	75	55	95	70
	N·m	lb.-ft.														
M12	40	29.5	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	46	80	59	120	88	150	110	175	130	220	165	205	150	260	190
M16	100	74	125	92	190	140	240	175	275	200	350	255	320	235	400	300
M18	135	100	170	125	265	195	330	245	375	275	475	350	440	325	560	410
M20	190	140	245	180	375	275	475	350	530	390	675	500	625	460	790	580
M22	265	195	330	245	510	375	650	480	725	535	920	680	850	625	1080	800
M24	330	245	425	315	650	480	820	600	920	680	1150	850	1080	800	1350	1000
M27	490	360	625	460	950	700	1200	885	1350	1000	1700	1250	1580	1160	2000	1475
M30	660	490	850	625	1290	950	1630	1200	1850	1350	2300	1700	2140	1580	2700	2000
M33	900	665	1150	850	1750	1300	2200	1625	2500	1850	3150	2325	2900	2150	3700	2730
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2770	4750	3500

Torque values listed are for general use only, based on the strength of the bolt or screw. DO NOT use these values if a different torque value or tightening procedure is given for a specific application. For stainless steel fasteners or for nuts on U-bolts, see the tightening instructions for the specific application. Tighten plastic insert or crimped steel type lock nuts by turning the nut to the dry torque shown in the chart, unless different instructions are given for the specific application.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical property class. 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 fastener threads are clean and that you properly start thread engagement. When possible, lubricate plain or zinc plated fasteners other than lock nuts, wheel bolts or wheel nuts, unless different instructions are given for the specific application.

^a“Lubricated” means coated with a lubricant such as engine oil, fasteners with phosphate and oil coatings, or M20 and larger fasteners with JDM F13C, F13F or F13J zinc flake coating.

^b“Dry” means plain or zinc plated without any lubrication, or M6 to M18 fasteners with JDM F13B, F13E or F13H zinc flake coating.

DX,TORQ2 -19-12JAN11-1/1

Face Seal Fittings Assembly and Installation—All Pressure Applications

Face Seal O-Ring to Stud End Installation

1. Inspect the fitting surfaces. They must be free of dirt and/or defects.
2. Inspect the O-ring. It must be free of damage and/or defects.
3. Lubricate O-rings using system oil, and install into groove.
4. Push O-ring into groove so O-ring is not displaced during assembly.
5. Index angle fittings and tighten by hand pressing joint together to insure O-ring remains in place.
6. Tighten fitting or nut to torque value shown on the chart per dash size stamped on the fitting. DO NOT allow hoses to twist when tightening fittings.

Face Seal Adjustable Stud End O-Ring Installation

1. Back off lock nut (jam nut) and washer to full exposed turned down section of the fitting.
2. Install a thimble over the fitting threads to protect the O-ring from nicks.
3. Slide the O-ring over the thimble into the turned down section of the fitting.

4. Remove thimble.

Face Seal Straight Stud End O-Ring Installation

1. Install a thimble over the fitting threads to protect the O-ring from nicks.
2. Slide the O-ring over the thimble into the turned down section of the fitting.
3. Remove thimble.

Fitting Installation

1. Install fitting by hand until snug.
2. Position adjustable fittings by unscrewing the fitting no more than one turn.
3. Apply assembly torque per table.

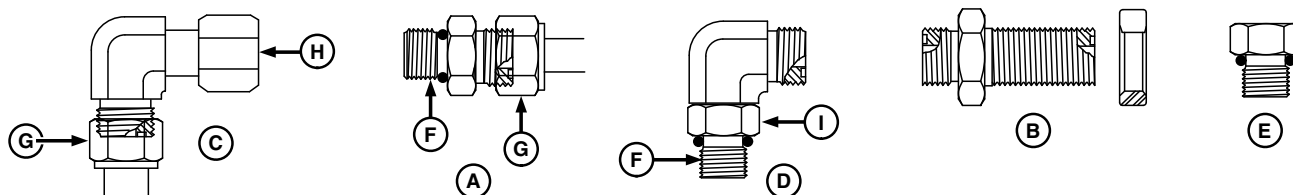
Assembly Torque

1. Use one wrench to hold the connector body and one wrench to tighten nut.
2. For a hydraulic hose, it may be necessary to use three wrenches to prevent twist; one on the connector body, one on the nut, and one on the body of the hose fitting.

