



See & Spray Premium



JOHN DEERE



OPERATOR'S MANUAL

**R4030, R4038, R4044, R4045, R4060, 408R, 410R,
412R, 612R and 616R Self-Propelled Sprayers**

OMKK105684 08JUN2026 (ENGLISH)

John Deere Precision Upgrades
North America
PRINTED IN U.S.A.



Introduction

Foreword

THANK YOU for purchasing a John Deere product.

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

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

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

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the product or implement will travel when going forward.

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

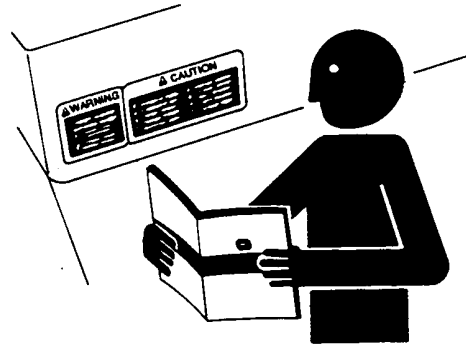
WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received at time of purchase.

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

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

DX,IFC5E-19-05NOV25

John Deere Is at Your Service



TS201—UN—15APR13

Customer satisfaction is important to John Deere.

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

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

DX,IFC,JDS-19-30SEP25

Company Info



JOHN DEERE

CQ291459—UN—23JAN12

Deere & Company

One John Deere Place
Moline, IL 61265, USA
www.deere.com

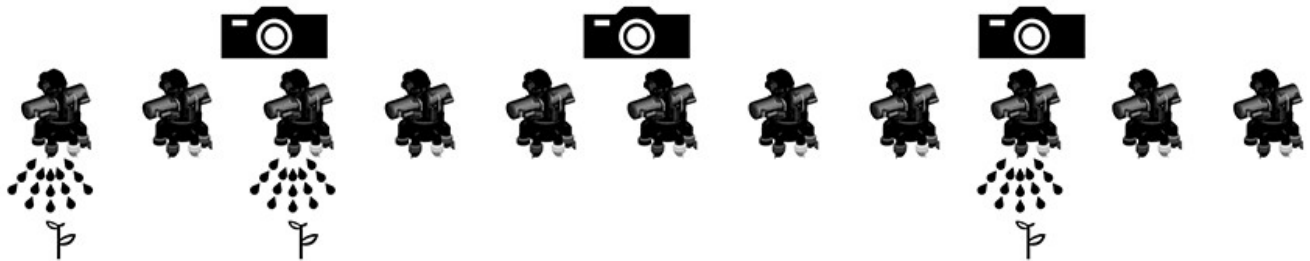
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Trademarks

Trademarks	
CommandCenter™	Trademark of Deere & Company
ExactApply™	Trademark of Deere & Company
Erase™	Trademark of Precision Laboratories, LLC
Fluid Film®	Trademark of Eureka Chemical Company
Incide-Out™	Trademark of Precision Laboratories, LLC
John Deere	Trademark of Deere & Company
SprayMaster™	Trademark of Deere & Company
See & Spray™	Trademark of Deere & Company
TerrainCommand™ Pro	Trademark of Deere & Company
TerrainControl™ Pro	Trademark of Deere & Company

WZ,TRADEMARK,R900i,OM-19-08OCT25

See & Spray Premium



See & Spray System

N153040—UN—02NOV20

Welcome to the See & Spray Premium system offered by John Deere.

See & Spray Premium is a row crop or fallow application solution to target weeds from crops, or green on green.

The image-processing system can identify weeds from crop within the processed image. After a target is identified and the sensitivity threshold set by the operator is exceeded, the system commands the associated ExactApply nozzle to "ON" at 100% duty cycle when a weed is detected. Throughout the remainder of this manual, "weeds" will be referred to as a "target."

Any use regarded as noncompliant with its purpose includes:

- Improper use of agriculture chemicals, 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.

AFBDT7W,1760638228735-19-16OCT25

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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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Safety

Recognize Safety Information



T81389—UN—28JUN13

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

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words



▲ WARNING

▲ CAUTION

TS187—19—30SEP88

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

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

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

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

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

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

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

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

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

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

DX,READ-19-16MAR26

Spanish Safety Signs and Operator's Manual

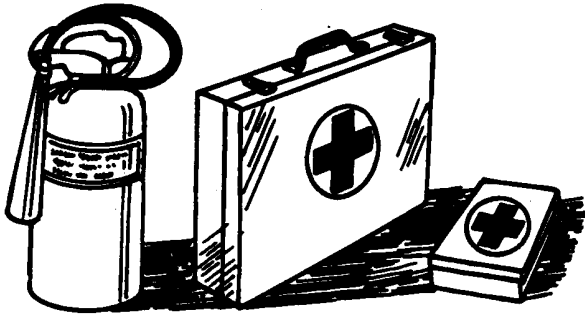


TS201—UN—15APR13

Spanish versions of the Operator's Manual and safety signs are available for this machine via regular spare part channels.

OUO6075,0000145-19-18NOV25

Prepare for Emergencies



TS291—UN—15APR13

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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

DX,FIRE2-19-03MAR93

Protect Against Noise



TS207—UN—23AUG88

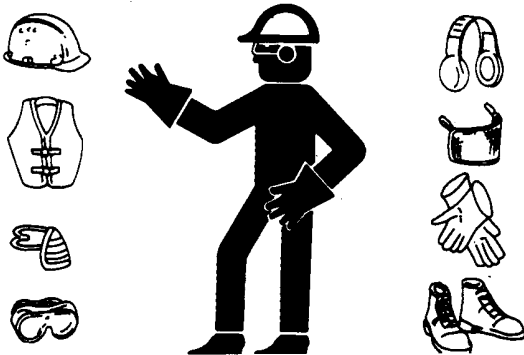
There are many variables that affect the sound level range, including machine configuration, condition and maintenance level of the machine, ground surface, operating environmental, duty cycles, ambient noise, and attachments.

Exposure to loud noise can cause impairment or loss of hearing.

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

DX,NOISE-19-03OCT17

Wear Protective Clothing



TS206—UN—15APR13

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

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

DX,WEAR2-19-03MAR93

Practice Safe Maintenance



TS218—UN—23AUG88

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

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

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

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

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

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

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

DX,SERV-19-20JAN26

Handle Electronic Components and Brackets Safely



TS249—UN—23AUG88

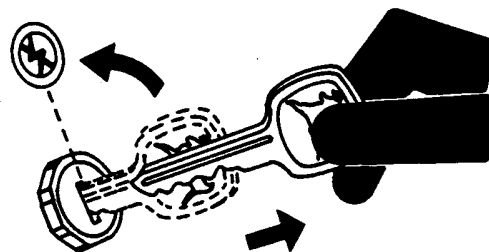
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

If installing or servicing a RTK base station on a tower or other tall structure, use a certified climber.

If installing or servicing a global positioning receiver mast used on an implement, use proper lifting techniques and wear proper protective equipment. The mast is heavy and can be awkward to handle. Two people are required when mounting locations are not accessible from the ground or from a service platform.

DX,WW,RECEIVER-19-24AUG10

Park Machine Safely



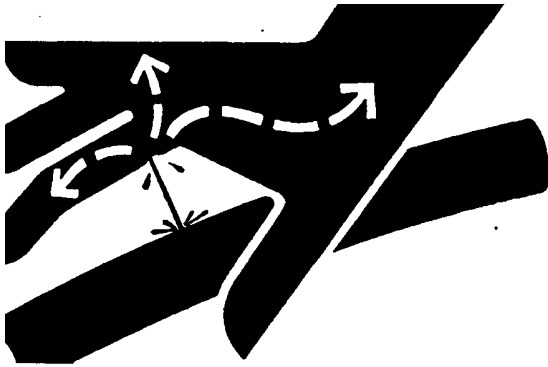
TS230—UN—24MAY89

Before working on the machine:

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

DX,PARK-19-25NOV25

Avoid High-Pressure Fluids



X9811—UN—23AUG88

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

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

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

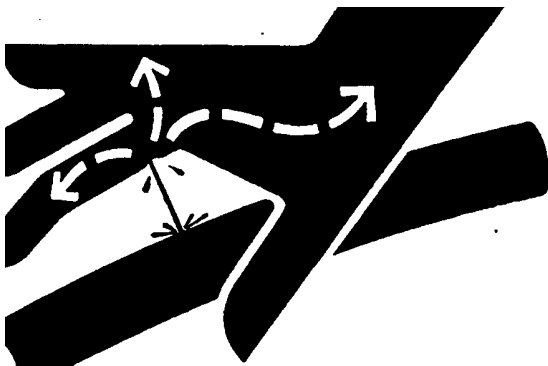
Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

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

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

DX,FLUID-19-16MAR26

Check Hydraulic Hoses



X9811—UN—23AUG88

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

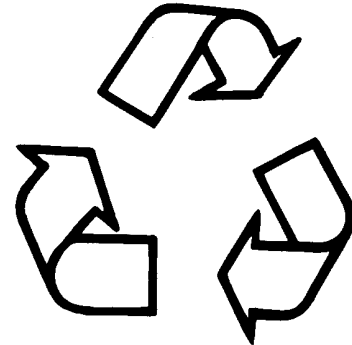
Escaping fluid under pressure can penetrate skin causing serious injury. Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.

If an accident occurs, see a doctor immediately. Any

fluid injected into skin must be surgically removed within a few hours or gangrene can result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

NXXN,9930,HYD-19-01JUN26

Decommissioning — Proper Recycling and Disposal of Fluids and Components



TS1133—UN—15APR13

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

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

appropriately. Government regulations may require a certified service center to recover and recycle air conditioning refrigerants which could damage the atmosphere if allowed to escape.

- Evaluate recycling options for tires, metal, plastic, glass, rubber, and electronic components which may be recyclable, in part or completely.
- Contact your local environmental or recycling center, or your John Deere dealer for information on the proper way to recycle or dispose of waste.

DX,DRAIN-19-01JUN15

Handle Chemical Products Safely



TS1132—UN—15APR13

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

Service Spray Equipment Safely

CAUTION: Injection system can contain hazardous material which can cause serious injury or death to you or others. Wear protective clothing, eye wear, and gloves. Do not drain solution onto the ground. Drain into a container.

Before performing any service activity:

- 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)
- Drain Solution Tank (see Draining Solution Tank in the machine operator's manual)
- Rinse wet system (see Operate Rinse System (Rinsing Solution Tank and Boom) or Using Load Station Rinse in the machine operator's manual)
- Drain Direct Inject Chemical Tanks (see Drain Chemical Tanks in the Filling and Draining section). *Direct Inject and See & Spray are not compatible.*
- Rinse Direct Injection System (see System Rinse section). *Direct Inject and See & Spray are not compatible.*
- Relieve Boom Pressure (see Relieving Boom Pressure in the Operating section)

OUO6435,00005F3-19-05JUN26

Use Proper Tools



TS779—UN—08NOV89

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

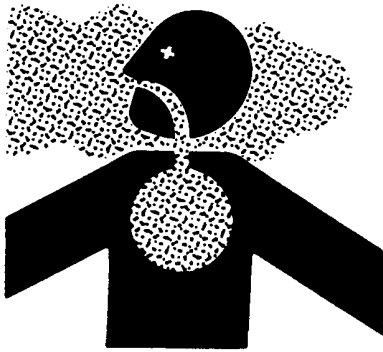
Use power tools only to loosen threaded parts and fasteners.

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

Use only service parts meeting John Deere specifications.

DX,REPAIR-19-17FEB99

Work In Ventilated Area

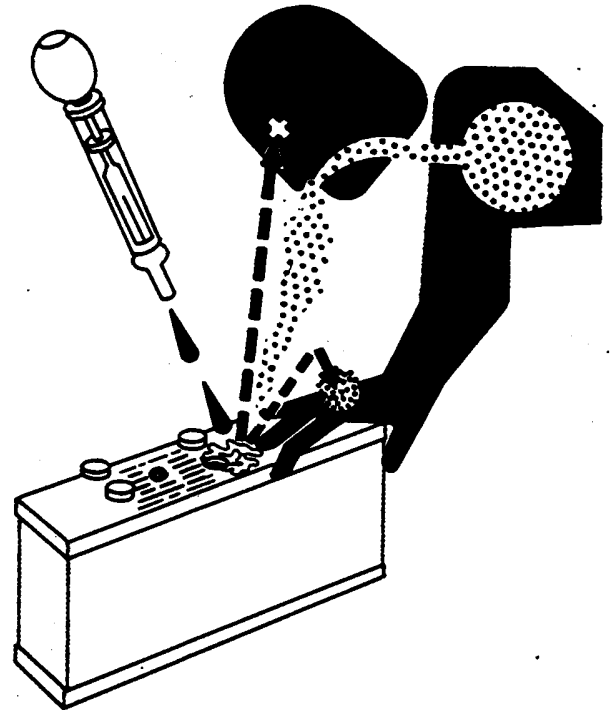


TS220—UN—15APR13

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.

DX,AIR-19-17FEB99



TS203—UN—23AUG88

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:

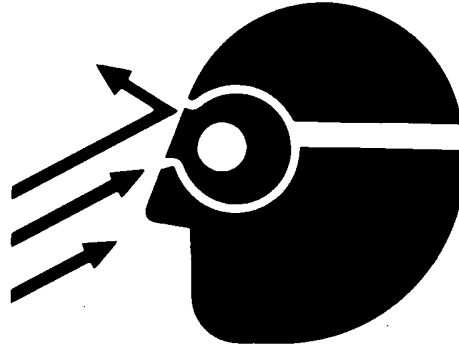


TS204—UN—15APR13

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.**

DX,WW,BATTERIES-19-02DEC10



TS266—UN—23AUG88
AG,OOU6043,83-19-28JUL99

Service Accumulator Systems Safely



TS281—UN—15APR13

Escaping fluid or gas from pressurized hydraulic accumulator systems can cause serious injury. Extreme heat can cause the accumulator to burst, and pressurized lines can be accidentally cut. Do not weld or use a torch near a pressurized accumulator or pressurized line.

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

Accumulators cannot be repaired.

DX,WW,ACCLA-19-15APR03

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.

Operator Ability

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

DX,ABILITY-19-07DEC18

Working Area

The working area is defined and required as follows:

- an area of 1 meter around the machine for preparation of the spraying liquid (filling work) and cleaning of the spraying 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 preparation of the spraying liquid and cleaning of the sprayer takes place
- the "maneuvering zone" of the components of the sprayer, and in particular a 1 meter zone around the machine as a whole and the area required to fold out the spray booms

TB90758,00018E9-19-11MAR15

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 multi-function lever engaged.

DO NOT operate close to a ditch or creek.

DO NOT fold or unfold boom near overhead wires.

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 multi-function lever position.

Keep hands, feet, and clothing away from moving parts.

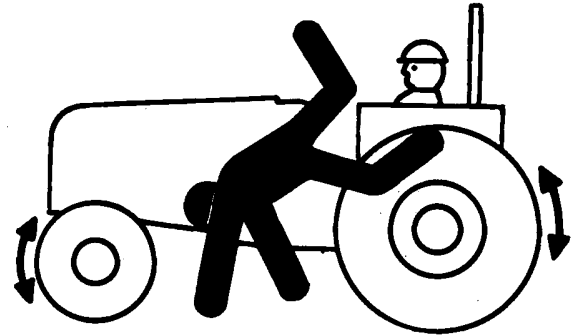
Wear relatively tight and belted clothing to prevent from being caught on some part of the machine.

TB90758,0001930-19-24MAR15

lighting and marking. Keep lighting and marking visible, clean, and in good working order. Replace or repair lighting and marking that has been damaged or lost.

DX,FLASH-19-07JUL99

Keep Riders Off Machine



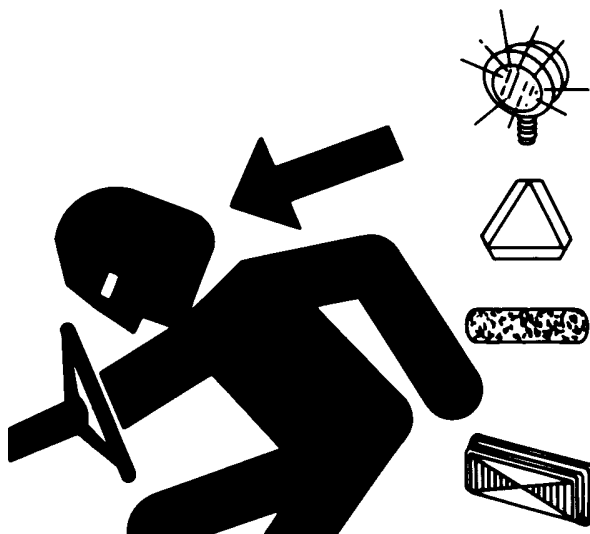
TS290—UN—23AUG88

Only allow the operator on the machine. Keep riders off.

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

DX,RIDER-19-03MAR93

Use Safety Lights and Devices



TS951—UN—12APR90

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

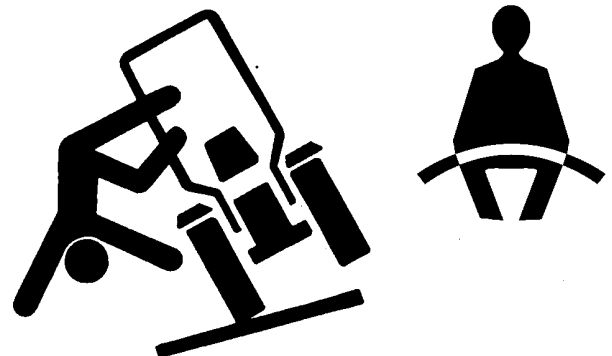
Use headlights, flashing warning lights, and turn signals day and night. Follow local regulations for equipment

Machine fitted with Instructional Seat

On machines equipped with an instructional seat, one rider is permitted for providing instructions to the operator. Refer to Use Seat Belt Properly in this section.

WZ00232,00001DD-19-03AUG09

Use Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

- Hold the latch and pull the seat belt across the body.
- Insert the latch into the buckle. Listen for a click.

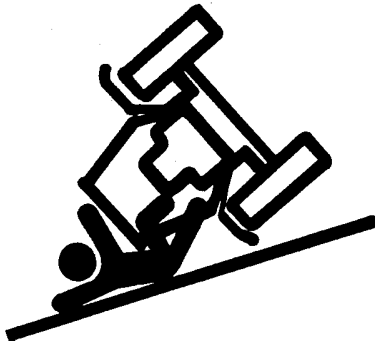
- Tug on the seat belt latch to make sure that the belt is securely fastened.
- Snug the seat belt across the hips.

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 a John Deere dealer or other service provider for more information.

OOU6092,00009E7-19-15OCT25

Use Caution On Hillsides



RW13093—UN—07DEC88

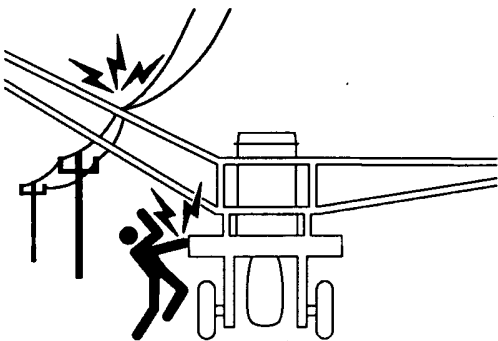
Avoid holes, ditches, and obstructions which may cause machine roll-over, especially on hillsides. Avoid sharp turns on hills.