OUO6092,000098D -19-07APR15-1/1

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures

N79757 —UN—13FEB08



A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut

C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow

E—Port Plug
F—Stud End
G—Tube Nut
H—Swivel Nut

I— Lock Nut

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressure-Below 27.6 MPA (4,000 PSI)

Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Jam Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A						
Metric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/Swivel Nut Torque		Jam Nut Hex Size	Jam Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque		Alu- minum or Brass Torque ^C	
mm	Da- sh Size	in.	mm	in.	mm	N-m	lb-ft	mm	N-m	lb-ft	mm	mm	mm	N-m	lb-ft	N-m	lb-ft
4	-2	0.125	3.18	—	—	—	—	—	—	—	M8 X 1	12	12	8	6	5	4
5	-3	0.188	4.76	—	—	—	—	—	—	—	M10 X 1	14	14	15	11	10	7
6	-4	0.250	6.35	9/16-18	17	24	18	22	32	24	M12 X 1.5	17	17	25	18	17	12
8	-5	0.312	7.92	—	—	—	—	—	—	—	M14 X 1.5	19	19	40	30	27	20
10	-6	0.375	9.53	11/16-16	22	37	27	27	42	31	M16 X 1.5	22	22	45	33	30	22
12	-8	0.500	12.70	13/16-16	24	50	37	30	93	69	M18 X 1.5	24	24	50	37	33	25
16	-10	0.625	15.88	1-14	30	69	51	36	118	87	M22 X 1.5	27	27	69	51	46	34
20	-12	0.750	19.05	1-3/16-12	36	102	75	41	175	129	M27 X 2	32	32	100	74	67	49
22	-14	0.875	22.23	1-3/16-12	36	102	75	41	175	129	M30 X 2	36	36	130	96	87	64
25	-16	1.000	25.40	1-7/16-12	41	142	105	46	247	182	M33 X 2	41	41	160	118	107	79
28	—	—	—	—	—	—	—	—	—	—	M38 x 2	46	46	176	130	117	87
32	-20	1.250	31.75	1-11/16-12	50	190	140	50	328	242	M42 X 2	50	50	210	155	140	103
38	-24	1.500	38.10	2-12	60	217	160	60	374	276	M48 X 2	55	55	260	192	173	128
50	-32	2.000	50.80	—	—	—	—	—	—	—	M60 X 2	65	65	315	232	210	155

^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

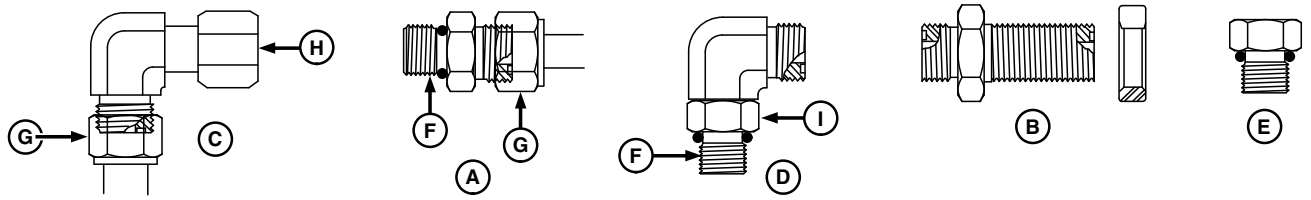
^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

^C These torques were established using steel plated connectors in aluminum and brass.

OUO6092,0000770 -19-07MAR12-1/1

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure Applications

N79757 —UN—13FEB08



A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut

C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow

E—Port Plug
F—Stud End
G—Tube Nut
H—Swivel Nut

I—Lock Nut

Metric Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure—Above 27.6 MPA (4,000 PSI), Working Pressure—41.3 MPA (6,000 PSI)

Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Jam Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A				
Met- ric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/Swivel Nut Torque		Jam Nut Hex Size	Jam Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque	
mm	Da- sh Siz- e	in.	mm	in.	mm	N·m	lb-ft	mm	N·m	lb-ft	mm.	mm	mm	N· m	lb-ft
4	-2	0.125	3.18	—	—	—	—	—	—	—	M8 X 1	12	12	8	6
5	-3	0.188	4.76	—	—	—	—	—	—	—	M10 X 1	14	14	15	11
6	-4	0.250	6.35	9/16-18	17	24	18	22	32	24	M12 X 1.5	17	17	35	26
8	-5	0.312	7.92	—	—	—	—	—	—	—	M14 X 1.5	19	19	45	33
10	-6	0.375	9.53	11/16-16	22	37	27	27	42	31	M16 X 1.5	22	22	55	41
12	-8	0.500	12.70	13/16-16	24	63	46	30	93	69	M18 X 1.5	24	24	70	52
16	-10	0.625	15.88	1-14	30	103	76	36	118	87	M22 X 1.5	27	27	100	74
20	-12	0.750	19.05	1-3/16-12	36	152	112	41	175	129	M27 X 2	32	32	170	125
22	-14	0.875	22.23	1-3/16-12	36	152	112	41	175	129	M30 X 2	36	36	215	159
25	-16	1.000	25.40	1-7/16-12	41	214	158	46	247	182	M33 X 2	41	41	260	192
28	—	—	—	—	—	—	—	—	—	—	M38 x 2	46	46	320	236
32	-20	1.250	31.75	1-11/16-12	—	286	211	50	328	242	M42 X 2	50	50	360	266
38	-24	1.500	38.10	2-12	—	326	240	60	374	276	M48 X 2	55	55	420	310

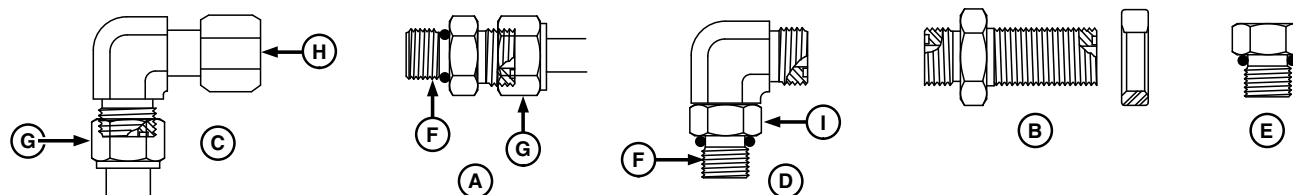
^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

OUC06092.0000771 -19-07MAR12-1/1

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressures

N79757 —UN—13FEB08



A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut

C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow

E—Port Plug
F—Stud End
G—Tube Nut
H—Swivel Nut

I—Lock Nut

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—Standard Pressure-Below 27.6 MPA (4,000 PSI)

Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Jam Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A							
Metric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/Sw- ivel Nut Torque		Jam Nut Hex Size	Jam Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque		Alu- min- um or Brass Torg- ue ^C		
mm	Da- sh Size	in.	mm	in.	in.	N- m	l- b-ft		N- m	l- b-ft	in.	in.	in.	N- m	l- b-ft	N- m	l- b-ft	
5	-3	0.188	4.78	—	—	—	—	—	—	—	3/8-24	5/8	9/16	12	9	8	6	
6	-4	0.250	6.35	9/16-18	11/16	24	18	13/16	32	24	7/16-20	5/8	5/8	16	12	11	8	
8	-5	0.312	7.92	—	—	—	—	—	—	—	1/2-20	3/4	11/16	24	18	16	12	
10	-6	0.375	9.53	11/16-16	13/16	37	27	1	42	31	9/16-18	3/4	3/4	37	27	25	18	
12	-8	0.500	12.70	13/16-16	15/16	50	37	1-1/8	93	69	3/4-16	7/8	15/16	50	37	33	25	
16	-10	0.625	15.88	1-14	1-1/8	69	51	1-5/16	118	87	7/8-14	1-1/16	1-1/16	69	51	46	34	
20	-12	0.750	19.05	1-3/16-12	1-3/8	102	75	1-1/2	175	129	1-1/16-12	1-1/4	1-3/8	102	75	68	50	
22	-14	0.875	22.23	1-3/16-12	—	102	75	—	175	129	1-3/16-12	1-3/8	1-1/2	122	90	81	60	
25	-16	1.000	25.40	1-7/16-12	1-5/8	142	105	1-3/4	247	182	1-5/16-12	1-1/2	1-5/8	142	105	95	70	
32	-20	1.25	31.75	1-11/16-12	1-7/8	190	140	2	328	242	1-5/8-12	1-3/4	1-7/8	190	140	127	93	
38	-24	1.50	38.10	2-12	2-1/4	217	160	2-3/8	374	276	1-7/8-12	2-1/8	2-1/8	217	160	145	107	
50.8	-32	2.000	50.80	—	—	—	—	—	—	—	2-1/2-12	2-3/4	2-3/4	311	229	207	153	