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

Stay off slopes that are too steep for operation.

OOU6092,000079C-19-28FEB12

Transport and Operate Safely



N44191—UN—27APR92

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, boom operating height and boom folding height of your machine.

Perform a complete assessment of the field before performing any spraying operations to decide the best working method and boom folding/unfolding operations.

Stop slowly to avoid "nose diving".

Keep SMV emblem and reflectors clean and in place.

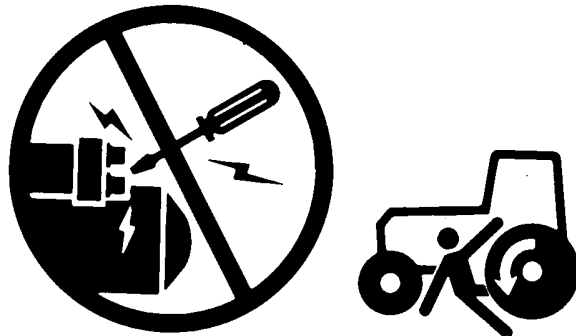
Do not exceed maximum transport speed specified in the operator manual.

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.

OOU6092,0000377-19-14MAY10

Prevent Machine Runaway



TS177—UN—11JAN89

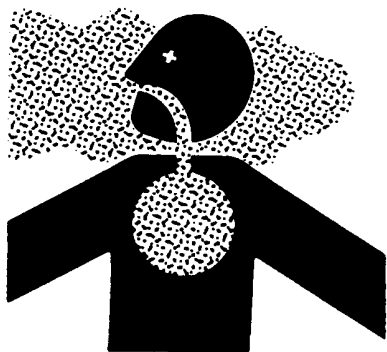
Avoid possible injury or death from machinery runaway.

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.

DX,BYPAS1-19-29SEP98

Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471

A34471—UN—11OCT88

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

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

Reduce risk of exposure and injury:

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

Avoid Exposure To Chemicals



TS220—UN—15APR13



TS272—UN—23AUG88

⚠ CAUTION: Injection system can contain hazardous material which can cause serious injury or death to you or others. Wear protective clothing, eye wear, and gloves. Do not drain solution onto the ground. Drain into a container.

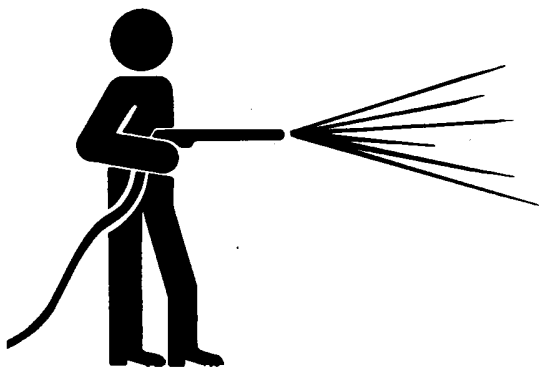
DO NOT RELY ONLY ON THIS CAB , CAB PRESSURE INDICATOR, OR CAB AIR FILTERS TO PROTECT AGAINST CHEMICAL EXPOSURE.

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 application
- 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)
- 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

CS12167,000073C-19-05JUN26

Clean Vehicle of Hazardous Chemicals, Including Pesticides



T6642EJ—UN—18OCT88

⚠ 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-19-18JAN21

Non-Permissible Use

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

Spraying or atomization of substances other than crop protection chemicals and/or liquid fertilizers.

Use of Direct Injection with See & Spray Premium is not compatible. Crop damage from over or under application of product may occur.

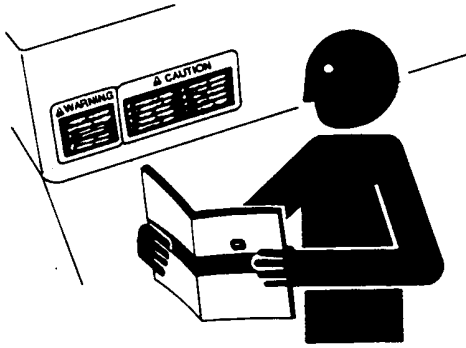
Use of the tank as a storage medium for substances not intended for crop protection or fertilization purposes.

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

OUC6092,1746548931143-19-06MAY25

Safety Signs

Replace Safety Signs



TS201—UN—15APR13

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

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

DX,SIGNS-19-19MAR26

CommandCenter Display Information

Generation 4 and G5 Displays

For additional information on display hardware and software functionality, reference the Display Operator's Manual and the Help Center application on the display. To obtain a copy of the Operator's Manual, contact your dealer, use the Help Center application on the display, or visit techpubs.deere.com.

DX,PC,DISPLAY,REFERENCE-19-23JUN23

System Overview

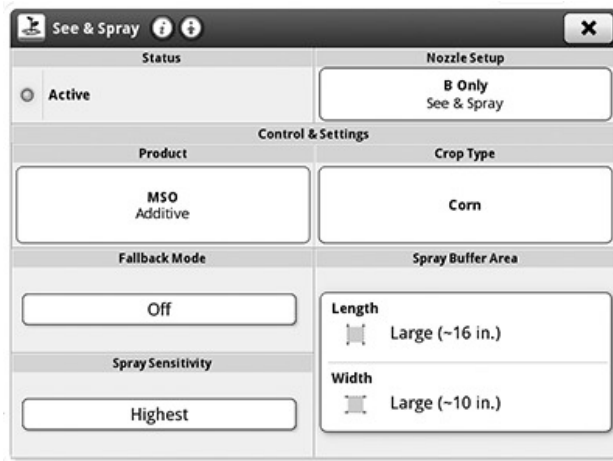
See & Spray Premium Nozzle Control System

See & Spray Premium is a row crop or fallow application solution to target weeds from crops, or green on green.

The vision-processing system can identify weeds from crop within the processed image. After a target is identified and the sensitivity threshold set by the operator is exceeded, the system commands the associated ExactApply nozzle to ON at 100% duty cycle when a weed is detected. Throughout the remainder of this manual, “weeds” will be referred to as a “target.”

The system can be set up to have only nozzle B apply product when a target is recognized, or it can have nozzle A apply a traditional broadcast of product using the ExactApply system and activate nozzle B when a target is recognized using the See & Spray Premium system.

NOTE: Nozzle B has limited ExactApply functionality when using the See & Spray Premium system. Turn compensation and pulsing are disabled for nozzle B when the See & Spray Premium system is active.



N163861—UN—06FEB23

The See & Spray Premium application on the display provides the operator with operation parameters, system health, and status information. The operator receives a notification on the display when the system inputs are out of range for optimal system performance.

The system application is composed of four user-configurable settings:

(Details for each configurable setting is described on the following pages.)

- Fallback mode
- Spray sensitivity
- Spray buffer

ouo6064,1693936450046-19-28MAY26

Fallback Mode

Determines nozzle B application behavior when a confidence value for the system is below the selected trigger level input threshold. Confidence levels are determined for each camera by the vision processing unit (VPU). (See Confidence Levels later in this section for inputs that determine a confidence level.)

Fallback Mode-Off Selected—If any confidence level is inadequate, nozzle B reverts to OFF and will not apply product from the affected nozzles.

Fallback Mode-Broadcast Selected—If a confidence level is not fully or partially met, nozzle B reverts to a traditional broadcast mode and will broadcast apply product from the affected nozzles.

NOTE: Select broadcast if the top priority is to apply product to the target.

The system reverts the affected nozzles back to normal operation once operating conditions are back within parameters.

aola2vy,1675685722419-19-06FEB23

Operating Conditions

The system constantly monitors the following inputs across the boom to calculate an operating condition factor of fully met, partially met, or not met.

Operating conditions being monitored by the system are:

- Optimal boom height
- Machine speed measured at each nozzle
- Camera image quality (includes ambient light and image quality inputs)

Follow the guidelines below to maintain the operating conditions of each input at fully met or partially met to obtain the optimal performance of the system.

A message on the display will appear when a confidence level is not met, and the system will activate the operator-selected fallback mode. For example, if broadcast is the selected fallback mode and one or more of the input operating conditions are not met, the system will then revert to traditional broadcast spray out of the affected nozzles.

The system will return to normal operation once operating conditions return to a fully met or partially met state.

Optimal Boom Height

Designed optimal boom height above the target or ground is 500—1200 mm (20—47 in) for Targeted Herbicide (TH) and 500—1675 mm (20—66 in) for Variable Rate (VR). Operating within this range obtains a confidence level of fully met.

Operating with the boom 305—508 mm (12—20 in) above the target or ground obtains a confidence level of partially met.

Operating with the boom 1194—1397 mm (47-55 in) above the target or ground contains a confidence level of partially met.

Operating with the boom less than 305 mm (12 in) or greater than 1397 mm (55 in) above the target or ground

obtains a confidence level of not met and activates the fallback mode for the affected nozzles.

NOTE: It is recommended to run the boom at a height between 500 mm (20 in)—660 mm (26 in) above the crop canopy. To take in account for a 254 mm (10 in) deflection in the system, the optimal height setting for most conditions is 660 mm (26 in) above the crop canopy.

	Approximate Boom Height Above Target	Confidence level
	>1397 mm (>55 in) and Above	Not Met
	1397mm (55 in)	Partially Met
	>1200 mm (>47 in)	Partially Met
Optimal Upper Height Above Target	1200 mm (47 in)	Fully Met
Optimal Lower Height Above Target	500 mm (20 in)	Fully Met
	<500mm (<20 in)	Partially Met
	305 mm (12 in)	Partially Met
	<305 mm (<12 in) or Less	Not Met

Optimal Nozzle Speed

NOTE: The system uses GPS inputs to determine the speed of the ExactApply nozzle over the ground. Outer nozzles in a turn travel faster than inner nozzles, so the outer nozzles can travel above optimal speeds in a turn and activate the fallback mode for the affected nozzles.

Optimal nozzle speed is 0.8 km/h minimum —24.1 km/h maximum (0.5 mph minimum—15 mph maximum). Operating nozzles within this range obtains a confidence level of fully met.

Nozzles operating above or below this speed range obtains a confidence level of not met and will activate the fallback mode for the affected nozzles.

NOTE: If nozzle speed is less than 0.8 km/h (0.5 mph), the system will activate the OFF fallback mode instead of the broadcast fallback mode, even if broadcast is selected.

Camera Image Quality

Ambient Light—The cameras measure the light to determine the ambient light value. Ambient lighting is dependent upon several varying factors, including but not limited to:

- Time of year
- Ambient conditions
- Time of day
- Overcast
- Shading

When minimum ambient lighting requirements are not met, the system reverts to a confidence level of not met

and will activate the fallback mode for the affected nozzles.

NOTE: Lower light on the center frame cameras due to machine shading may result in affected nozzles going into a fallback mode sooner than others.

Debris/Obstructions—The system interprets the image and determines if a lens has any debris or obstructions. The system notifies the operator if it determines that the lens has damage or fixed debris obstructing the vision of the camera. Debris behind the tires is the most common image quality issue, resulting in fallback mode activation. Lenses should be cleaned daily and as required in certain conditions.

IMPORTANT: Avoid damage to camera lenses. Use only water in a spray bottle, a damp cloth with minimal pressure, or low-pressure air to clean lenses.

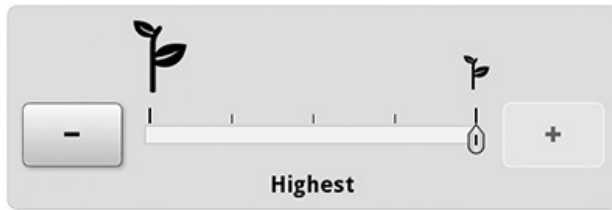
If the system determines that there are no obstructions or occlusions, a confidence level of fully met is obtained.

If the system determines that there are minor obstructions or occlusions, a confidence level of partially met is obtained.

If the system determines that there are major obstructions or occlusions, a confidence level of not met is obtained and will activate the fallback mode for the affected nozzles.

This is determined across several zones within an image. Hence, a partially obstructed lens may still provide a confidence level of met in the image areas that are not obstructed.

Spray Sensitivity



N163885—UN—28FEB23

Spray sensitivity defines the minimum size of the target detected within a processed image to enable a nozzle B spray command.

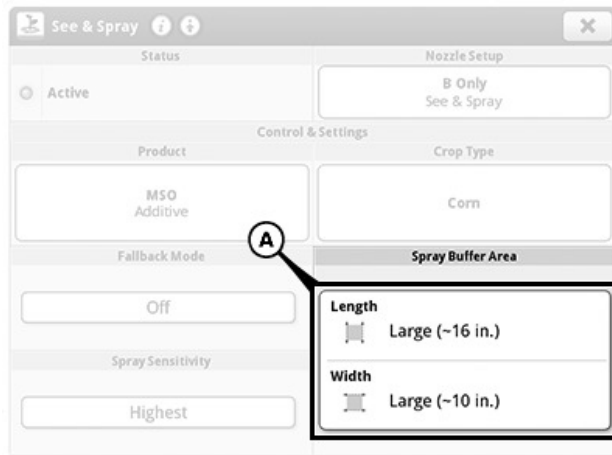
NOTE: This setting may require adjustment from field to field, or within the same field if operating or lighting conditions change.

The operator may define how sensitive the system is to an image interpretation for the target. System defaults to the medium sensitivity level. Select the (-) softkey for the system to detect larger targets and the (+) softkey for the system to detect smaller targets.

For most applications, it is recommended to start with a higher sensitivity level and then incrementally decrease the level to achieve a desired result and obtain the most chemical savings.

aota2vy,1675686722325-19-23FEB23

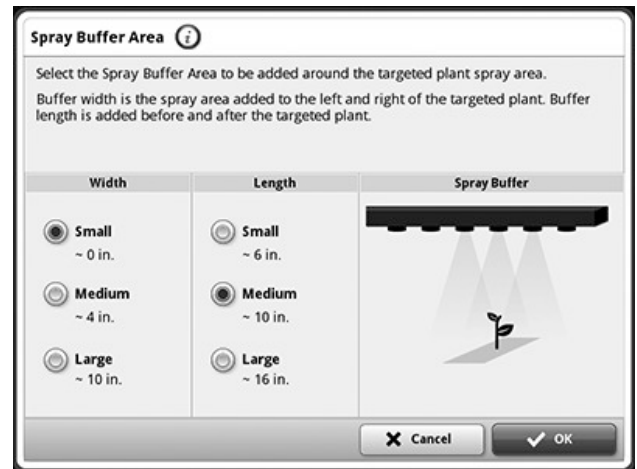
Spray Buffer Area



N163862—UN—06FEB23

A—Spray Buffer Area

1. Go to Menu > Machine Settings Tab > See & Spray.
2. Select spray buffer area (A).



N163879—UN—28FEB23

This setting adjusts the minimum spray length the system applies when a green object is detected.

NOTE: The system uses inputs such as nozzle speed and desired buffer setting to determine when the nozzle starts and stops spraying. This relates to the minimum time in milliseconds that an enabled command is sent to the nozzle. This setting correlates to linear distance.

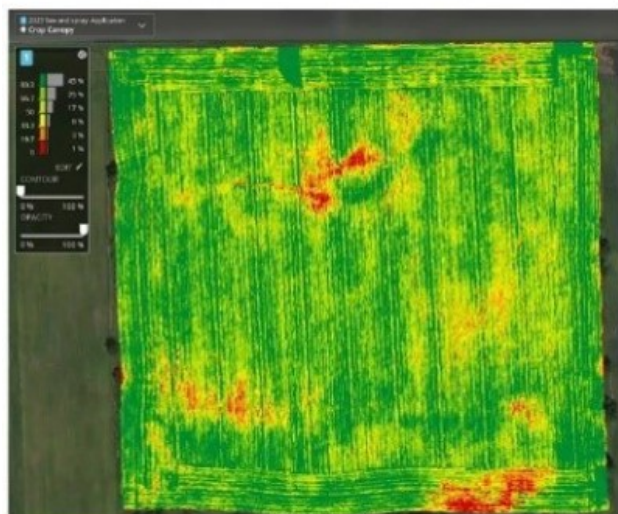
It is recommended to increase the buffer length when operating at varying speeds, if accelerating and decelerating often, or if operating outside the ideal 30—50 psi spray pressure setting.

If another target is detected during the time an ON command is currently active, the command extends the minimum spray length.

For best results, select Large when operating in windy conditions or at higher boom heights.

aota2vy,1675686835340-19-23FEB23

Crop Canopy Mapping



NX1400165—UN—10APR25

Crop Canopy Map

On machines equipped with See & Spray Premium, a crop canopy map layer will record in Operations Center. This layer will show the operator what percentage of the field is detected as crop by the See & Spray cameras across the boom. The layer will only be recorded while in See & Spray mode when a supported crop type is selected. Benefits of the crop canopy map layer include:

- Understand crop health at the moment the operator applied on the field.
- See areas of the field with faster or slower growth and make informed decisions based on that knowledge.
- Easily compare this layer to other map layers to find trends in the data.

Outline can be added to the map layer to see patterns of consistency in the canopy enclosure of the field.

ouo6092,1744139200096-19-05JUN26

Over the Canopy Spraying

Machines equipped with See & Spray Premium will be able to extend the number of application opportunities utilizing the See & Spray technology for over-the-canopy spraying. Operators will be able to spray at higher booms heights, unlocking the ability to spray "escapes" in supported applications.

Once the canopy is enclosed, switch BoomTrac to canopy mode and target escapes seen protruding over the canopy. Due to this update, machines equipped with Premium will now be able to raise their boom height to 500—1200 mm (20—47 in) on Target Herbicide (TH)

and 500—1675 mm (20—66 in) on Variable Rate (VR) and above the canopy before experiencing fallback while in BoomTrac canopy mode. Fallback while BoomTrac is in ground mode or ground+ mode is still limited to 500—1200 mm (20—47 in) on Target Herbicide (TH) and 500—1675 mm (20—66 in) on Variable Rate (VR) before fallback occurs. In this mode, operators will experience fallback at the center frame of the machine due to occluded vision of the cameras with the chassis. Fallback mode will remain at 500—1200 mm (20—47 in) on Target Herbicide (TH) and 500—1675 mm (20—66 in) on Variable Rate (VR) for the center frame of the machine. If canopy mode is selected, and the crop is not at canopy yet, the operator may see an increase in fallback along the boom.

Maximum crop height still remains at 40.64 cm (16 in) until canopy is fully covered and this feature can be used.

If the booms are moving too much it is recommended to change minimum buffer size to medium.

ouo6092,1744141506713-19-02JUN26

Performance Related Alerts

If the system recognizes a performance-related condition that will activate the fallback mode for the affected nozzles, a window shade will drop down on the display to alert the operator of the condition so operating changes can be made.

See Operate Machine in the Operate See & Spray Premium section for a list of drop-down notifications.

aota2vy,1675686975164-19-06FEB23

See & Spray Premium Application

Access See & Spray Application

Access Application through Display:



Menu

WZ1406983—UN—28MAY25

1.Menu



Machine Settings

WZ1406981—UN—28MAY25

2.Machine Settings tab



See & Spray

WZ1408442—UN—06JUN25

3.See & Spray System

aota2vy,1674488723291-19-05MAY26

See & Spray Main Page

See & Spray System applies a targeted solution to a weed when it is identified in a field and stops the application when no weeds are detected. Cost savings are gained because the amount of solution applied to a field is reduced.