^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

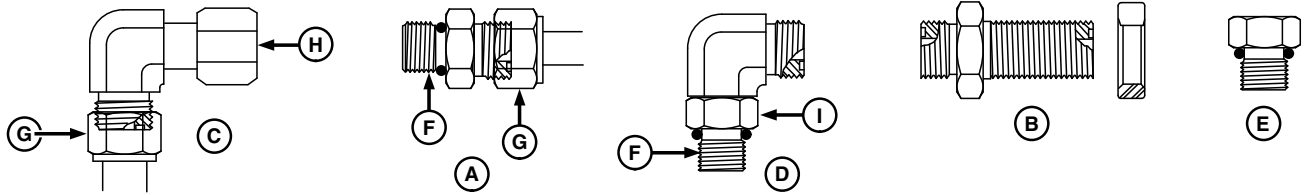
^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

^C These torques were established using steel plated connectors in aluminum and brass.

OUO6092,0000772 -19-07MAR12-1/1

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure Applications

N79757 —UN—13FEB08



A—Stud Straight and Tube Nut
B—Bulkhead Union and Bulkhead Lock Nut

C—90° Swivel Elbow and Tube Nut
D—90° Adjustable Stud Elbow

E—Port Plug
F—Stud End
G—Tube Nut
H—Swivel Nut

I—Lock Nut

SAE Face Seal and O-Ring Stud End Fitting Torque Chart—High Pressure - Above 27.6 MPA (4,000 PSI), Working Pressure-41.3 MPA (6,000 PSI)

Nominal Tube OD Hose ID				O-Ring Face Seal/ Tube Swivel Nut				Bulkhead Jam Nut Torque ^A			O-Ring Straight, Adjustable, and External Port Plug Stud Ends ^A				
Metric Tube OD	Inch Tube OD			Thread Size	Swivel Nut Hex Size	Tube Nut/Swivel Nut Torque		Jam Nut Hex Size	Jam Nut Torque		Thread Size	Straight Hex Size ^B	Adj Lock Nut Hex Size	Steel or Gray Iron Torque	
	mm	D- ash Siz- e	in.			mm	in.		N-m	lb-ft				N-m	lb-ft
5	-3	0.188	4.78	—	—	—	—	—	—	—	3/8-24	5/8	9/16	18	13
6	-4	0.250	6.35	9/16-18	11/16	24	18	13/16	32	24	7/16-20	5/8	5/8	24	18
8	-5	0.312	7.92	—	—	—	—	—	—	—	1/2-20	3/4	11/16	30	22
10	-6	0.375	9.53	11/16-16	13/16	37	27	1	42	31	9/16-18	3/4	3/4	37	27
12	-8	0.500	12.70	13/16-16	15/16	63	46	1-1/8	93	69	3/4-16	7/8	15/16	75	55
16	-10	0.625	15.88	1-14	1-1/8	103	76	1-5/16	118	87	7/8-14	1-1/16	1-1/16	103	76
20	-12	0.750	19.05	1-3/16-12	1-3/8	152	112	1-1/2	175	129	1-1/16-12	1-1/4	1-3/8	177	131
22	-14	0.875	22.23	1-3/16-12	—	152	112	—	175	129	1-3/16-12	1-3/8	1-1/2	231	170
25	-16	1.000	25.40	1-7/16-12	1-5/8	214	158	1-3/4	247	182	1-5/16-12	1-1/2	1-5/8	270	199
32	-20	1.25	31.75	1-11/16-12	1-7/8	286	211	2	328	242	1-5/8-12	1-3/4	1-7/8	286	211
38	-24	1.50	38.10	2-12	2-1/4	326	240	2-3/8	374	276	1-7/8-12	2-1/8	2-1/8	326	240

^A Tolerance is +15%, minus 20% of mean tightening torque unless otherwise specified.

^B The straight hex wrench sizes listed apply to connectors only and may not be the same as the corresponding plug of the same thread size.

OOU6092,0000773 -19-07MAR12-1/1

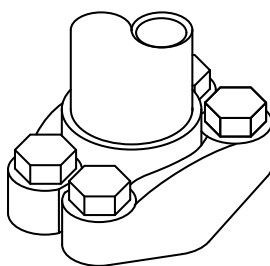
Four Bolt Flange Fittings Assembly and Installation—All Pressure Applications

1. Inspect the sealing surfaces for nicks or scratches, roughness or out-of-flat condition. Scratches cause leaks. Roughness causes seal wear. Out-of-flat causes seal extrusion. If these defects cannot be polished out, replace the component.
2. Install the correct O-ring (and back-up washer if required) into the groove using petroleum jelly to hold it in place.
3. For split flange; loosely assemble split flange halves, being sure that the split is centrally located and perpendicular to the port. Hand tighten cap screws to hold parts in place. Do not pinch O-ring.
4. For single piece flange; put hydraulic line in the center of the flange and install four cap screws. With the flange centrally located on the port, hand tighten cap screws to hold it in place. Do not pinch O-ring.
5. For both single piece flange and split flange, be sure the components are properly positioned and cap screws are hand tight. Tighten one cap screw, then tighten the diagonally opposite cap screw. Tighten the two remaining cap screws. Tighten all cap screws within the specified limits shown in the chart.

DO NOT use air wrenches. DO NOT tighten one cap screw fully before tightening the others. DO NOT overtighten.

OUO6092,0000774 -19-16FEB12-1/1

SAE Four Bolt Flange Cap Screw Torque Values—Standard Pressure Applications



H70423 —UN—30NOV01

SAE Four Bolt Flange Cap Screw Torque Values—27,600 KPA (4,000 PSI) Pressure Applications

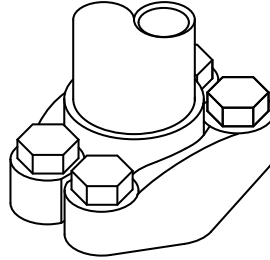
Nominal Flange Size	Screw Size ^{a,b}	Torque			
		Newton Meters		Foot Pounds	
		Min	Max	Min	Max
1/2	5/16-18 UNC	20	31	15	23
3/4	3/8-16 UNC	28	54	21	40
1	3/8-16 UNC	37	54	27	40
1-1/4	7/16-14 UNC	47	85	35	63
1-1/2	1/2-13 UNC	62	131	46	97
2	1/2-13 UNC	73	131	54	97
2-1/2	1/2-13 UNC	107	131	79	97
3	5/8-11 UNC	187	264	138	195
3-1/2	5/8-11 UNC	158	264	117	195
4	5/8-11 UNC	158	264	117	195
5	5/8-11 UNC	158	264	117	195

^aJDM A17D, SAE Grade 5 or better cap screws with plated hardware.

^b1.5.1.2 Lock washers are permissible but not recommended.

OUO6092,0000775 -19-16FEB12-1/1

SAE Four Bolt Flange Cap Screw Torque Values—High Pressure Applications



H70423 —UN—30NOV01

SAE Four Bolt Flange Cap Screw Torque Values—41,400 KPA (6,000 PSI) Pressure Applications					
Nominal Flange Size	Screw Size ^{a,b}	Torque			
		Newton Meters		Foot Pounds	
		Min	Max	Min	Max
1/2	5/16-18 UNC	20	31	15	23
3/4	3/8-16 UNC	34	54	25	40
1	7/16-14 UNC	57	85	42	63
1-1/4	1/2-13 UNC	85	131	63	63
1-1/2	5/8-11 UNC	159	264	117	195
2	3/4-10 UNC	271	468	200	345

^aJDM A17D, SAE Grade 5 or better cap screws with plated hardware.

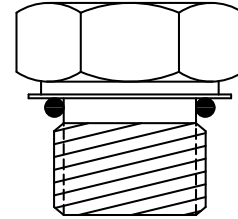
^b1.5.1.2 Lock washers are permissible but not recommended.