Items Accessible on See & Spray Page:

Status Items:



Status

WZ1405331—UN—16MAY25

Status— provides visual feedback of system performance and errors. Select to view current system status and access [See & Spray Diagnostics](#) if there is a fault present.



Application

WZ1408444—UN—06JUN25

Application— allows you to switch between using the Targeted Herbicide Settings or Variable Rate Settings.

Machine Configuration Items:



Crop

WZ1408458—UN—06JUN25

Crop— displays the crop type. The crop type can be changed using the Work Setup display application. Press the Crop input box to go to the Work Setup application.

If Equipped With Standard Solution System:



Product

WZ1408488—UN—06JUN25

Product— displays the name of the chemical being used. The product type can be changed using the [Work Setup](#) display application. Press the Product Name input box to go to the Work Setup application.

Fallback Mode— displays the spray method and rate that will be used when See & Spray operational conditions are not satisfactory. Press the Fallback Mode input box to change the Fallback Mode setting.

Control & Settings Items:



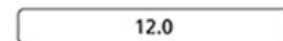
Nozzle Configuration

WZ1408477—UN—06JUN25

Nozzle Configuration— displays which nozzle is currently being used. Press the Nozzle Configuration input box to go to the [Nozzle Turret | Manual Setup](#) page.

Targeted Herbicide Settings Items:

NOTE: A license is required to enable targeted herbicide.



Target Rate

WZ1408493—UN—06JUN25

Target Rate— allows you to set the desired target application rate. Select the Target Rate input box to open the keypad and enter the desired target rate.



Weed Size

WZ1408517—UN—06JUN25

Weed Size— allows you to adjust the minimum size of weeds that See & Spray targets. Press the Weed Size input box to change the setting.

All Weeds

Targeted Plants

WZ1408498—UN—06JUN25

Targeted Plants— displays whether all weeds are targeted by See & Spray or whether only Broadleaf were targeted. This setting changes based on the selected crop.

Length	{Small (~0 in.)}
Width	{Small (~6 in.)}

WZ1408479—UN—06JUN25

Spray Buffer

Spray Buffer— allows you to select the approximate width and length of additional spray area around the targeted plant. Select the Spray Buffer input boxes to change the width and length settings.

Between Rows 30.0 in

WZ1408497—UN—06JUN25

Targeted Area

Targeted Area— displays whether the system is spraying the entire field or between rows. If spraying between rows is selected, the row spacing must be adjusted accordingly.

Variable Rate Settings Items:

NOTE: A license is required to enable variable rate.

Rates (gal/ac)		
Below	Between	Above
12.0	12.0 - 20.0	20.0

WZ1408513—UN—06JUN25

Rates

Rates— displays the minimum and maximum application rates when using variable rate, as well as the range of application rates between the minimum and maximum rate settings.

Select the area below Variable Rate Settings to make adjustments to the application rates.

Ranges (%)		
<32	32 - 78	>78

WZ1408512—UN—06JUN25

Ranges

Ranges— displays the minimum and maximum detected biomass values, as well as the range of detected biomass between the minimum and maximum biomass settings.

Select the area below Variable Rate Settings to make adjustments to the biomass ranges.

Shortcut Keys:

Shortcut keys for this application can be added to the shortcut bar using Layout Manager.

Example:



WZ1408468—UN—06JUN25

See & Spray

See & Spray— provides quick access to the See & Spray application.

NOTE: Different shortcut keys may be available for your application.

aota2vy,1674487389596-19-05JUN26

Nozzle Turret | Manual Setup

Manual Setup configures the ExactApply system to achieve the desired settings. Spray mode, valve pulsing mode, nozzle flow, turret position, and installed spray tips are adjustable on this page.

Modify When:

- Installed spray tips are changed.
- Changing spray mode.
- Changing valve pulsing mode.

Items Accessible on Nozzle Turret | Manual Setup Page:



N125635—UN—16DEC16

Spray Tip

Spray Tip— indicates the size of the installed spray tip and position on the turret.



N127631—UN—16DEC16

Rotate Turret Counterclockwise

Rotate Turret Counterclockwise— rotates the rear of the turret position on the display one position to the right. Turrets on the boom must be adjusted by hand.



N153228—UN—09APR21

Spray Method

Spray Method— displays the selected spray method. Select to open the Spray Setup screen.



Rotate Turret Clockwise

N127633—UN—16DEC16

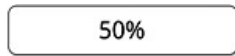
Rotate Turret Clockwise— rotates the rear of the turret position on the display one position to the left. Turrets on the boom must be adjusted by hand.



Valve Pulsing Mode

N127634—UN—16DEC16

Valve Pulsing Mode— displays valve pulsing mode selected.



Valve Pulsing Nozzle Flow

N127635—UN—16DEC16

Valve Pulsing Nozzle Flow— displays the amount of flow from a nozzle when operating in the fixed valve pulsing mode.

aota2vy,1674734194806-19-12SEP23

Spray Setup

Spray Setup allows you to select the desired nozzle and solenoids to use during application.

Modify When:

- Application rates change.
- Application speeds change.

Spray Modes with Nozzle 1, 2, or 3 in Front:

A Only— the A (left-hand) solenoid is active. Solution is sprayed from the front spray tip only. Use for maximum speed ranges, better turn compensation performance, and 15 or smaller tip sizes.

NOTE: When A Only is selected, See & Spray cannot be enabled.

B Only— the B (right-hand) solenoid is active. Solution is sprayed from the rear spray tip only. Use for maximum speed ranges, better turn compensation performance, and 15 or smaller tip sizes.

A + B— both solenoids are active. Solution is sprayed from both front and rear spray tips. Use with size 15 or smaller spray tips.

Automatic— nozzle control unit determines which solenoid or solenoid combination to operate. Solenoids

are not pulsed in this mode. Solution is sprayed from the front, rear, or both spray tips. Use with size 15 or smaller spray tips.

Spray Modes with Nozzle 4, 5, or 6 in Front:

Combined A + B— both solenoids are active. Solution is sprayed from the front spray tip. When pulsing is selected, the nozzle is pulsed at twice the pulse rate of a single nozzle. This mode provides a higher flow rate for use with size 30 and smaller spray tips. This mode is only available when spray tip 4, 5, or 6 is in the front position.

Procedure to Modify:



Spray Mode

N153229—UN—09APR21

1. Select desired Spray Mode.



Spray Method

N153121—UN—22JAN21

2. Select Spray Method input box and choose See & Spray or Broadcast.



OK

H114654—UN—05JAN17

3. Select OK button to confirm.

aota2vy,1674734214495-19-26JAN23

Fallback Mode

Fallback Mode allows you to configure the spray method that is engaged when See & Spray operational conditions are not satisfactory. The triggers for fallback mode are boom height, speed, and camera health. The factors that affect camera health include dust, obstructions, and low light conditions.

- Select **Off** if you want the system to turn off if conditions fall below a trigger level.
- Select **Broadcast** if you want the system to continue to spray in a broadcast pattern if conditions fall below a trigger level.

NOTE: Select Broadcast if the top priority is to apply product to the target.

aota2vy,1674734020577-19-29MAR23

Spray Buffer

Spray Buffer allows you to select the approximate width and length of additional spray area around the targeted plant.

NOTE: Small settings may provide the greatest amount of chemical savings, while large settings may provide the least amount of chemical savings.

Items Accessible on Spray Buffer Area Page:

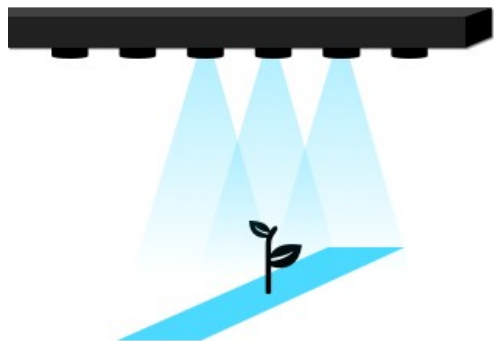


Width

WZ1408480—UN—06JUN25

Width— is the side-to-side distance of additional coverage.

NOTE: When a See & Spray target is detected, a minimum of two nozzles are activated. More nozzles may be activated depending on selected spray tip, boom height, or if the target is located between two or more nozzles.



Length

WZ1408481—UN—06JUN25

Length—is the front-to-back distance of additional coverage.

NOTE: Large setting is recommended when operating at max boom height. The spray length may require adjustment if the machine speed or wind speed change.

Procedure To Modify:



Radio Button

a94261—UN—24AUG18

1. Select the Radio buttons next to the desired width and length settings.



WZ1406948—UN—28MAY25
OK



N118394—UN—17FEB16
Cancel

2. Select OK to save or Cancel to discard changes.

KSSNJ4I,1777991917786-19-05JUN26

Weed Size

Weed Size allows you to choose the minimum weed size that See & Spray targets. View the [Video Feeds](#) to assess if the current weed size setting is acceptable.

Procedure to Modify:

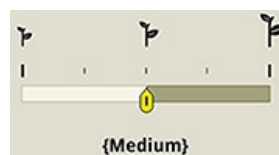


WZ1408459—UN—06JUN25
Decrease



WZ1408465—UN—06JUN25
Increase

1. Select the Decrease button with the minus (-) symbol to choose a smaller minimum weed size. Select the Increase button with the plus (+) symbol to choose a larger minimum weed size.



Slider

WZ1408518—UN—06JUN25

2. The slider indicates the selected minimum weed size.



WZ1406948—UN—28MAY25
OK



N118394—UN—17FEB16
Cancel

3. Select the OK button to save your changes and exit or select the Cancel button to exit without saving.

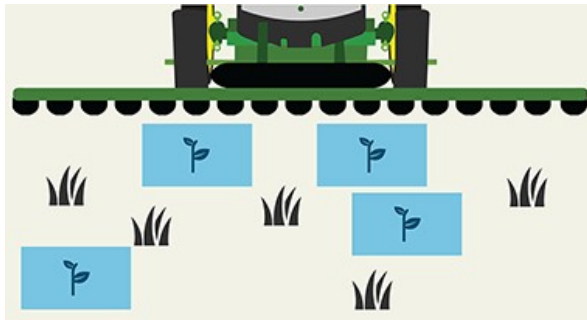
KSSNJ4I,1778013710973-19-05MAY26

Targeted Plants

Targeted Plants refers to the type of plants that See & Spray will target when Targeted Herbicide is ON. The targeted plant displayed, either Broadleaf or All Weeds, will automatically update based on the crop type selected.

To change the targeted plant type, change the crop type in Work Setup.

Broadleaf

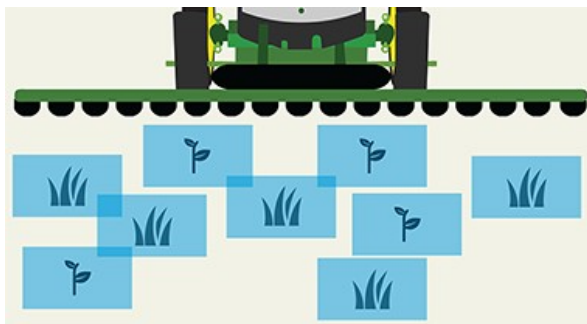


Broadleaf

WZ1408500—UN—06JUN25

Broadleaf— system sprays only broadleaf weeds.

All Weeds:



All Weeds

WZ1408499—UN—06JUN25

All Weeds— system sprays both broadleaf weeds and grasses.

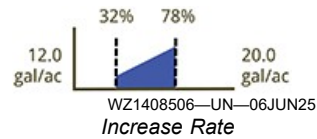
KSSNJ4I,1778013844694-19-05MAY26

Variable Rate

Variable Rate lets the operator set thresholds for the amount of green objects, called biomass, that the sensors detect. The operator assigns an application rate for everything below the low threshold, called the smaller biomass limit, and an application rate for everything above the high threshold, called the larger biomass limit. The green objects between the smaller and larger biomass limits are sprayed using a variable rate between those two rates.

Items Accessible on Variable Rate Page:

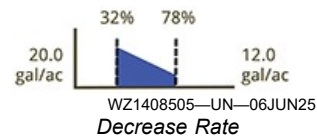
Rate Pattern Items:



a94261—UN—24AUG18
Radio Button

Increase Rate— select to spray targeted plants detected at the smaller biomass limit with the minimum application rate. As the detected targets increase in biomass, the application rate increases along with the increase in detected biomass. At the larger biomass limit, the maximum application rate is sprayed.

Select the Radio button next to Increase Rate to choose this rate pattern.



a94261—UN—24AUG18
Radio Button

Decrease Rate— select to spray targeted plants detected at the smaller biomass limit with the maximum application rate. As the detected targets increase in biomass, the application rate decreases as the detected biomass value increases. At the larger biomass limit, the minimum application rate is sprayed.

Select the Radio button next to Decrease Rate to choose this rate pattern.

Spray Targeting Items:

12.0 gal/ac

Minimum Rate

WZ1408510—UN—06JUN25

Minimum Rate— allows you to set the minimum application rate used by the system. Select the input box to open the keypad to enter a new value.

20.0 gal/ac

WZ1408509—UN—06JUN25

Maximum Rate

Maximum Rate— allows you to set the maximum application rate used by the system. Select the input box to open the keypad to enter a new value.

20.0 gal/ac

WZ1408509—UN—06JUN25

Maximum Rate

Maximum Rate— allows you to set the maximum application rate used by the system. Select the input box to open the keypad to enter a new value.

32%

WZ1408514—UN—06JUN25

Smaller Biomass

Smaller Biomass— allows you to set the minimum limit for detected material to be included as a See & Spray target.

Press the minus (-) button to decrease the value or press the plus (+) button to increase the value. Select the input box that displays the current setting to use the keypad to enter a new value.

78%

WZ1408507—UN—06JUN25

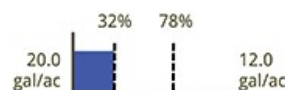
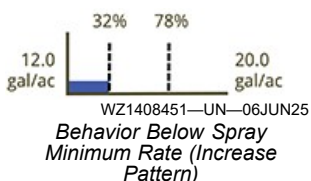
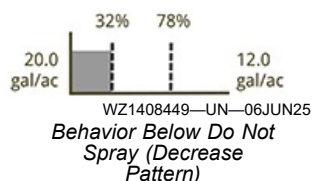
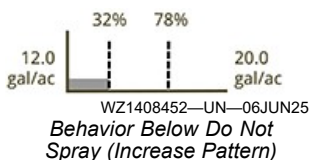
Larger Biomass

Larger Biomass— allows you to set the maximum limit for detected material to be included as a See & Spray target.

Press the minus (-) button to decrease the value or press the plus (+) button to increase the value. Select the input box that displays the current setting to use the keypad to enter a new value.



a94261—UN—24AUG18
Radio Button



Behavior Below Spray Maximum (Decrease Pattern)

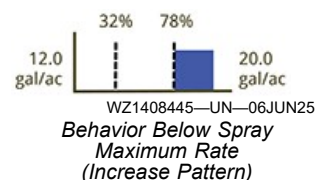
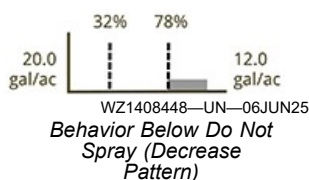
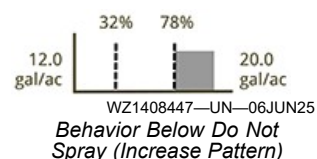
Behavior Below— allows you to choose the spray behavior that will be used when the amount of detected targets fall below the smaller biomass limit. Select the Radio button next to the desired option.

Select Do Not Spray to stop spraying when the detected biomass amount falls below the smaller biomass limit. Do Not Spray will appear as a greyed-out segment on the Summary graph.

Select Spray Min Rate or Spray Max Rate to continue spraying at the minimum/maximum application rate when the detected biomass amount falls below the smaller biomass limit. The selected rate pattern effects whether the option to spray at the minimum rate or spray at the maximum rate are available for Behavior Below. Spray Min/Max Rate will appear as a blue segment on the Summary graph.



a94261—UN—24AUG18
Radio Button



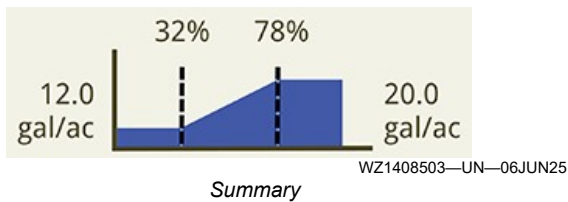
Behavior Below Spray Minimum (Decrease Pattern)

Behavior Above— allows you to choose the spray behavior that will be used when the amount of detected targets rise above the larger biomass limit. Select the Radio button next to the desired option.

Select Do Not Spray to stop spraying when the detected biomass amount rises above the larger biomass limit. Do Not Spray will appear as a greyed-out segment on the Summary graph.

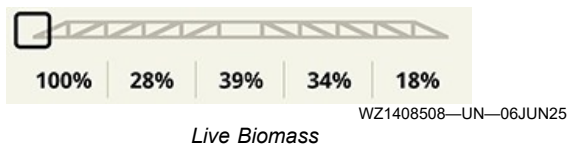
Select Spray Min Rate or Spray Max Rate to continue spraying at the minimum/maximum application rate when the detected biomass amount rises above the larger biomass limit. The selected rate pattern effects whether the option to spray at the minimum rate or spray at the maximum rate are available for Behavior Above. Spray Min/Max Rate will appear as a blue segment on the Summary graph.

Summary Items:



Summary— provides a graphical representation of the rate pattern, spray targeting, and minimum/maximum application rate settings and their relation to each other.

Live Biomass Items:



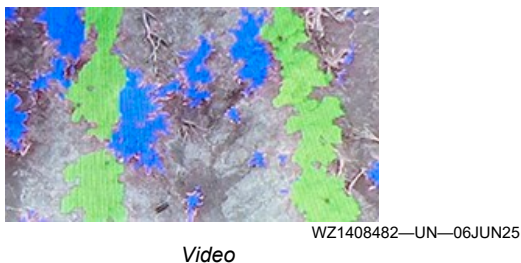
Live Biomass— shows the current biomass percentage for each See & Spray control unit on the machine. The percentages are an average of the represented area on the boom. Each nozzle is applying product based on the biomass percentage measured by the camera.

The portion of the boom with a square around it indicates the general location of the camera live feed being viewed.

Select the percentages to open Camera Diagnostics and view the image for each camera.



Select a Camera— use the left and right arrows to toggle between cameras.



Video— displays the live video feed from the selected camera. Detected targets are highlighted in blue.



Cancel

N118394—UN—17FEB16

Cancel— select to exit Variable Rate screen without saving changes.



OK

WZ1406948—UN—28MAY25

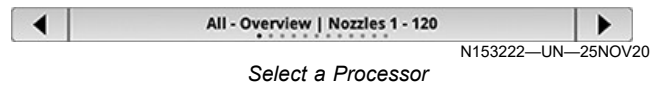
OK— select to save changes and exit Variable Rate screen.