OUO6092,0000776 -19-07MAR12-1/1

External Hexagon Port Plug Torque Chart

Port or Stud End Thread Size ^a	Torque +15%/-20%
M8 x 1	10 N·m (89 lb-in.)
M10 x 1	17 N·m (150 lb-in.)
M12 x 1,5	28 N·m (20.6 lb-ft)
M14 x 1,5	39 N·m (28.7 lb-ft)
M16 x 1,5	48 N·m (35.4 lb-ft)
M18 x 1,5	60 N·m (44.2 lb-ft)
M20 x 1,5	60 N·m (44.2 lb-ft)
M22 x 1,5	85 N·m (62.7 lb-ft)
M27 x 2	135 N·m (99.6 lb-ft)
M30 x 2	165 N·m (121.7 lb-ft)
M33 x 2	235 N·m (173.3 lb-ft)
M38 x 2	245 N·m (180.7 lb-ft)
M42 x 2	260 N·m (191.8 lb-ft)
M48 x 2	290 N·m (213.9 lb-ft)
M60 x 2	330 N·m (243.4 lb-ft)

^aPort to JDS-G173.1; stud end to JDS-G173.3.



H70356 —UN—30NOV01

OUO6092,0000777 -19-16FEB12-1/1

The EC Declaration of Conformity applies only to machines which bear the CE mark

EC Declaration of Conformity

Highway Equipment Company, Inc.
1330 76th Ave. SW
Cedar Rapids, Iowa USA 52404
Phone: 319-363-8281
www.highwayequipment.com

The person named below declares that

Machine type: Hopper type solid fertilizer spreader/distributor
Model: New Leader DN456 or DN485 for John Deere 4 Series Sprayer chassis

fulfills all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	Certification Method
Machinery Directive	2006/42/EC	Self certified, per Article 5 of the Directive
Electromagnetic Compatibility Directive	2004/108/EC	Self certified, per Annex II of the Directive

Name and address of the person in the European community authorized to compile the technical construction file:

Brigitte Birk
John Deere GmbH & Co. KG
Mannheim Regional Center
John Deere Strasse 70
68163 Mannheim, Germany
EUConformity@johndeere.com

Place of declaration: Cedar Rapids, Iowa U.S.A.
Date of declaration: May 14, 2013
Manufacturing unit: Highway Equipment Company, Inc

Name: Michael Podoll
Title: Chief Engineer



N84331—UN—15APR09

CS12167,0000543 -19-30JAN14-1/1

The EC Declaration of Conformity applies only to machines which bear the CE mark

EC Declaration of Conformity

Highway Equipment Company, Inc.
1330 76th Ave. SW
Cedar Rapids, Iowa USA 52404
Phone: 319-363-8281
www.highwayequipment.com

The person named below declares that

Machine type: Hopper type solid fertilizer spreader/distributor box insert

Model: New Leader Second Product Bin for John Deere DN456 or DN485 hopper type solid fertilizer spreader/distributor

fulfills all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	Certification Method
Machinery Directive	2006/42/EC	Self certified, per Article 5 of the Directive
Electromagnetic Compatibility Directive	2004/108/EC	Self certified, per Annex II of the Directive

Name and address of the person in the European community authorized to compile the technical construction file:

Brigitte Birk
John Deere GmbH & Co. KG
Mannheim Regional Center
John Deere Strasse 70
68163 Mannheim, Germany
EUConformity@johndeere.com

Place of declaration: Cedar Rapids, Iowa U.S.A.

Name: Michael Podoll

Date of declaration: May 14, 2013

Title: Chief Engineer

Manufacturing unit: Highway Equipment Company, Inc



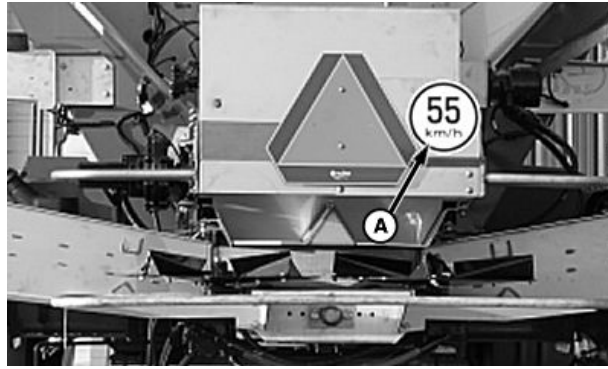
N84331 —UN—15APR09

CS12167,0000544 -19-30JAN14-1/1

Speed Limit Decal

The speed limit decal (A) is used to designate the maximum ground speed for which a machine has been designed to operate or can be driven on public roads. Know your local or national maximum transport speed limit before transporting the machine.

A—Speed Limit Decal



Speed Limit Decal

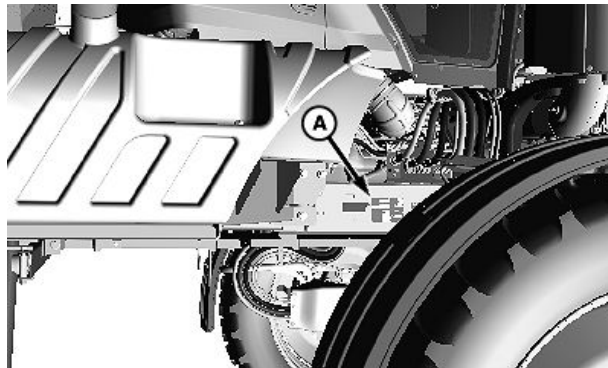
OUO6092,00007B3 -19-19MAR12-1/1

N97482—UN—13APR12

Chassis CE Plate Location

CE plate (A) is located on right-hand side of frame.

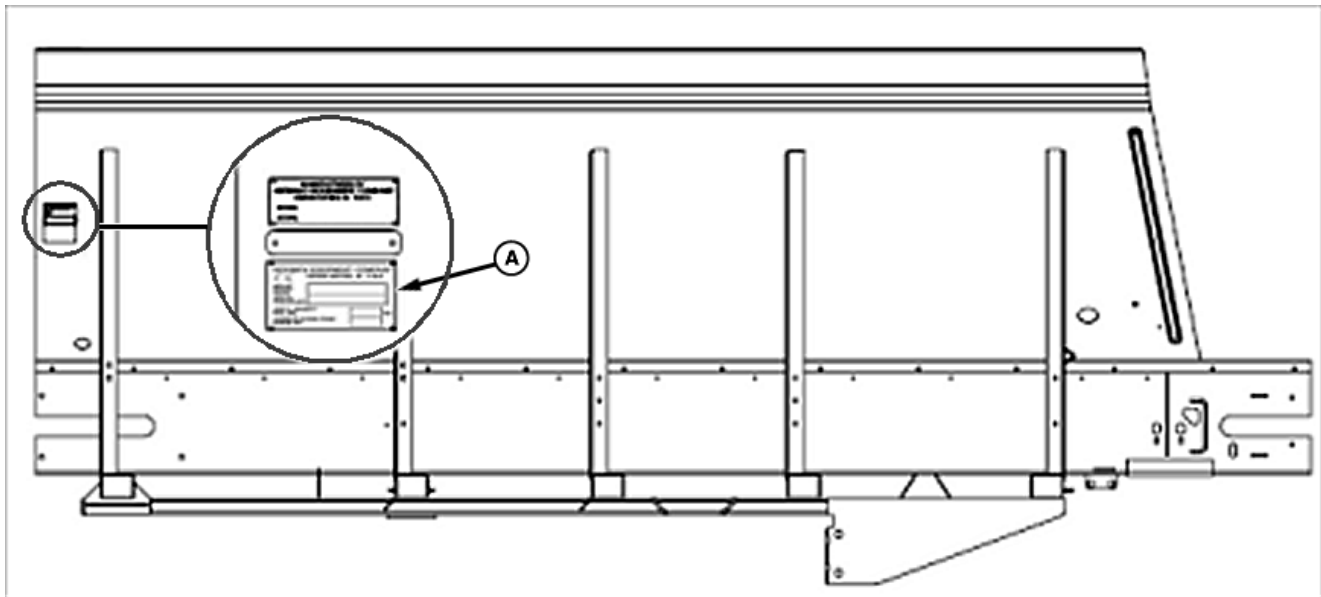
A—CE Plate



CS12167,00002AE -19-26APR13-1/1

N101314—UN—18DEC12

Dry Spinner Spreader CE Plate Location



A—CE Plate

CE plate (A) is located on left-hand side of spreader body.

CS12167,0000360 -19-26APR13-1/1

N102386—UN—21MAR13

Eurasian Economic Union

This information applies only to products which bear the EAC conformity mark of the Eurasian Economic Union member states.