KSSNJ41,1778014031287-19-28MAY26

See & Spray - Vision Processor/Camera

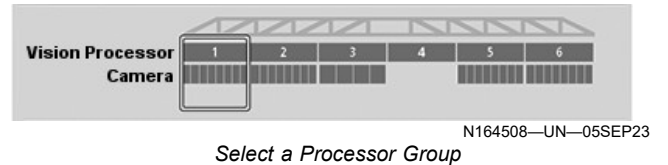
See & Spray - Vision Processor/Camera provides access to video feeds, fault codes, confidence status, and view diagnostic readings.

Items Accessible on See & Spray - Vision Processor/Camera Page:



Select a Processor

Select a Processor— use the left and right arrows to toggle between vision processors or select the center of this overlay to open a full list of available vision processors.



Select a Processor Group

Select a Processor Group— displays all active and faulted vision processors and cameras. Press directly onto the desired group number to access more information.



View Details

N153029—UN—25NOV20

View Details— select to view further details and options to resolve faults with the vision processor or camera.



Select a Camera

N152995—UN—25NOV20

Select a Camera— use the left and right arrows to toggle between cameras or select the center of this

overlay to open a list of available cameras for the vision processor selected.



Video

N153266—UN—03AUG21

Video— displays the live video feed from the selected camera. Detected targets are highlighted in blue. When a See & Spray capable crop type is selected, the identified crops (non-target) are highlighted in green.

Press the video tile to open a full screen of the video feed.



Diagnostic Readings

A99030—UN—20MAR18

Diagnostic Readings— select to access additional information about the currently selected vision processor.



Diagnostic History

A99030—UN—20MAR18

Diagnostic History— select to access fault history and fallback mode history.

ouo6064,1693929203950-19-05SEP23

See & Spray - Video

See & Spray - Video allows you to access live video feeds and toggle between available cameras. Detected targets are highlighted in blue. When a See & Spray capable crop type is selected, the identified crops (non-target) are highlighted in green.

Items Accessible on See & Spray - Video Page:

Camera 16

Camera

N153041—UN—25NOV20

Camera—displays the current camera being viewed on the video feed.



Exit Full Screen

N153044—UN—25NOV20

Exit Full Screen—press to close out of the full screen and return to the previous screen.

aota2vy,1688997468480-19-05MAY26

See & Spray Diagnostics | Diagnostic History

See & Spray Diagnostic History allows you to access a list of previously recorded activity for faults and fallback mode.

Items Accessible on See & Spray Diagnostics | Diagnostic History Page:

Fault History

Fault History

N153025—UN—25NOV20

Fault History— select the fault history tab to view a list of specific vision processors/cameras that have reported a fault.

Fallback Mode History

Fallback Mode History

N153026—UN—25NOV20

Fallback Mode History— select fallback mode history to view a list of previously recorded occurrences of fallback mode.



Sort

N153027—UN—25NOV20

Sort— press to view a list of available sorting options for fault or fallback mode history.



Delete

N153028—UN—25NOV20

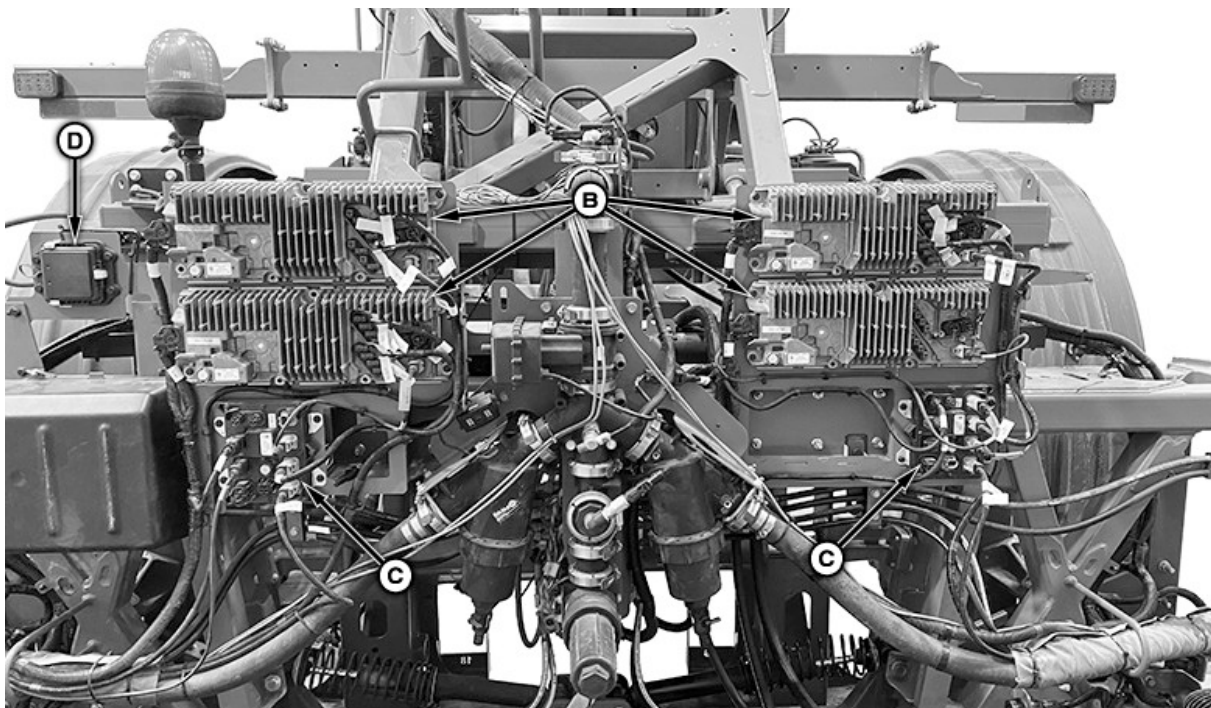
Delete History— press to delete fault or fallback mode history.

NOTE: Deleting history requires confirmation after the Delete button is pressed. This action cannot be undone.

ouo6064,1693929564282-19-05SEP23

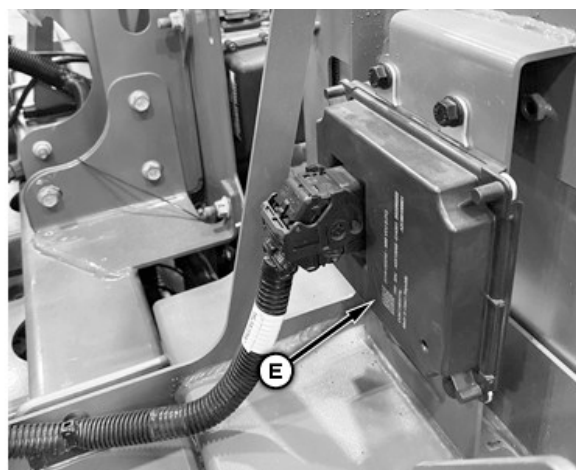
Component Identification

See & Spray Premium Components



VPUs, Fuses, and Ethernet Switches

N163859—UN—02FEB23



Camera and GWC

N163860—UN—02FEB23

A—Camera (36 used)
B—Vision Processing Unit (VPU) (4 used)
C—Ethernet Switch (2 used)

D—Fuse Block
E—Gateway Controller (GWC)

The system is composed of five main components:

- Cameras (A) are located across the booms and center frame.
- Vision processing units (VPU) (B) are located on the center frame and inner wings. Each camera is connected to a VPU.
- The Ethernet switches (C) are located on the center frame. Each VPU is connected to an Ethernet switch.

- A fuse block (D) is located on the center frame.
- A gateway controller (GWC) (E) is located on the back of the lead VPU.

ouo6064,1693938459547-19-22OCT25

Calibration

Calibrate System

NOTE: Boom tilt valve calibration must be completed before performing the See & Spray camera calibration procedure.

Verify BoomTrac Pro 2.0 Sensor Settings

Verify the BoomTrac Pro 2.0 lateral and vertical sensor placement. See Edit Sensor Placement in the CommandCenter Display Application section of the machine Operator's Manual.

Calibrate See & Spray Premium System

Calibration of the See & Spray Premium system is required: directly after the installation of the kit prior to spraying, when removing the sprayer from storage, or after the replacement of one of the cameras.

IMPORTANT: Calibration must be performed on flat, smooth ground. The calibration might fail if attempted on uneven ground, such as gravel or grass.

NOTE: For best results, calibration should be performed in sunny or light overcast conditions. Calibration should not be performed during rain. There should be no shadows directly on the calibration mat.

Handling of the calibration mat is difficult in windy conditions. Avoid performing the calibration in windy conditions or find a protected area to perform the calibration.

Calibration takes approximately a few minutes after proper setup.

A new calibration is required if a camera bracket has been bent or if a spray camera has been removed or replaced.

The camera calibration process establishes the exact position and orientation of the camera relative to the machine, ensuring what the camera sees lines up accurately with where the system can act.

1. Move the machine to a shop floor or a field with bare ground where the booms can be completely unfolded and have room to fully rise and lower.

NOTE: For proper calibration, the terrain and calibration mats must be flat. There should be no wrinkles in the calibration mat.

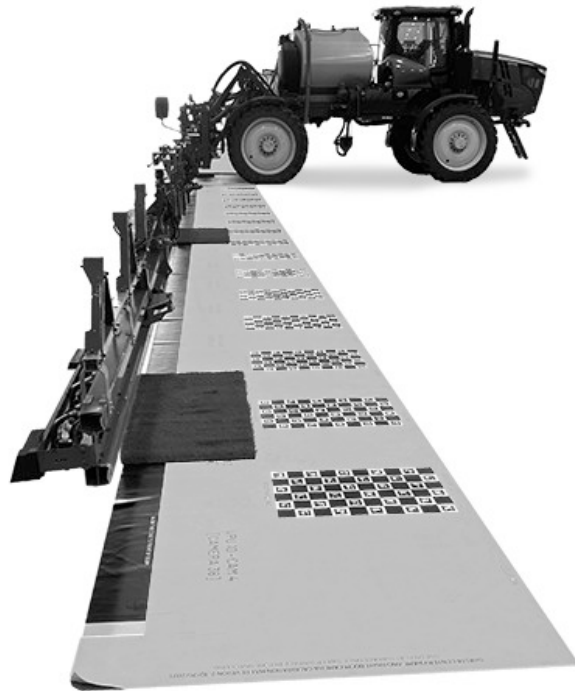
2. Set the park brake.

CAUTION: Avoid possible injury or death from boom movement during the calibration process. Booms move automatically several times during the process. Make sure that all bystanders are clear of the machine during the process.

3. Unfold, level, and lower the booms to approximately 500 mm (20 in) above the ground.

Prepare to Calibrate (Full Boom)

NOTE: Observe how calibration mats are stored when delivered so they can be properly stored when the procedure is completed.



N163863—UN—07FEB23

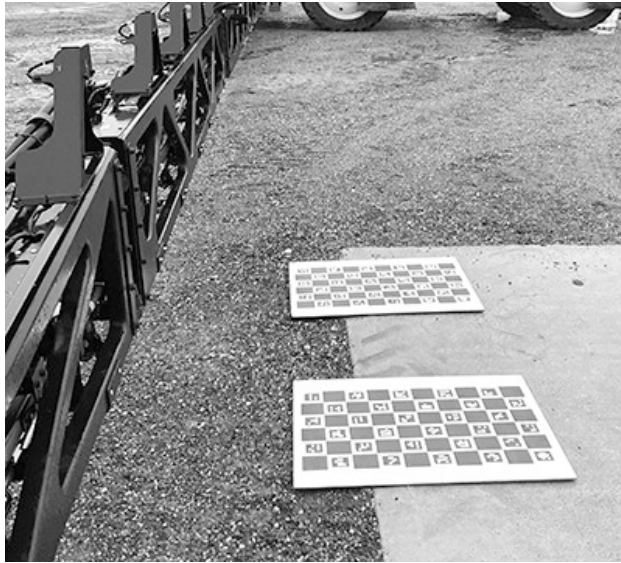
Calibration Mats Correctly Aligned

1. Lay out the provided calibration mats as shown. Align the mats to match the large black stripes with the booms, ensuring that the ends line up with the end of the booms as shown.
2. Secure the calibration mat to the ground using weighted objects as needed.

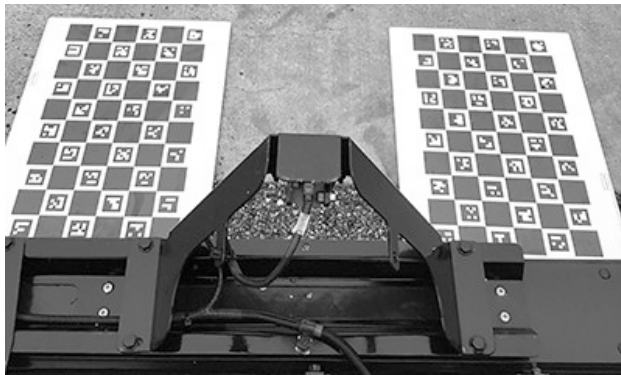
NOTE: Do not cover the vertical lines or QR codes on the calibration mat.

3. Ensure that any obstructions and debris are clear of the cameras being calibrated.

Prepare to Calibrate (Single Camera)



N164145—UN—15JUN23



N164146—UN—15JUN23

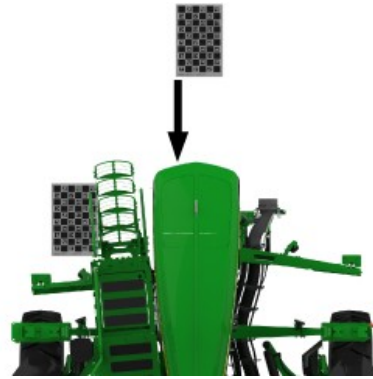
Place the calibration boards in front of the boom on either side of the camera to be calibrated. Place the boards equally between the camera to be calibrated and the adjacent cameras on either side.

If the camera to be calibrated is on either end of the boom, only place one board between it and the next camera.



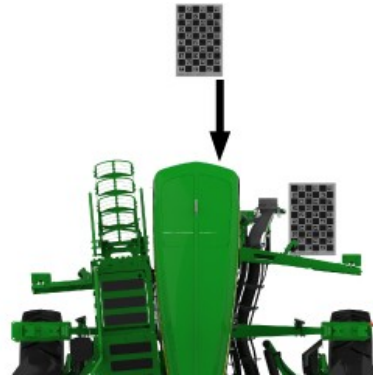
NX1439973—UN—13JAN26

Calibration Board Properly Placed for Front Cameras



NX1439971—UN—13JAN26

Calibration Boards Placement for Front Cameras



NX1439970—UN—13JAN26

Calibration Board Placement for Front Cameras



NX1439972—UN—13JAN26

Calibration Board Placement for Front Cameras

Start Calibration Procedure

IMPORTANT: Environmental conditions can affect the calibration procedure. Do not perform calibration during rain or winds over 16 km/h (10 mph).

Wrinkles or creases in the calibration mat or performing the calibration on an uneven surface can affect the calibration procedure. Make sure calibration mat is on a flat, even surface with no wrinkles or creases before performing the calibration procedure.

1. Start the engine and stay in the operator's seat.

2. Verify that the park brake is engaged.
3. Verify that there are no faults associated with any of the cameras or processors. Go to See & Spray - Vision Processor/Camera in the See & Spray Application section for the procedure to access and view each processor group to verify proper operation and that no faults are present.



H113668—UN—22OCT15

4. Select MENU on the display.



N119118—UN—23SEP16

5. Select the Machines Settings tab.



N119098—UN—25MAY16

6. Select Calibrations & Procedures.



N119127—UN—14NOV16

7. Select the Boom tab.
8. Select See & Spray Camera Calibration from the menu.
9. Select Begin Calibration.



Full Boom, All Cameras

N161027—UN—02MAR22

10. Select Full Boom, All Cameras to be calibrated. Select Next on the display.

NOTE: BoomTrac Pro 2.0 is in the ready state when it is not actively controlling the boom height, but the system is ready to be engaged to the active state by pressing the BoomTrac Pro 2.0 resume switch on the multi-function lever.

11. Ensure that BoomTrac Pro 2.0 is in the ready state.
12. Verify that all bystanders are clear of the booms and select Next on the display. The machine automatically controls the boom and center frame height to calibrate at the required various heights.
13. The calibration performs and returns a Successful or Fault calibration result. Select Save to complete the calibration, or select Cancel to delete the values.



N151085—UN—24APR20

14. If calibration faults, press the Diagnostics button to diagnose and repair the calibration issue.



N164507—UN—05SEP23

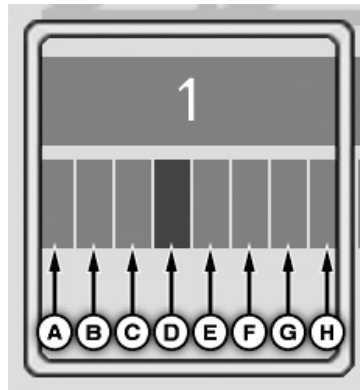
Vision Processor 1, Camera 4 Faulted

15. Select the vision processor with the faulted camera.
16. Use the following table to identify the proper repair procedure to clear the faulted camera.

DTC	Text	Repair Procedure
518275.13	Camera Calibration - Camera disoriented	Adjust camera per procedure below for Yaw/ Pitch/Roll.
518205.13	Camera Calibration – Target not detected	Adjust the calibration mat on the ground to make more of it visible in the camera feed. Assure proper lighting to avoid shadows or glare. Clean the camera lens.
517191.13	Camera not calibrated	Re calibrate the cameras.

17. Repair the cameras with the proper procedure and re calibrate the system.

Adjust Camera Yaw, Pitch, and Roll



N163865—UN—07FEB23

- A—141
- B—142
- C—143
- D—144
- E—145
- F—146
- G—147
- H—148

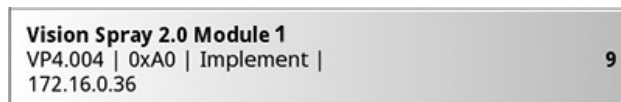
- If the camera disoriented fault is present, note the vision processor and camera address. All cameras are addressed between 141—148 moving left to right on each vision processor, except for the four cameras connected to vision processor unit 3, which are addressed between 141—144.



N163222—UN—05JAN23

Diagnostics Center

- Cancel the calibration and open the Menu, then Settings, then Diagnostics Center.



N163869—UN—09FEB23

Vision Processor

- Select controllers, then scroll down and select the vision processor with the faulted camera.

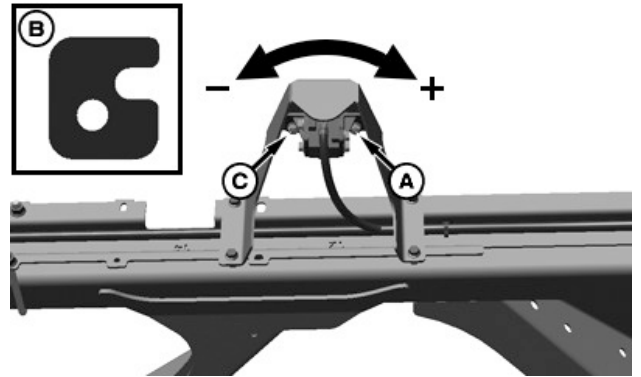


N163220—UN—04JAN23

Yaw, Pitch, and Roll Values

- Find the previously noted address of the faulted camera. The values given indicate the yaw (Y), pitch (P), and roll (R) positions of the camera. Values that are +/- 3.0 must be adjusted by installing shims at the mounting brackets of the faulted camera.

-



N163866—UN—09FEB23

Yaw Adjustment

- A—Flange Lock Nut
- B—Shim, 2.5 mm
- C—Flange Lock Nut

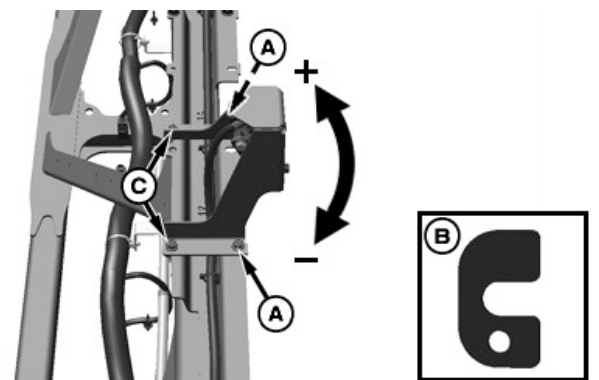
NOTE: Some cameras are mounted on other styles of mounting brackets. If shims cannot be used to adjust the camera as needed, use the tolerance in the mounting holes to adjust the yaw, pitch, or roll.

Do not use more than two shims at one mounting screw. If more than two shims are needed to correct the camera position, the camera bracket must be repaired or replaced.

One 2.5 mm shim adjusts the yaw position roughly 2.8°.

- To add yaw, loosen the flange lock nut (A) and install up to two shims (B) as needed between the camera assembly and bracket. Tighten the flange lock nut.
- To subtract yaw, loosen the flange lock nut (C) and install up to two shims as needed between the camera assembly and bracket. Tighten the flange lock nut.

-



N163867—UN—09FEB23

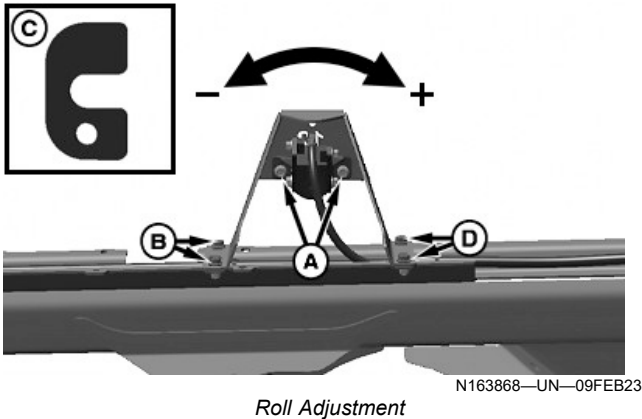
Pitch Adjustment

- A—Flange Cap Screw (2 used)
- B—Shim, 4 mm
- C—Flange Cap Screw (2 used)

NOTE: One 4 mm shim adjusts the pitch position roughly 2°.

- To add pitch, loosen the flange cap screws (A) and install up to two shims (B) as needed between the mounting bracket and boom. Tighten the flange cap screws.
- To subtract pitch, loosen the flange cap screws (C) and install up to two shims as needed between the mounting bracket and boom. Tighten the flange cap screws.

7.



- A—Flange Lock Nut (2 used)
 B—Flange Cap Screw (2 used)
 C—Shim, 4 mm
 D—Flange Cap Screw (2 used)

NOTE: The hole tolerance between the camera assembly and bracket adjusts the roll position roughly 2°.

- To add roll, loosen the flange lock nuts (A), turn the camera assembly clockwise, and tighten the flange lock nuts.
- If further adjustment is needed, loosen flange cap screws (B) and install up to two shims (C) as needed between the mounting bracket and boom.
- To subtract roll, loosen the flange lock nuts (A), turn the camera assembly counterclockwise, and tighten the flange lock nuts.
- If further adjustment is needed, loosen flange cap screws (D) and install up to two shims (C) as needed between the mounting bracket and boom.

NOTE: If two shims have already been used at any single mounting screw and further adjustment is still needed, then the mounting bracket must be repaired or replaced.

8. Run the calibration procedure again and repeat adjustment steps as needed until all cameras are positioned within tolerance and all other camera faults are cleared.

9. Store the calibration mats in the same manner as they were delivered, ensuring that they are clean, dry, and not wrinkled. Store the mats in supplied bags indoors to avoid prolonged sunlight exposure.

ouo6064,1693923380496-19-05JUN26

See & Spray Detection

This procedure is used to ensure that the See & Spray system is activating properly. A red object is used as the detection tool for this procedure. The detection tool is placed in front of the cameras to verify that the system is triggered.

Recommendations:

- Complete the Service Spray Equipment Safety Procedure.
- Fill the tank(s) with water.
- Park the machine on an appropriate non-red topography.
- Complete the Nozzle Flow Check before starting this procedure to ensure proper flow.
- Stand upwind and in front of the boom.
- Boom height must be between 500—1200 mm (20—47 in).
- Complete the See & Spray setup, and ensure that a tip is assigned to nozzle B.

Items Accessible on See & Spray Detection Page:



Begin Procedure

N156486—UN—27JUL21

Begin Procedure— begins procedure.

aota2vy,1674747512608-19-12SEP23

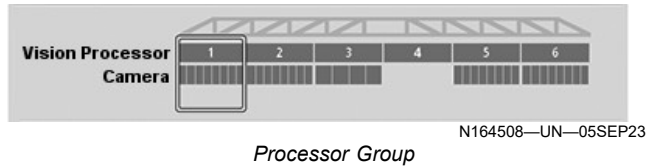
See & Spray Detection Procedure

This procedure is used to ensure that the See & Spray Premium system is activating properly.

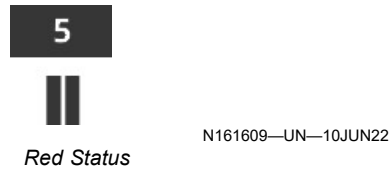
Procedure Requirements:

Machine State	Parked on gravel or bare ground
Solution Pump State	ON
Spray System Master	ON
Boom Height	500—1200 mm (20—47 in)

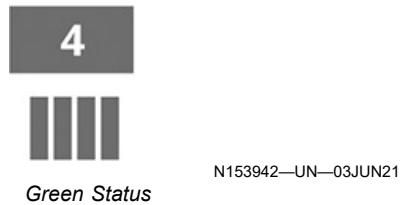
Items Displayed on Page:



Processor Group— displays all active and faulted vision processors and cameras.



- Red status indicates a fault. For more details about the fault, see See & Spray Diagnostics within the See & Spray application.



- Green status indicates that there are no faults detected.

See & Spray Detection Procedure:

1. Meet the procedure prerequisites.



2. Select Next to continue, or select Cancel to return to the previous screen.
3. Follow the messages on the screen to complete the procedure.

IMPORTANT: Stand upwind and in front of the boom when using the detection tool.



4. When done viewing the system status, select OK to return to normal operating conditions.

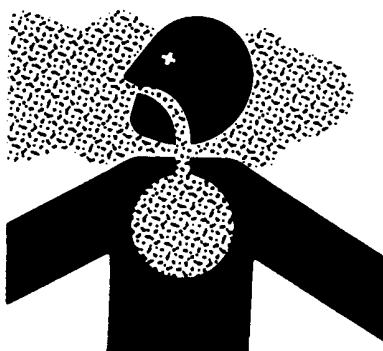
ouo6064,1693936165809-19-12SEP23

Operate See & Spray Premium

Service and Operate Chemical Sprayers Safely



TS272—UN—23AUG88



TS220—UN—15APR13

Chemicals used in agricultural sprayers 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. (See 'Handle agricultural chemicals safely' found in the Safety Section.)
- Fill, flush, calibrate, and decontaminate sprayer in an area where runoff will not reach ponds, lakes or streams, livestock areas, or gardens, or near other people.
- Keep children away from the chemicals, chemical solutions, and rinsates.
- If spray or chemical concentrate contacts skin, hands, or face, wash immediately with soap and water.
If spray or chemical concentrate gets into eyes, flush immediately with water.
- If nozzle clogs or system malfunctions, stop engine and relieve spray pressure from system.
- Do not place nozzle tips or other components to the mouth to clear obstructions. Keep spare tips on hand for replacement.
- Minimize risk of spray drift.
 - Use large nozzle tips operated at lower pressures

- Do not operate solution delivery system at pressures exceeding 345kPa (3.5 bar) (50 psi).
- Do not spray when winds exceed 16 km/h (10 mph).
- Do not spray when wind is blowing towards a nearby sensitive crop, garden, or populated area.
- Properly dispose of unused chemicals, flushing solution, and empty chemical containers.
- Decontaminate equipment used in mixing, transferring, and applying chemicals after use.

DX,WW,CHEM02-19-05APR04

Avoid Exposure To Chemicals



TS220—UN—15APR13



TS272—UN—23AUG88

⚠ CAUTION: Injection system can contain hazardous material which can cause serious injury or death to you or others. Wear protective clothing, eye wear, and gloves. Do not drain solution onto the ground. Drain into a container.
DO NOT RELY ONLY 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 application
- 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)
- 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

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Set Up Spray Method and Application Rates

See & Spray user settings allow the operator to define the characteristics of how the system operates and behaves. The following describes the pre-requests for system interlocks to enable the system.

The system must have the proper variables input and selected to operate the selected application method from nozzle B, of the live plant (green color) targeted material that is identified by the system.

Available Spray Methods

There are three available spray methods:

- Target apply only from nozzle B
- Traditional broadcast apply using pulse width modulation (PWM) from nozzle A and target spray from nozzle B
- Traditional broadcast apply using non-PWM from nozzle A and target spray from nozzle B

Nozzle B requires the proper input selections and setup

for See & Spray Premium to be enabled. Nozzle B will not have full ExactApply functionality (PWM or turn compensation) when utilizing See & Spray Premium.

To target apply only from nozzle B:

1. Select the proper nozzle tip size for the rate desired and rotate that nozzle tip to rear location on the nozzle turret.

See Determine Nozzle Tip Sizes and Nozzle Turret Orientation in this section for additional information.

2. Go to Menu > Machine Settings > Boom and Nozzles > ExactApply Configuration > Manual Setup.
3. Set Spray Method to See & Spray.
4. Input desired application rate. See Determine Nozzle Tip Sizes and Desired Application rate later in this section.
5. Input all required variables.
6. System is now ready to target apply out of nozzle B.

Nozzle A can be used in conjunction with nozzle B during See & Spray operation. When nozzle A is used in conjunction with nozzle B in See & Spray, nozzle A can be set up with the same functionality that ExactApply (PWM spraying) offers currently for traditional broadcast spraying. When using nozzle A with PWM, a target rate can be input and the system will adjust the PWM signal for nozzle A to meet the expected rate. Additional setup is required to ensure that proper rate can be achieved.

To traditional broadcast apply using PWM from nozzle A and target apply from nozzle B:

1. Select the proper nozzle tip size for the rate desired for traditional broadcast spraying out of nozzle A, and rotate that nozzle tip to the forward position on the nozzle turret.

See Determine Nozzle Tip Sizes and Nozzle Turret Orientation in this section for additional information.

2. Select the proper nozzle tip size for the rate desired for target application out of nozzle B, and move that nozzle to the rear location on the nozzle turret.

See Determine Nozzle Tip Sizes and Nozzle Turret in this section for additional information.

3. Go to Menu > Machine Settings > Boom and Nozzles > ExactApply Configuration > Manual Setup.
4. Select Auto in the Valve Pulsing Mode drop-down menu.
5. Select A+B in the Spray Mode drop-down menu.
6. Select See & Spray in the Spray Method drop-down menu.
7. Select or edit the rate to be broadcast applied from nozzle A. See Determine Nozzle Tip Sizes and Desired Application Rate later in this section.
8. Input the desired rate to be applied from nozzle B.

See Determine Nozzle Tip Sizes and Desired Application Rate later in this section.

9. System is now ready to broadcast spray from nozzle A and target spray out of nozzle B.

Nozzle A can also be set up to traditional broadcast (non-PWM). When A+B is selected and nozzle A pulsing is set to OFF, Nozzle A will revert to traditional broadcast at the pressure of the boom plumbing, determined by nozzle B attributes, and the rate is determined by the orifice size (tip) installed for nozzle A. Additional setup for proper nozzle size is required for the desired application rate.

To traditional broadcast apply using non-PWM from nozzle A and target apply from nozzle B:

1. Select the proper nozzle tip size for the rate desired for broadcast application out of nozzle A and rotate that nozzle tip to the forward position on the nozzle turret.

See Determine Nozzle Tip Sizes and Nozzle Turret in this section for additional information.

2. Select the proper nozzle tip size for the rate desired for target application out of nozzle B, and move that nozzle tip to rear location on the nozzle turret.

See Determine Nozzle Tip Sizes and Nozzle Turret Orientation in this section for additional information.

3. Go to Menu > Machine Settings > Boom and Nozzles > ExactApply Configuration > Manual Setup.
4. Select OFF in the Valve Pulsing Mode drop-down menu.
5. Select A+B in the Spray Mode drop-down menu.
6. Select See & Spray in the Spray Method drop-down menu.
7. Input the desired rate to be applied from nozzle B. See Determine Nozzle Tip Sizes and Desired Application Rate later in this section.
8. System will now target apply out of nozzle B and traditional broadcast apply out of nozzle A.

The rate from nozzle A will be calculated using the nozzle tip selected for nozzle A and the boom pressure. Pressure within the boom plumbing system will be determined by nozzle B rate.

Nozzle Turret Orientation

See & Spray will only function from nozzle B.

See & Spray may be combined with a traditional broadcast application from nozzle A (A+B See & Spray mode). To operate in this mode:

- Nozzle A must have turret 1, 2, or 3 properly rotated to the front position.
- Nozzle A can traditional broadcast apply product with the following full ExactApply functionality:

- Pulse width modulation (PWM)
- Turn compensation
- Individual nozzle control
- Nozzle B must have turret 4, 5, or 6 properly rotated to the rear position.

Nozzle B will have the following limited ExactApply functionality:

- No pulse width modulation (PWM)
- No turn compensation
- Individual nozzle control

NOTE: Nozzle A can also be set to conventional pressure-based application (non-PWM). When nozzle A is setup for non-PWM application in conjunction with See & Spray Ultimate, the rate is pressure based and not user selectable.

Nozzle B will target apply product via commands from the See & Spray Ultimate camera detection system based on live plant (green color) targets identified.

Nozzle B commands will be 100% duty cycle commands for nozzle B fully ON when applying.

Determine Nozzle Tip Sizes

Consider the following when selecting nozzle tip size:

- Nozzle tip size for nozzle A must be sized properly for the rate desired in correlation to the rate desired from nozzle B when nozzles A and B are being used with See & Spray.
- Install all nozzles on nozzle B to point rearward when using the nozzles with an inclined spray pattern.
- If windy conditions may push the spray away from the target, it is recommended to set up See & Spray with setting the buffer width one step wider.
- Always follow the chemical label rates during application. When using See & Spray, use an adequate carrier rate to ensure proper coverage of weeds.
- A contact chemical works best with setting the buffer width one step wider.
- A systemic chemical works best with even coverage nozzle types.
- Setting the buffer width one step wider feature can be utilized in the See & Spray setup.

Use the following formulas to select a proper nozzle tip for nozzle A.

When nozzle A is set to auto pulsing:

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

N156488—UN—03AUG21

Nozzle A Is Set to Auto Pulsing

- A—Desired Traditional Broadcast Rate (nozzle A)
 B—Desired Target Rate (nozzle B)
 C—Target Spray Nozzle Tip Size (nozzle B)
 D—Desired Duty Cycle Percentage Expressed as a Decimal (e.g. 65% = 0.65)
 E—Traditional Broadcast Nozzle Tip Size (nozzle A)

NOTE: Desired duty cycle percentage for optimum turn compensation is 65—70% for pulse width modulating (PWM) spraying.

When nozzle A is set to non-PWM:

$$\frac{A}{B} \times C = D$$

N155766—UN—17MAY21

Nozzle A Is Set to non-PWM

- A—Desired Traditional Broadcast Rate (nozzle A)
 B—Desired Target Rate (nozzle B)
 C—Target Spray Nozzle Tip Size (nozzle B)
 D—Traditional Broadcast Spray Nozzle Tip Size (nozzle A)

Example of nozzle B tip size calculation = GPA x MPH x W / 5940:

- Desired target spray application rate from nozzle B = 15 gpa.
- Desired traditional broadcast spray application rate from nozzle B = 10 gpa.
- Desired travel speed = 10 mph.
- Machine setup is 15 in nozzle spacing on a 120 ft boom.

15 x 10 x 15 / 5940 = 0.38 nozzle tip flow rate = 04 red nozzle tip.

Example of nozzle A tip size calculation = A GPA / B GPA x target spray nozzle tip size = non-PWM nozzle A tip size:

10 / 15 x 4 = 2.67 or 025 nozzle tip at 50 psi, or 03 nozzle tip at 40 psi.

2.67 / 0.6 or 04 red tip for PWM nozzle A spraying.

Desired Application Rate

There are two areas in which application rate input is required to be input when spraying in A+B with See & Spray, where nozzle B uses See & Spray and nozzle A is set to auto pulsing.

NOTE: When non-PWM application is in A+B mode with See & Spray enabled for nozzle B, nozzle A application rate is calculated based on nozzle tip A input and boom pressure. This rate is not adjustable and proper nozzle tip selection is required.

- Traditional broadcast target rate within the Spray System application:
 When See & Spray is enabled, the input or selected target rate defines the traditional broadcast application rate out of nozzle A when spray method A+B is selected from the Nozzle Turret Setup.
- See & Spray target application rate within the Spray System application:
 When See & Spray is enabled, this input defines the targeted application rate out of nozzle B. This rate input determines the boom plumbing system pressure when spray method A+B or B Only is selected from the Nozzle Turret Setup.

NOTE: This rate will determine the system spray pressure within the boom plumbing. Nozzle tip sizing and selection is required to ensure that proper application rate and pressure are achieved for the desired machine speed during application from both nozzle A and nozzle B.

NOTE: Recommended minimum application rate is 10 gal/ac.

- Total will be filled in, showing the combined amount to be targeted when both nozzles A and B are actively applying.

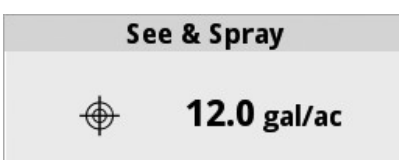
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Machine and Display Application Setup

1. Perform all daily maintenance items. (See machine Operator's Manual for details.)

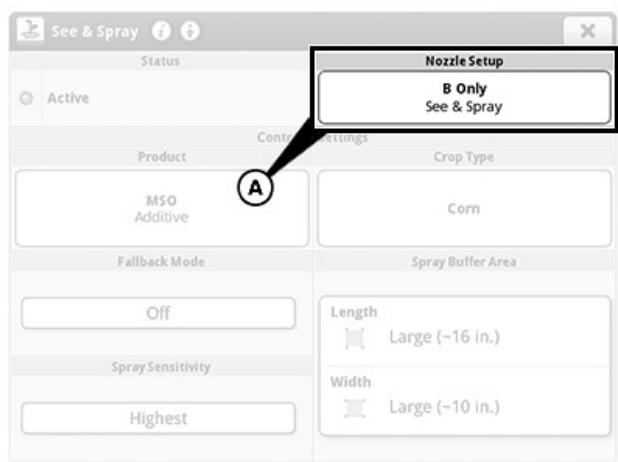
IMPORTANT: Avoid damage to the camera lenses. Do not use chemical cleaners, high-pressure water, or highly pressurized air when cleaning lenses.