Manufacturer:

Deere & Company, Moline, Illinois U.S.A.

Name of the authorized representative in the Eurasian Economic Union:

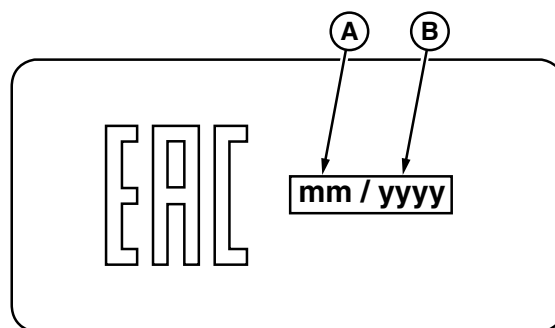
Limited Liability Company
"John Deere Rus"

Address of the authorized representative:

142050, Russia, Moscow region, Domodedovo district,
Domodedovo, Beliye Stolbi micro district, vladenye
"Warehouse 104", Building 2

For technical support, contact your dealer.

Date of manufacture is denoted by the product marking on or near the serial number plate.



EAC Marking

A—Month of Manufacture

B—Year of Manufacture

OUO6092,00009DB -19-31JUL15-1/1

TS1736—UN—03OCT14

Identification Numbers

Copy these pages to record component serial numbers. This will help when acquiring service parts.

The product identification number (A) is on front left-hand side of spreader box.

Product Identification Number

A—Product Identification Number



CS12167,00002AF -19-18DEC12-1/1

N97359—UN—13APR12

Interpret the Serial Number of Your Machine - 17 digits PIN

Interpreting the Serial Number of Your Machine		
1	World Manufacturer Code	XF— Manufactured for John Deere Portfolio Extensions
2	Machine model	
3	Model Identifier Suffix	Calculated using the other 16 digits
4	Check Letter	A, B, C, D... (According to JDS G139)
5	Year of manufacture	According to the Year of manufacture table
6	Additional Information	
7	Sequential Manufacturing Serial Number	000001, 000127....

Each model has its own "sequential number". The sequential number restarts at 000001 with the first machine produced each year.

1XFDN45XAE0123456

Each model has its "Serial code of Machine". This code will change whenever there is a significant change of the machine's configuration.

CS12167,00002B1 -19-15MAY13-1/1

N103539—UN—30APR13

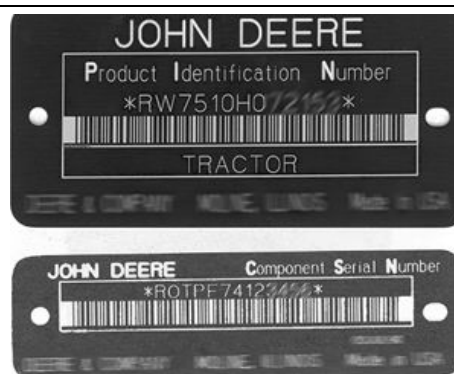
Year of Production Table (Digit 5)

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

OUO6092,000077F -19-16FEB12-1/1

Keep Proof of Ownership

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

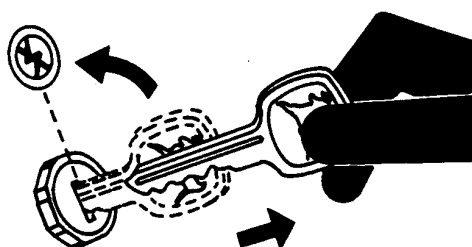


TS1680—UN—09DEC03

OUO6092,0000780 -19-16FEB12-1/1

Keep Machines Secure

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.



TS230—UN—24MAY89

OUO6092,0000781 -19-16FEB12-1/1

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John Deere Service Keeps You On The Job

John Deere Parts

We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.



DX,IBC,A -19-04JUN90-1/1

TS100 —UN—23AUG88

The Right Tools

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.



DX,IBC,B -19-04JUN90-1/1

TS101 —UN—23AUG88

Well-Trained Technicians

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!



DX,IBC,C -19-04JUN90-1/1

TS102 —UN—23AUG88

Prompt Service

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances: see us, depend on us.

JOHN DEERE SERVICE SUPERIORITY: We'll be around when you need us.



DX,IBC,D -19-04JUN90-1/1

TS103 —UN—23AUG88