- Clean camera lenses. Remove as much debris as possible using a spray bottle with water, a damp cloth with light pressure, or low-pressure air. A soft cloth with a mild detergent and water may be used to remove grease from the lens.
- Clean the See & Spray boom lights.
- Access the Spray System application by selecting Menu > Machine Settings > Spray System, or select Rate on the boom widget. Enter the desired See & Spray target rate.

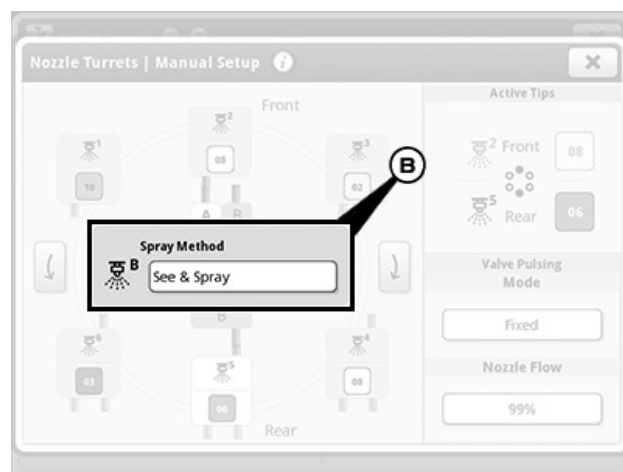


N156487—UN—02AUG21

- Select the See & Spray target rate.
- Enter the desired target rate and select OK.
- Select nozzles that are appropriate for the application requirements.
- Rotate the turrets so that nozzles 1, 2, and 3 are in the forward A position and nozzles 4, 5, and 6 are in the rearward position.



N163874—UN—28FEB23



N163875—UN—28FEB23



N163876—UN—28FEB23



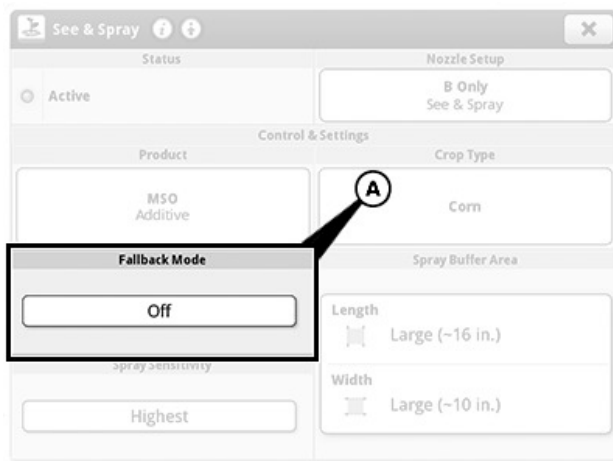
N151093—UN—24APR20

A—Nozzle Turret Setup
B—Spray Method

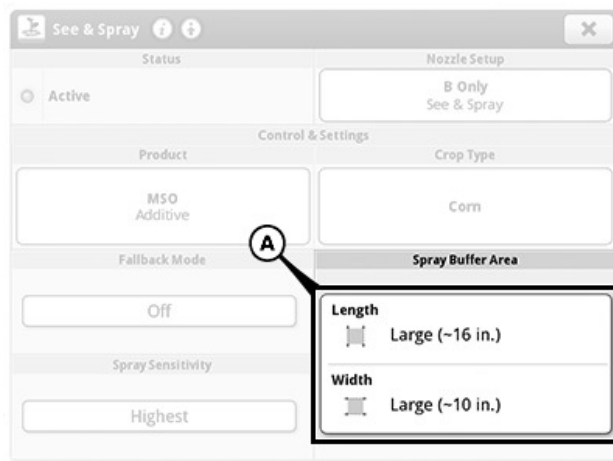
- Select Nozzle Turret Setup (A) from the See & Spray Premium main page.
- Select Spray Method (B) on the Nozzle Turrets/Manual Setup page.
- Enter the desired spray method for both the A and B nozzles on the Spray Setup page.
- Select OK to save settings and activate the system.

NOTE: This system requires sensor input from the BoomTrac Pro system, but BoomTrac Pro is not required to be ON during operation.

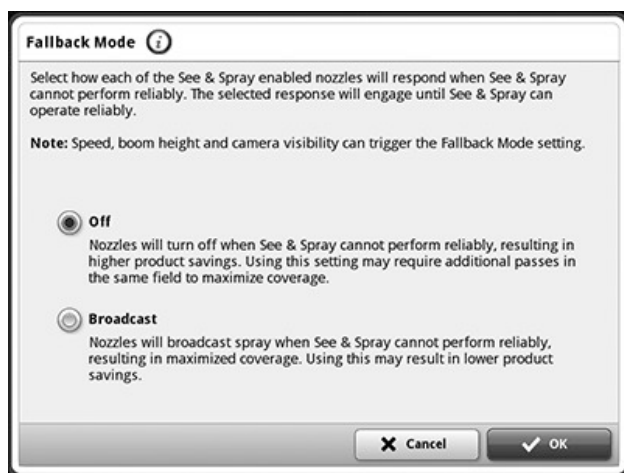
- Verify that all software updates have been made and no fault codes exist.
- Go to Menu > Machine Settings Tab > See & Spray. Set up the following configurable settings:



N163877—UN—28FEB23

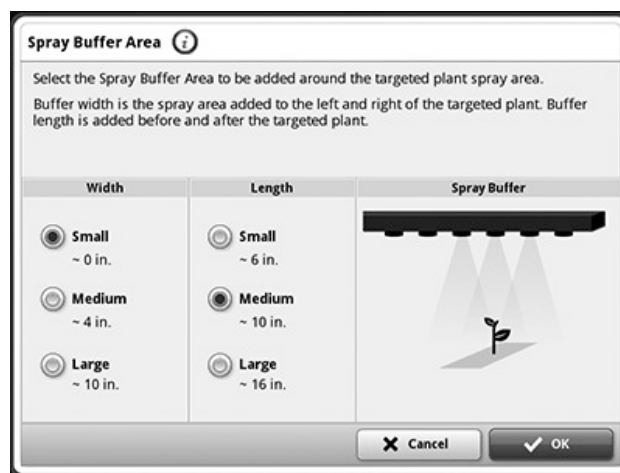


N163862—UN—06FEB23



N163878—UN—28FEB23

A—Fallback Mode



N163879—UN—28FEB23

Spray Buffer Area

- a. Select **Fallback Mode** (A) and set to Broadcast (default) or OFF.
 - When Broadcast is selected, if the confidence level of the system is not fully or partially met, nozzle B reverts to Broadcast. Nozzle B will then broadcast apply product from the affected nozzles until confidence levels are back within optimal levels.
 - When OFF is selected, if the confidence level is inadequate, Nozzle B reverts to OFF. Nozzle B will not apply any product from the affected nozzles until confidence levels are back within optimal levels.

A—Spray Buffer Area

- b. Select **Spray Buffer Area** (A).

This setting adjusts the minimum spray length the system applies when a green object is detected.

NOTE: The system uses inputs such as nozzle speed and desired buffer setting to determine when the nozzle starts and stops spraying. This relates to the minimum time in milliseconds that an enabled command is sent to the nozzle. This setting correlates to linear distance.

It is recommended to increase the buffer length when operating at varying speeds, if accelerating and decelerating often, or if operating outside the ideal 30—50 psi spray pressure setting.

If another target is detected during the time an ON command is currently active, the command extends the minimum spray length.

For best results, select Large when operating in windy conditions or at higher boom heights.

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above 16 km/h (10 mph). Monitor all field conditions and status indicator to adjust operating method as needed to get the most out of the system.



N118420—UN—02NOV16

Operate Machine

IMPORTANT: Improper system operation can occur when operating with the orifice valve in the incorrect position. Always move the orifice to the standard flow position to avoid issues when using this system.

NOTE: When operating in dusty conditions, slow machine speed and increase spray sensitivity to improve system performance.

1. Open orifice valve to standard flow position. Change the flow rate mode to standard flow on the display.
 - a. Go to Menu > Machine Settings > Spray System.
 - b. Touch the screen area under Flow Rate Mode.
 - c. Select Standard Flow from the Flow Rate Mode screen.
 - d. Press the OK button.
2. Avoid operating See & Spray when wind speeds are

3. Operate machine and monitor the See & Spray status using the status indicator on the home page.

- Indicator gray—System is not fully set up.
- Indicator green—System is active.
- Indicator orange—System is in partial or full fallback mode.
- Indicator red—System has recognized a full or partial system fault.

4. Watch for window shades on the display for alerts that confidence levels of the inputs are out of range, causing the system to revert to fallback mode settings for the affected nozzles.

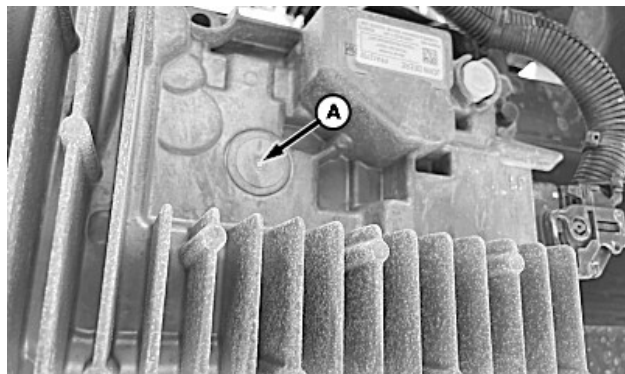
During operation, the system must remain within a working range with all criteria met for proper system performance and functionality.

The following table is a list of possible fallback conditions.

MY 2018-2026 S&S 1.0		
Optimal Boom Height	Targeted Herbicide	500—1200 mm (20—47")
	Variable Rate	500—1675 mm (20—66")
Optimal vehicle speed	Vehicle speed is optimal until See & Spray System reaches fallback mode	

ouo6092,1744383960228-19-28MAY26

Vision Processing Unit Status



A—LED Indicator

N163307—UN—29NOV22

NOTE: Each vision processing unit (VPU) has a built-in LED indicator (A) to check status for each controller and aid in troubleshooting.

Solid green—VPU is powered on and the application is running.

Two purple flashes—VPU CAN bus communications are not functioning.

Four short yellow flashes—VPU Ethernet communication is not functioning.

Solid white or solid blue—VPU is starting up.

Blue flashes—VPU is shutting down.

Rapid blue flashes—VPU voltage is below 9 V.

Alternating red/green—VPU is in recovery mode.

If multiple faults are present, the VPU will cycle through each fault with a 3-second pause between each fault.

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Maintenance

Service Spray Equipment Safely

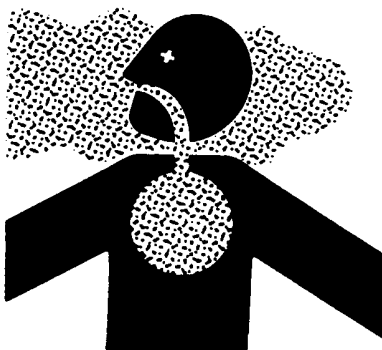
⚠ CAUTION: Injection system can contain hazardous material which can cause serious injury or death to you or others. Wear protective clothing, eye wear, and gloves. Do not drain solution onto the ground. Drain into a container.

Before performing any service activity:

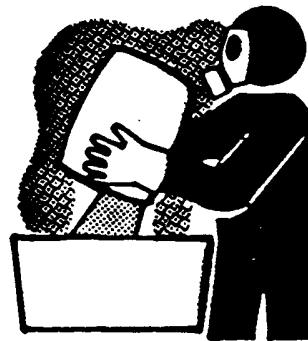
- Wear appropriate personal protective equipment (see Handle Agricultural Chemicals Safely in this section)
- Clean vehicle (see Clean Vehicle of Hazardous Chemicals, Including Pesticide in this section)
- Drain Solution Tank (see Draining Solution Tank in the machine operator's manual)
- Rinse wet system (see Operate Rinse System (Rinsing Solution Tank and Boom) or Using Load Station Rinse in the machine operator's manual)
- Drain Direct Inject Chemical Tanks (see Drain Chemical Tanks in the Filling and Draining section). *Direct Inject and See & Spray are not compatible.*
- Rinse Direct Injection System (see System Rinse section). *Direct Inject and See & Spray are not compatible.*
- Relieve Boom Pressure (see Relieving Boom Pressure in the Operating section)

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Handle Agricultural Chemicals Safely



TS220—UN—15APR13



A34471

A34471—UN—11OCT88

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

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

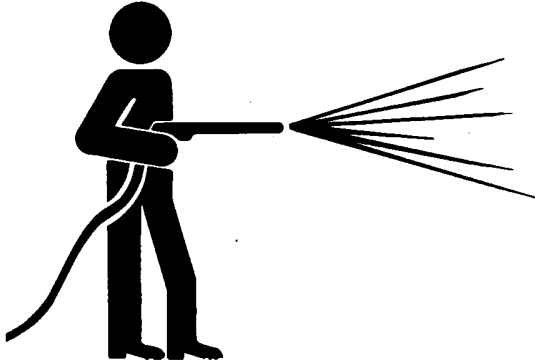
Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled **'Warning'**: Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled **'Caution'**: Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.
- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse

empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10

Clean Vehicle of Hazardous Chemicals, Including Pesticides



T6642EJ—UN—18OCT88

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.

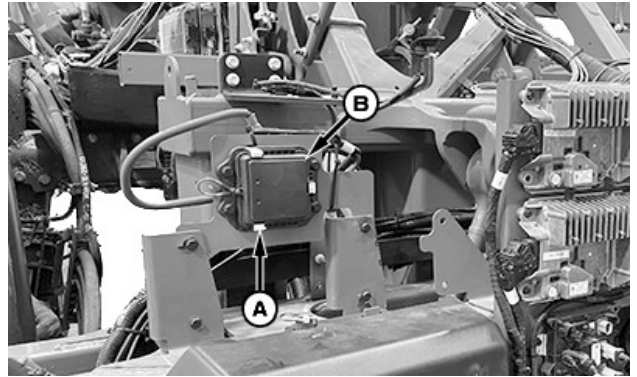
1. Sweep or vacuum the floor of cab.
2. Clean headliners and inside cowlings of cab.

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.

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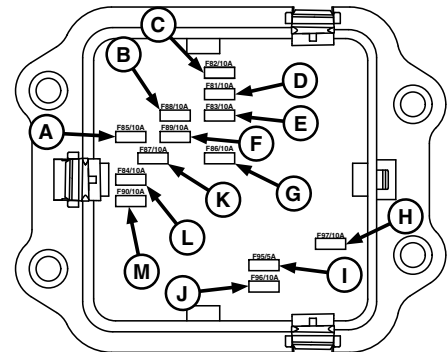
Replace Fuses



N163870—UN—28FEB23

A—Latch (3 used)
B—Cover

1. Release latches (A) and remove cover (B).



N163880—UN—16FEB23

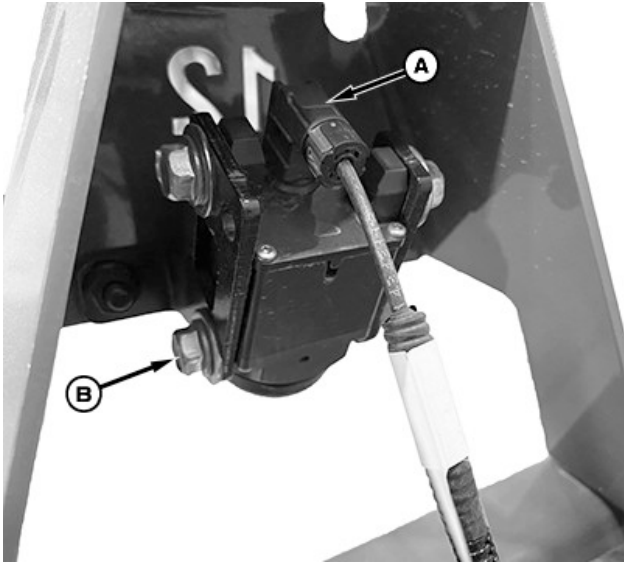
A—F85—VPU 5 Power (10 A)
B—F88—Spare (10 A)
C—F82—VPU 2 Power (10 A)
D—F81—VPU 1 Power (10 A)
E—F83—VPU 3 Power (10 A)
F—F89—Spare (10 A)
G—F86—VPU 6 Power (10 A)
H—F97—Spare (10 A)
I—F95—Ethernet Switch and GWC Power (5 A)
J—F96—Spare (10 A)
K—F87—Spare (10 A)
L—F84—VPU 4 Power (10 A)
M—F90—Spare (10 A)

2. Remove the fuse to be replaced (A—M) and replace with a new fuse of the same amp rating.

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Replace Cameras

IMPORTANT: Avoid harness connector (A) damage. Never use force or tools on the connector. Avoid camera damage. Do not remove the cap screws (B) or brackets from the camera body. Cap screws retaining the camera body to the brackets require a specific torque. Always remove the camera brackets from the boom brackets to avoid damage to the camera.



N163881—UN—28FEB23



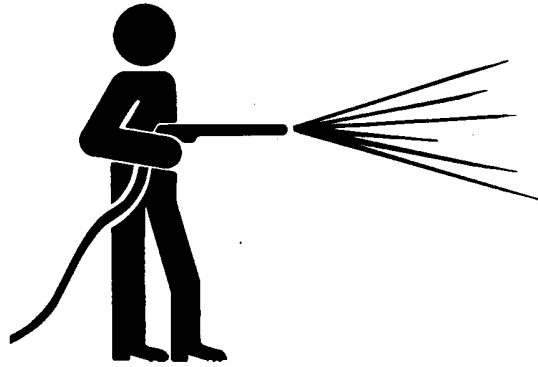
N163882—UN—28FEB23

A—Harness Connector
B—Cap Screw (4 used)
C—Cap Screw and Nut (2 used)

1. Disconnect the harness connector (A) from the camera.
2. Remove and retain the cap screws and nuts (C).
3. Remove the camera and bracket assembly.
4. Align the replacement camera and bracket assembly with the boom bracket and install the previously removed cap screws and nuts (C).
5. Connect the harness connector to the camera.
6. Perform the See & Spray calibration procedure. (See Calibrate System in the Calibration section of this book.)

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Component Cleaning Procedure and Check —Daily and as Required



T6642EJ—UN—18OCT88

IMPORTANT: Avoid damage to the cameras, lights, wiring harnesses, and electrical components. Use low pressure when using a pressure washer and avoid spraying directly at the harness connectors, cameras, lights, and other electrical components.

Camera Lenses



N163871—UN—28FEB23

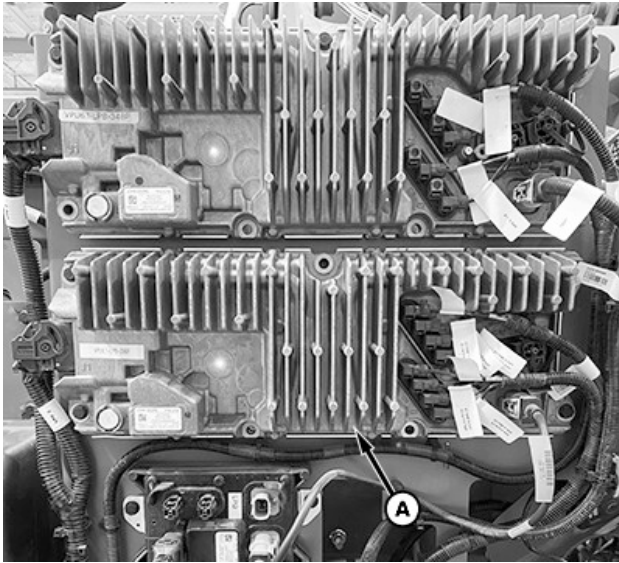
A—Camera Lens

IMPORTANT: Avoid damage to the camera lenses (A). Do not use chemical cleaners, high-pressure water, or high-pressure air when cleaning the lenses.

Clean lenses daily or as required using a spray bottle with water, a damp cloth with light pressure, or low-pressure air. A mild detergent may be used if there is grease on the lens.

Check each camera and mounting bracket for damage. If a camera is damaged, replace it. If a bracket is bent, the camera cannot function correctly and the bracket must be replaced.

Vision Processing Unit



N163873—UN—28FEB23

A—Vision Processing Unit

Ensure that all vision processing units (A) are clean.

IMPORTANT: Remove any dry grass or other easily combustible material.

Make sure all connectors are secure and that caps are present on all unused ports.

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Nozzle Alignment

Check the nozzles to confirm that alignment is correct. See & Spray nozzles are set up in spray mode "B", rear facing ONLY. If the See & Spray selected nozzles are angled forward, undesirable results can occur.

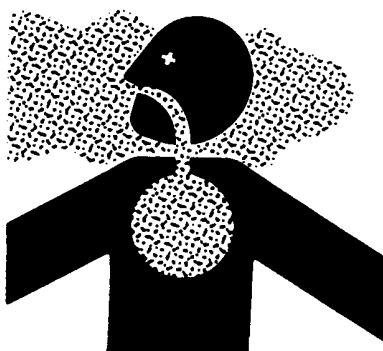
ouo6064,1693937357262-19-13SEP23

Storage

Service and Operate Chemical Sprayers Safely



TS272—UN—23AUG88



TS220—UN—15APR13

Chemicals used in agricultural sprayers 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. (See 'Handle agricultural chemicals safely' found in the Safety Section.)
- Fill, flush, calibrate, and decontaminate sprayer in an area where runoff will not reach ponds, lakes or streams, livestock areas, or gardens, or near other people.
- Keep children away from the chemicals, chemical solutions, and rinsates.
- If spray or chemical concentrate contacts skin, hands, or face, wash immediately with soap and water.
If spray or chemical concentrate gets into eyes, flush immediately with water.
- If nozzle clogs or system malfunctions, stop engine and relieve spray pressure from system.
- Do not place nozzle tips or other components to the mouth to clear obstructions. Keep spare tips on hand for replacement.
- Minimize risk of spray drift.
 - Use large nozzle tips operated at lower pressures

- Do not operate solution delivery system at pressures exceeding 345kPa (3.5 bar) (50 psi).
- Do not spray when winds exceed 16 km/h (10 mph).
- Do not spray when wind is blowing towards a nearby sensitive crop, garden, or populated area.
- Properly dispose of unused chemicals, flushing solution, and empty chemical containers.
- Decontaminate equipment used in mixing, transferring, and applying chemicals after use.

DX,WW,CHEM02-19-05APR04

Avoid Exposure To Chemicals



TS220—UN—15APR13



TS272—UN—23AUG88

⚠ CAUTION: Injection system can contain hazardous material which can cause serious injury or death to you or others. Wear protective clothing, eye wear, and gloves. Do not drain solution onto the ground. Drain into a container.
DO NOT RELY ONLY ON THIS CAB , CAB PRESSURE INDICATOR, OR CAB AIR FILTERS TO PROTECT AGAINST CHEMICAL EXPOSURE.

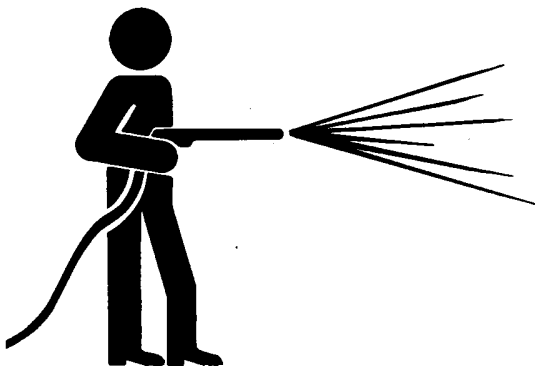
To reduce risk of chemical exposure:

- 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 application
- 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)
- 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

CS12167,000073C-19-05JUN26

Clean Vehicle of Hazardous Chemicals, Including Pesticides



T6642EJ—UN—18OCT88

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-19-18JAN21

Recommended Cleaners and Coatings

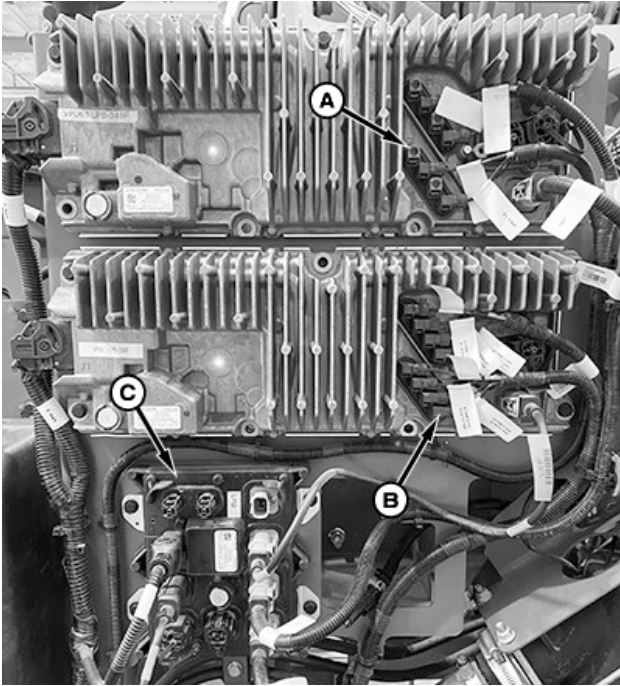
IMPORTANT: As with any chemical product, always read and follow directions.

Use John Deere SprayMaster cleaning agents, equipment coating, and winterizer fluid for best results. These chemicals can be obtained via regular spare part channels:

- PM434QT Incide-Out Spray Tank Cleaner
- PM433QT Erase Spray System Cleaner
- N305634 and TY26555 Sprayer Winterizer Fluid
- TY22032 and TY27529 Fluid Film

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Check Vision Processing Units and Ethernet Switches



N163872—UN—28FEB23

A—Unused Port Cap
B—Connector
C—Ethernet Switch

1. Verify that unused port caps (A) are present and connectors (B) are secure on the vision processing unit.
2. Verify that the connectors on the Ethernet switch (C) are secure.

aota2vy,1676405341495-19-13SEP23

Regulatory and Compliance Information

SOFTWARE TERMS AND CONDITIONS

IMPORTANT -- READ CAREFULLY: THIS SOFTWARE LICENSE AGREEMENT IS A LEGAL CONTRACT BETWEEN YOU AND THE LICENSOR ("LICENSOR") IDENTIFIED BELOW AND GOVERNS YOUR USE OF THE SOFTWARE DELIVERED TO YOUR MACHINE (THE "MACHINE").

BY INDICATING YOUR ACCEPTANCE ON A DISPLAY ON THE MACHINE, BY INSTALLING SOFTWARE TO THE MACHINE, OR USING SOFTWARE ON THE MACHINE, YOU ARE ACCEPTING AND AGREEING TO THE TERMS OF THIS LICENSE AGREEMENT WITH RESPECT TO THE SOFTWARE (THE "Software") THAT IS DELIVERED TO YOUR MACHINE. YOU AGREE THAT THIS SOFTWARE LICENSE AGREEMENT, INCLUDING THE WARRANTY DISCLAIMERS, LIMITATIONS OF LIABILITY AND TERMINATION PROVISIONS BELOW, IS BINDING UPON YOU, AND UPON ANY COMPANY ON WHOSE BEHALF YOU USE THE SOFTWARE AS WELL AS THE EMPLOYEES OF ANY SUCH COMPANY (COLLECTIVELY REFERRED TO AS "YOU" IN THIS SOFTWARE LICENSE AGREEMENT). IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT, OR IF YOU ARE NOT AUTHORIZED TO ACCEPT THESE TERMS ON BEHALF OF YOUR COMPANY OR ITS EMPLOYEES, PLEASE CLICK THE [Decline] ICON ON THE DISPLAY ON THE MACHINE TO DECLINE THESE TERMS AND CONDITIONS. THIS LICENSE AGREEMENT REPRESENTS THE ENTIRE AGREEMENT CONCERNING THE SOFTWARE BETWEEN YOU AND THE LICENSOR.

1.

Delivery of Software. Software may be delivered to your Machine by Licensor wirelessly or via an agent of Licensor, such as a dealer. If it is delivered wirelessly, you may be responsible for any data transmission fees incurred due to such delivery.

2.

License. Licensor hereby grants to you, and you accept, a nonexclusive license to use the Software in machine-readable, object code form, only as authorized in this License Agreement and the applicable provisions of the Operators' Manuals, which you agree to review carefully prior to using the Software. The Software may be used only on the Machine to which it was initially delivered. You agree that you will not assign, sublicense, transfer, pledge, lease, rent, or share your rights under this License Agreement, except that you may permanently transfer all of your rights under this License Agreement in connection with the sale of the Machine on which the Software covered by this Agreement is installed.

3.

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4.

License Fees. The license fees paid by you, if any, are paid in consideration of the licenses granted under this License Agreement.

5.

Limited Warranty. Licensor warrants, for your benefit alone and not for the benefit of any other party, that during the "**Warranty Period**" defined below, the Software will operate substantially in accordance with the applicable functional specifications ("**Specifications**") set forth in the Operators' Manuals. If, prior to expiration of the Warranty Period, the Software fails to perform substantially in accordance with the Specifications, you may return the Machine to the place of purchase for repair or replacement of the non-performing Software. The Warranty Period is ninety (90) days from the date of installation of the Software or the duration of the warranty period of the component of the Machine on which the Software is installed, whichever is longer. The Software Warranty Period does not affect the warranty period of the Machine itself or any component thereof.

6.

DISCLAIMER OF WARRANTIES. YOU HEREBY AGREE THAT THE LIMITED WARRANTY PROVIDED ABOVE (THE "**LIMITED WARRANTY**") CONSTITUTES YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY PROBLEM WHATSOEVER WITH THE SOFTWARE. EXCEPT AS PROVIDED IN THE LIMITED WARRANTY, THE SOFTWARE IS LICENSED "AS IS," AND LICENSOR, ITS AFFILIATES AND THIRD PARTY SUPPLIERS EXPRESSLY DISCLAIM AND YOU EXPRESSLY WAIVE, RELEASE AND RENOUNCE ALL WARRANTIES ARISING BY LAW OR OTHERWISE WITH RESPECT TO THE SOFTWARE, INCLUDING, BUT NOT LIMITED TO: ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; ANY IMPLIED WARRANTY ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE; ANY WARRANTY OF TITLE OR NON-INFRINGEMENT; AND, ANY OTHER WARRANTY ARISING UNDER ANY THEORY OF LAW, INCLUDING TORT, NEGLIGENCE, STRICT LIABILITY, CONTRACT

OR OTHER LEGAL OR EQUITABLE THEORY. NO REPRESENTATION OR OTHER AFFIRMATION OF FACT INCLUDING, BUT NOT LIMITED TO, STATEMENTS REGARDING SUITABILITY FOR USE, SHALL BE DEEMED TO BE A WARRANTY BY LICENSOR OR ANY OF ITS AFFILIATES OR THIRD PARTY SUPPLIERS. LICENSOR DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR WILL OPERATE WITHOUT INTERRUPTION.

7.

LIMITATION OF LIABILITY. EXCEPT AS SET FORTH IN THE LIMITED WARRANTY, UNDER NO CIRCUMSTANCES SHALL LICENSOR, ITS AFFILIATES OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO YOU OR TO ANY THIRD PARTIES FOR DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ANY LOSS OR DAMAGE CAUSED BY THE SOFTWARE; ANY PARTIAL OR TOTAL FAILURE OF THE SOFTWARE; PERFORMANCE, NONPERFORMANCE OR DELAYS IN CONNECTION WITH ANY INSTALLATION, MAINTENANCE, WARRANTY OR REPAIRS OF THE SOFTWARE, DAMAGES FOR CROP LOSS, DAMAGE TO LAND, LOST PROFITS, LOSS OF BUSINESS OR LOSS OF GOODWILL, LOSS OF USE OF EQUIPMENT OR SERVICES OR DAMAGES TO BUSINESS OR REPUTATION ARISING FROM THE PERFORMANCE OR NON-PERFORMANCE OF ANY ASPECT OF THIS AGREEMENT, WHETHER IN CONTRACT, TORT OR OTHERWISE, AND WHETHER OR NOT LICENSOR, ITS AFFILIATES OR ITS THIRD PARTY SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL LICENSOR'S CUMULATIVE LIABILITY TO YOU OR TO ANY OTHER PARTY FOR ANY LOSSES OR DAMAGES RESULTING FROM ANY CLAIMS, LAWSUITS, DEMANDS, OR ACTIONS ARISING FROM OR RELATING TO USE OF THE SOFTWARE EXCEED YOUR TOTAL PAYMENT FOR THE MACHINE AND FOR THE LICENSE OF THE SOFTWARE.

8.

Termination of License. Licensor may terminate the license granted under this Agreement upon written notice of termination provided to you if you violate any material term of this Agreement pertaining to your use of the Software or Licensor's rights, including, without limitation, the provisions of Sections 2 and 3 above.

9.

Compliance with Law. You agree that you will use the Software in accordance with United States law and the laws of the country in which you are located, as applicable, including foreign trade control laws and regulations. The Software may be subject to export and other foreign trade controls restricting re-sales and/or transfers to other countries and parties. By accepting the terms of this Agreement, you acknowledge that you understand that the Software may be so controlled, including, but not limited to, by the Export Administration

Regulations and/or the foreign trade control regulations of the Treasury Department of the United States. Any other provision of this Agreement to the contrary notwithstanding, you agree that the Software will not be resold, re-exported or otherwise transferred. The Software remains subject to applicable U.S. laws.

10.

Indemnification. You agree to defend, indemnify and hold Licensor, its affiliates and third party supplier, and their, officers, directors, employees, agents and representatives (each an "**Indemnified Party**"), harmless from and against all claims, demands, proceedings, injuries, liabilities, losses, or costs and expenses (including reasonable legal fees) brought by any third party against any such persons arising from or in connection with your use of the Software, regardless of whether such losses are caused, wholly or partially, by any negligence, breach of contract or other fault of an Indemnified Party.

11.

Costs of Litigation. If any claim or action is brought by either party to this License Agreement against the other party regarding the subject matter hereof, the prevailing party shall be entitled to recover, in addition to any other relief granted, reasonable attorney fees and expenses of litigation.

12.

Severability and Waiver. Should any term of this Agreement be declared void or unenforceable by any court of competent jurisdiction, such declaration shall have no effect on the remaining terms hereof. The failure of either party to enforce any rights granted hereunder or to take action against the other party in the event of any breach hereunder shall not be deemed a waiver by that party as to subsequent enforcement of rights of subsequent actions in the event of future breaches.

13.

Language Clause. If you are a resident of Canada at the time you accept this Agreement, then the parties hereby acknowledge that they have required this Agreement, and all other documents relating hereto, be drawn up in the English language only. Les parties reconnaissent avoir demandé que le présent contrat ainsi que toute autre entente ou avis requis ou permis à être conclu ou donné en vertu des stipulations du présent contrat, soient rédigés en langue anglaise seulement. If you are a resident of any country other than the United States, Canada, Great Britain, Australia or New Zealand then you agree as follows: there may be a translated version of this Agreement. If there is an inconsistency or contradiction between the translated version and the English version of this Agreement, the English version of this Agreement shall control.

14.

Assignment by Licensor. Licensor may assign this Agreement without your prior consent to any company or entity affiliated with Licensor, or by an assignment

associated with a corporate restructuring, merger or acquisition.

15.

Governing Law and Forum. This Agreement will be governed by and construed in accordance with the substantive laws identified in the table in Section 18, below. The respective courts of the venue identified in the table in Section 18, below, for the location of the Machine shall have non-exclusive jurisdiction over all disputes relating to this Agreement. This Agreement will not be governed by the conflict of law rules of any jurisdiction or the United Nations Convention on Contracts for the International Sale of Goods, the application of which is expressly excluded.

16.

Specific Exceptions.

16.1

Limited Warranty for Users Residing in European Economic Area Countries or Switzerland. If you obtained the Software in any European Economic Area country or Switzerland, and you usually reside in such country, then Section 6 does not apply, instead, Licensor warrants that the Software provides the functionalities set forth in the Operators Manuals (the "agreed upon functionalities") for the Warranty Period. As used in this Section, "Warranty Period" means one (1) year. Non-substantial variation from the agreed upon functionalities shall not be considered and does not establish any warranty rights. THIS LIMITED WARRANTY DOES NOT APPLY TO SOFTWARE PROVIDED TO YOU FREE OF CHARGE, FOR EXAMPLE, UPDATES, OR SOFTWARE THAT HAS BEEN ALTERED BY YOU, TO THE EXTENT SUCH ALTERATIONS CAUSED A DEFECT. To make a warranty claim, during the Warranty Period you must return, at our expense, the Software and proof of purchase to the location where you obtained it. If the functionalities of the Software vary substantially from the agreed upon functionalities, Licensor is entitled -- by way of re-performance and at its own discretion -- to repair or replace the Software. If this fails, you are entitled to a reduction of the purchase price (reduction) or to cancel the purchase agreement (rescission). For further warranty information, please contact Licensor at the address listed in Section 18.

16.2

Limitation of Liability for Users Residing in European Economic Area Countries or Switzerland.

(a) If you obtained the Software in any European Economic Area country or Switzerland, and you usually reside in such country, then Sections 7 and 10 do not apply. Instead, Licensor's statutory liability for damages shall be limited as follows: (a) Licensor shall be liable only up to the amount of damages as typically foreseeable at the time of entering into this Agreement in respect of damages caused by a slightly negligent breach of a material contractual obligation and (b) Licensor shall not be liable for damages caused by a slightly negligent breach of a non-material contractual obligation.

(b) The aforesaid limitation of liability shall not apply to any mandatory statutory liability, in particular, to liability under the German Product Liability Act, liability for assuming a specific guarantee or liability for culpably caused personal injuries.

(c) You are required to take all reasonable measures to avoid and reduce damages, in particular to make back-up copies of the Software and your computer data subject to the provisions of this Agreement.

17.

Representations of Licensee. BY ACCEPTING THIS AGREEMENT, YOU: (A) ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTAND THIS AGREEMENT; (B) REPRESENT THAT YOU HAVE THE AUTHORITY TO ENTER INTO THIS AGREEMENT; (C) AGREE THAT THIS AGREEMENT IS ENFORCEABLE AGAINST YOU AND ANY LEGAL ENTITY THAT OBTAINED THE SOFTWARE AND ON WHOSE BEHALF IT IS USED; AND, (D) AGREE TO PERFORM THE OBLIGATIONS OF THIS AGREEMENT.

18.

Identification of Licensor and Notices. The Licensor is the entity identified in the table below. All notices to Licensor shall be sent by certified or registered mail to the corresponding address for the Licensor given below. In each case a copy of the notice shall also be sent to John Deere Intelligent Solutions Group, ATTN: Legal, 4140 114th Street Urbandale, IA 50322 U.S.A. All notices to Licensor shall be effective upon receipt. All notices required to be given to you shall, in Licensor's sole discretion, either be sent via certified or registered mail to the address given to Licensor in connection with your purchase of the Machine. Either method of notification used by Licensor shall be effective upon dispatch. You agree to notify Licensor of any change in your address in the manner set forth above.

Place of Purchase	Address	Governing Law	Venue
United States of America	John Deere Shared Services, Inc. One John Deere Place Moline, IL 61265 U.S.A.	State of Illinois, USA	Rock Island County, Illinois, USA
Argentina	Industrias John Deere Argentina, S.A. Casilla de Correo 80 Rosario (Santa Fe), 2000, Argentina	Province of Santa Fe, Argentina	Province of Santa Fe, Argentina
Australia or New Zealand	John Deere Limited (Australia) P.O. Box 2022 Crestmead, Queensland, Australia 4132	State of Queensland, Australia	State of Queensland, Australia

Regulatory and Compliance Information

Canada	John Deere Limited 295 Hunter Road P.O. Box 1000 Grimsby, ON L9K 1M3	Province of Ontario, Canada	Province of Ontario, Canada
Chile	John Deere Water, S.A. Cerro Santa Lucia 9990 Quilicura, Santiago, Chile	Province of Santiago, Chile	Province of Santiago, Chile
Mexico	Industrias John Deere, S.A. de C.V. Boulevard Diaz Ordaz #500 Garza Garcia Nuevo Leon 66210, Mexico	State of Nuevo Leon, Mexico	State of Nuevo Leon, Mexico
Europe	John Deere European Technology and Innovation Center Strassburger Allee 3 67657 Kaiserslautern, Germany	Federal Republic of Germany	Kaiserslautern, Germany
Other	The John Deere entity identified for the location of your Machine on www.JDLink.com .	The John Deere entity identified for the location of your Machine on www.JDLink.com .	The John Deere entity identified for the location of your Machine on www.JDLink.com .

OUO6043,0000495-19-23OCT25

License Agreement For John Deere Image Processing Module Software

IMPORTANT -- READ CAREFULLY: THIS LICENSE AGREEMENT (THE "AGREEMENT") IS A LEGAL CONTRACT BETWEEN YOU AND JOHN DEERE SHARED SERVICES, INC., A CORPORATION HAVING A PRINCIPAL ADDRESS OF ONE JOHN DEERE PLACE, MOLINE, IL 61265 ("JOHN DEERE") AND GOVERNS YOUR USE OF THE JOHN DEERE IMAGE PROCESING MODULE (THE "IPM").

BY USING THE IPM, YOU ARE ACCEPTING AND AGREEING TO THE TERMS OF THIS LICENSE AGREEMENT WITH RESPECT TO THE SOFTWARE (THE "SOFTWARE") THAT HAS BEEN PRE-INSTALLED ON THE IPM. YOU AGREE THAT THIS LICENSE AGREEMENT, INCLUDING THE WARRANTY DISCLAIMERS, LIMITATIONS OF LIABILITY, TERMINATION, AND ARBITRATION PROVISIONS BELOW, IS BINDING UPON YOU AS OF THE DATE YOU FIRST USE THE IPM (THE "EFFECTIVE DATE"), AND UPON ANY COMPANY ON WHOSE BEHALF YOU USE THE SOFTWARE AND IPM AS WELL AS THE EMPLOYEES OF ANY SUCH COMPANY (COLLECTIVELY REFERRED TO AS "YOU" IN THIS LICENSE AGREEMENT). IF YOU ARE UNABLE OR UNWILLING TO COMPLY WITH ANY OF THESE TERMS, YOU MUST IMMEDIATELY DISCONTINUE USING THE SOFTWARE, AND CONTACT JOHN DEERE OR YOUR DEALER. THIS CONTRACT IS BETWEEN YOU AND JOHN DEERE ONLY. NO THIRD PARTY – INCLUDING BUT NOT LIMITED TO ANY JOHN DEERE DEALER – HAS THE AUTHORITY TO CHANGE OR SUPPLEMENT THIS LICENSE AGREEMENT. IF YOU WERE ASSIGNED THIS LICENSE AGREEMENT FROM A THIRD PARTY (SUCH AS A JOHN DEERE DEALER), YOU UNDERSTAND AND AGREE THAT NO AGENCY RELATIONSHIP BETWEEN JOHN DEERE AND THAT

THIRD PARTY IS IMPLIED OR SUGGESTED BY THE FACT THAT SUCH THIRD PARTY ASSIGNED THIS LICENSE AGREEMENT TO YOU. THIS LICENSE AGREEMENT REPRESENTS THE ENTIRE AGREEMENT CONCERNING THE SOFTWARE BETWEEN YOU AND JOHN DEERE AND IT REPLACES ANY PRIOR PROPOSAL, REPRESENTATION, OR UNDERSTANDING BETWEEN YOU AND JOHN DEERE.

1. Description of Software. Your IPM comes with all Software pre-installed. The Software enables the IPM to receive images, process them, and transmit images and other information to a display on a John Deere machine in support of a software application.

2. Use of Images The images received, processed and transmitted by the IPM are directed at the field, crop, machine or ancillary machines. The camera devices creating these images may also capture images of the machine operator or bystanders during system operation. These images may be shown to the operator in the operator station, recorded within the system for troubleshooting, or recorded within the system for improving system performance. By using the IPM, you hereby consent to such collection, storage, and use of these images. To prevent images from being captured by the camera devices, refer to the operator manual for the applicable machine for instruction on how to turn off the system.

3. License John Deere hereby grants to you, and you accept, a nonexclusive license to use the Software in machine-readable, object code form, only in a country authorized by John Deere and only as otherwise authorized in this Agreement and the applicable provisions of the applicable machine operators' manual, which you agree to review carefully prior to using the Software. The Software may be used only on the IPM on which it was initially installed. You agree that you will

not assign, sublicense, transfer, pledge, lease, rent, or share your rights under this Agreement, except that you may permanently transfer all of your rights under this Agreement in connection with the sale of the IPM on which the Software covered by this Agreement is installed to a new owner for use solely in a country authorized by John Deere. If you sell or otherwise transfer the ownership of the IPM, you agree that you will require such transferee to accept terms no less restrictive than those in this Agreement. In addition to the foregoing, you agree that you will not obtain or attempt to obtain the Software using false or untrue information or without paying the appropriate fees and charges, nor will you knowingly permit others to do so, and you agree to pay any license fees and charges that would otherwise have been due. No other use of the Software is permitted by this Agreement except as set forth in this Paragraph 3.

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6. Limited Warranty. John Deere warrants, for your benefit alone and not for the benefit of any other party, that during the "Warranty Period" defined below, the Software will operate substantially in accordance with the applicable functional specifications ("Specifications") set forth in the Receiver documentation. JOHN DEERE DOES NOT WARRANT THAT THE OPERATION OF THE SOFTWARE WILL BE UNINTERRUPTED OR ERROR FREE OR THAT IT WILL MEET YOUR NEEDS. Your exclusive remedy and the sole obligation of John Deere and (as applicable) its service partners in the event of any warranty claim or any other contract deficiency shall be for John Deere or (as applicable) its service partners to use commercially reasonable efforts to correct the deficiency or, if correction cannot be accomplished in thirty (30) days, to refund an equitable part of any license fees for the Software determined in reference to your prior use of the Software and the impact of the deficiency. You acknowledge that this warranty does not apply where a deficiency in the operation of the Software is due to circumstances beyond John Deere's reasonable control and/or is caused by an act or omission of a third party, including, but not limited to, equipment failure, acts of God, strikes, or other similar causes. The "Warranty Period" is one (1) year from the date you take delivery of the IPM.

7. DISCLAIMER OF WARRANTIES. YOU HEREBY AGREE THAT THE LIMITED WARRANTY PROVIDED ABOVE (THE "Limited Warranty") CONSTITUTES YOUR SOLE AND EXCLUSIVE REMEDY FOR ANY PROBLEM WHATSOEVER WITH THE SOFTWARE. EXCEPT AS PROVIDED IN THE LIMITED WARRANTY, THE SOFTWARE IS LICENSED "AS IS" AND "AS AVAILABLE" AND JOHN DEERE, ITS AFFILIATES AND THIRD PARTY SUPPLIERS EXPRESSLY DISCLAIM AND YOU EXPRESSLY WAIVE, RELEASE AND RENOUNCE ALL WARRANTIES ARISING BY LAW OR OTHERWISE WITH RESPECT TO THE SOFTWARE, INCLUDING, BUT NOT LIMITED TO: ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE; ANY IMPLIED WARRANTY ARISING FROM COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE; ANY WARRANTY OF TITLE OR NON-INFRINGEMENT;

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9. Software Maintenance. John Deere may, at its sole option, offer you maintenance of the Software, even though the Warranty Period has expired. Such maintenance may include providing modifications, corrections or enhancements ("Upgrades") to the Software and/or the applicable operators' manuals. John Deere reserves the right, in its sole discretion, to charge you for maintenance (except in cases where corrections are provided under the Limited Warranty). Your acceptance of this Agreement constitutes your agreement that any Upgrades will be deemed included in the Software as defined in this Agreement and that they shall be governed by the terms and conditions applicable to the Software under this Agreement.

10. Term and Termination.

a. Term. This Agreement will commence as of the Effective Date and expire upon the earlier of i) the useful life of the IPM or ii) the date John

Deere terminates this Agreement in accordance with the terms of this Paragraph 10. This Agreement does not automatically renew.

b. Termination. John Deere may terminate the license granted under this Agreement upon written notice of termination provided to you if you violate any material term of this Agreement pertaining to your use of the Software or John Deere's rights, including, without limitation, the provisions of Sections 3 and 4 above.

11. Compliance with Law. You agree that you will use the Software in accordance with United States law and the laws of the country in which you are located, as applicable, including foreign trade control laws and regulations. The Software may be subject to export and other foreign trade controls restricting re-sales and/or transfers to other countries and parties. By accepting the terms of this Agreement, you acknowledge that you understand that the Software may be so controlled, including, but not limited to, by the Export Administration Regulations and/or the foreign trade control regulations of the Treasury Department of the United States. The Software remains subject to applicable U.S. laws.

12. Indemnification. You agree to defend, indemnify and hold John Deere, its affiliates and third party supplier, and their, officers, directors, employees, agents and representatives (each an "Indemnified Party"), harmless from and against all claims, demands proceedings, injuries, liabilities, losses, or costs and expenses (including reasonable legal fees) brought by any third party against any such persons arising from or in connection with your misuse of the IPM or the Software or your breach of any term of this Agreement.

13. Trademark. No right, license, or interest to any trademark is granted hereunder, and you agree that no such right, license, or interest shall be asserted by you with respect to any John Deere trademarks.

14. Costs of Litigation. If any claim or action is brought by either party to this Agreement against the other party regarding the subject matter hereof, the prevailing party shall be entitled to recover, in addition to any other relief granted, reasonable attorney, arbitrators, and dispute resolution center administrative fees and expenses of litigation.

15. Severability and Waiver. Should any term of this Agreement be declared void or unenforceable by any court of competent jurisdiction, such declaration shall have no effect on the remaining terms hereof. The failure of either party to enforce any rights granted hereunder or to take action against the other party in the event of any breach hereunder shall not be deemed a waiver by that party as to subsequent enforcement of rights of subsequent actions in the event of future breaches.

16. Language Clause. Unless the laws of the location in which you reside require otherwise, the parties hereby acknowledge that they have required this Agreement, and all other documents relating hereto, be drawn up in the English language only. There may be a translated version of this License Agreement. If there is

an inconsistency or contradiction between the translated version and the English version of this Agreement, the English version of this Agreement shall control unless the laws of the location in which you reside require that a different version control. Les parties reconnaissent avoir demandé que le présent contrat ainsi que toute autre entente ou avis requis ou permis tre conclu ou donné en vertu des stipulations du présent contrat, soient rédigés en langue anglaise seulement.

17. Assignment by John Deere. John Deere may assign this Agreement without your prior consent to any company or entity affiliated with John Deere or by an assignment associated with a corporate restructuring, merger or acquisition.

18. Governing Law and Forum. John Deere may assign this Agreement without your prior consent to any company or entity affiliated with John Deere or by an assignment associated with a corporate restructuring, merger or acquisition.

19. Arbitration. IF YOU RESIDE IN A JURISDICTION WHEREIN THE ENFORCEABILITY OF THE TERMS OF SECTION 18 IS DEPENDENT UPON THE PARTIES AGREEING TO SUBMIT TO ARBITRATION, THEN ANY CONTROVERSY OR CLAIM ARISING OUT OF OR RELATING TO THIS AGREEMENT SHALL BE DETERMINED BY ARBITRATION IN ACCORDANCE WITH THE INTERNATIONAL ARBITRATION RULES OF THE INTERNATIONAL CENTRE FOR DISPUTE RESOLUTION ("ICDR") IN EFFECT AT THE TIME OF ITS INITIATION. THE ARBITRATION SHALL BE HELD BEFORE ONLY ONE ARBITRATOR APPOINTED BY THE ICDR. THE PLACE OF ARBITRATION SHALL BE CHICAGO, ILLINOIS, USA AND THE LANGUAGE OF THE ARBITRATION SHALL BE ENGLISH.

20. Representations of Licensee. BY ACCEPTING THIS AGREEMENT, YOU: (A) ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTAND THIS AGREEMENT; (B) REPRESENT THAT YOU HAVE THE AUTHORITY TO ENTER INTO THIS AGREEMENT; (C) AGREE THAT THIS AGREEMENT IS ENFORCEABLE AGAINST YOU AND ANY LEGAL ENTITY THAT OBTAINED THE SOFTWARE AND ON WHOSE BEHALF IT IS USED; (D) AGREE TO PERFORM THE OBLIGATIONS OF THIS AGREEMENT; AND (E) REPRESENT AND AGREE THAT ALL INFORMATION PROVIDED BY YOU IS TRUE AND ACCURATE TO THE BEST OF YOUR KNOWLEDGE.

21. Notices. All notices to John Deere shall be sent by certified or registered mail to John Deere Shared Services, Inc., One John Deere Place, Moline, IL 61265 U.S.A. In addition, a copy of the notice shall be sent to John Deere Intelligent Solutions Group, ATTN: John Deere Image Processing Module, 9505 Northpark Drive, Urbandale, Iowa 50131, U.S.A. All notices to John Deere shall be effective upon receipt. All notices

required to be given to you shall, in John Deere's sole discretion, either be sent via certified or registered mail to the address given to John Deere, a John Deere dealer, or another distribution partner of John Deere in connection with your purchase of the IPM. Either method of notification used by John Deere shall be effective upon dispatch. You agree to notify John Deere of any change in your address in the manner set forth above.

22. Third-Party Software Notifications and Licenses. The copyrights for certain portions of the Software may be owned by other third parties ("Third-Party Software") and used and distributed under license. The acknowledgements, notices, licenses and corresponding source code of the Third-Party Software are available in an enclosed CD-ROM, or via the instructions provided in the Third Party Software Notifications and Licenses section of the operators manual. The Third-Party Software is licensed according to the applicable Third-Party Software license notwithstanding anything to the contrary in this License Agreement.

OUO6043,0000487-19-15JAN21

Federal Communications Commission Notifications to User

Modular Telematics Gateway 4G LTE and Satellite Module

These devices comply with Part 15 of the Federal Communications Commission (FCC) Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, no guarantee shall be made that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a John Deere dealer or other service provider for help.

OUO6043,000048F-19-14OCT25

Federal Communications Commission Notifications to User

VPU

This device complies with part 15 of Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

vetk1iy,1717074291331-19-05JUN24

Federal Communications Commission Notifications to User

Ethernet Switch - COE1

This device complies with part 15 of Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful

interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, no guarantee shall be made that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a John Deere dealer or other service provider for help.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

vetk1iy,1717087493119-19-16OCT25

Federal Communications Commission Notifications to User

Ethernet Switch - COE2

This device complies with part 15 of Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, no guarantee shall be made that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a John Deere dealer or other service provider for help.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

vetk1iy,1717087491119-19-16OCT25

Federal Communications Commission Notifications to User

Ethernet Switch - COE3

This device complies with part 15 of Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at his own expense.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

vetk1iy,1717074609274-19-30MAY24

Federal Communications Commission Notifications to User

Camera Module

This device complies with part 15 of Federal Communications Commission (FCC) rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference; (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, no guarantee shall be made that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult a John Deere dealer or other service provider for help.

These devices must be operated as supplied by John Deere Ag Management Solutions. Any changes or modifications made to these devices without the express written approval of John Deere Ag Management Solutions may void the user's authority to operate these devices.

vetk1iy,1717070845273-19-16OCT25

Third-Party Software Notifications and Licenses for Image Processing Module

The copyrights for certain portions of the Software may be owned or licensed by other third parties ("Third-Party Software") and used and distributed under license. The Third-Party Notices include the acknowledgements, notices, and licenses for the Third-Party Software. The Third-Party Software is licensed according to the applicable Third-Party Software license notwithstanding anything to the contrary in the applicable Software End-User License Agreement. The Third-Party Software contains copyrighted software that is licensed under the GPL/LGPL or other copyleft licenses. Copies of those licenses are included in the Third-Party Notices.

Third-Party Notices are available electronically by following these steps:

1. Connect a mobile device using the Mobile to Machine feature of the MTG 4G LTE. Directions for the using the Mobile to Machine feature can be found in the MTG 4G LTE Operator's Manual.
2. Determine the current IP address of the Image Processing Module. On the display, select the VPM control unit in diagnostics. Select diagnostic address 008 for the IP address.

3. Open a web browser on the mobile device that is connected using Mobile to Machine. Navigate to the IP address shown in diagnostic address 008.

You may obtain the complete Corresponding Source Code from us for a period of three years after our last shipment of the Software by sending a request letter to:

Deere Open Source Compliance Team
P.O. Box 1202
Moline, IL 61266-1202 USA

Please include "source for John Deere Image Processing Module VPM and the version number of the software in the request letter. This offer is valid to anyone in receipt of this information.

OUO6043,0000491-19-22JAN21

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