

MAF 32 and MAF 40 Self-Propelled Sprayers



JOHN DEERE

OPERATOR'S MANUAL

MAF 32 and MAF 40 Self-Propelled Sprayers

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Introduction

Foreword

READ THIS MANUAL CAREFULLY in order to become familiar with the correct operation and maintenance of the machine and to prevent personal injury or damage to the machine. This manual and the safety signs on the machine may also be available in other languages (your John Deere dealer can order it on your behalf).

THIS USER DOCUMENTATION BELONGS to the machine and must be presented to the new owner when the machine is sold or traded in.

MEASUREMENTS in this manual correspond to metric sizes. Only use components and bolts that fit. Different spanners are required for metric and imperial sizes.

THE TERMS "LEFT" AND "RIGHT" are used with reference to the forward movement of the machine.

WRITE PRODUCT IDENTIFICATION NUMBERS in the applicable locations in the sections "Specifications" or "Identification Plates". Please note all numbers exactly. In the case of theft, these numbers may prove vital in tracing your property. Furthermore, your John Deere dealer requires these numbers when you order spare parts. It is therefore recommended that you also note these numbers down elsewhere.

YOUR DEALER HAS ALREADY PERFORMED a pre-delivery inspection of this machine.

THIS SELF-PROPELLED SPRAYER has been SPECIFICALLY constructed for normal agricultural application: agricultural crop protection work ("INTENDED USE").

This self-propelled sprayer is a spraying machine for the application of crop protection chemicals and liquid fertilizers according to legal user regulations in ground cultivation.

The sprayers are multipurpose machines, which can be used in agriculture, outdoor vegetable growing, bulb

growing, tree cultivation and grassland farming. The sprayer can also be used to perform spraying activities with hoses and manually operated spray guns for crop protection or cleaning purposes (disinfection, cleaning of equipment). Any other use is regarded as non-compliant with its purpose. Effective use also implies the observance of all user and maintenance instructions prescribed by the manufacturer.

THIS SELF-PROPELLED SPRAYER MUST ONLY be used and serviced by authorized persons who are informed about the hazards. The relevant safety regulations and all other generally accepted safety, technical, medical and traffic instructions must be observed.

THE FOLLOWING ACTIONS FALL UNDER YOUR RESPONSIBILITY and therefore exclude any liability on the part of the manufacturer:

- Unauthorized modifications to the machine.
- Incorrect operation of the machine.
- Improper use of agrochemicals (herbicides, fungicides, insecticides, growth regulators) and liquid fertilizers, including non-compliance with instructions issued by the manufacturers of fertilizers and crop protection chemicals, non-compliance with legal requirements applicable to the use of fertilizers and crop protection chemicals including their combination with other chemicals.

AM24480,000123A-19-17AUG21

Predelivery Inspection

Inspections have been made at the factory.

Before machine delivery, the dealer has carried out the inspections according to the PDI instruction:

Signature Dealer/Service Technician

Date:

Predelivery Inspection completed according to PDI Instruction

WZ00232,00008CA-19-04FEB25

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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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Identification View

Identification View



MAF 32 and MAF 40 Front View

TG636330—UN—21JUN24



MAF 32 and MAF 40 Right-Hand Side View

TG636332—UN—21JUN24



MAF 32 and MAF 40 Left-Hand Side View

TG636331—UN—21JUN24



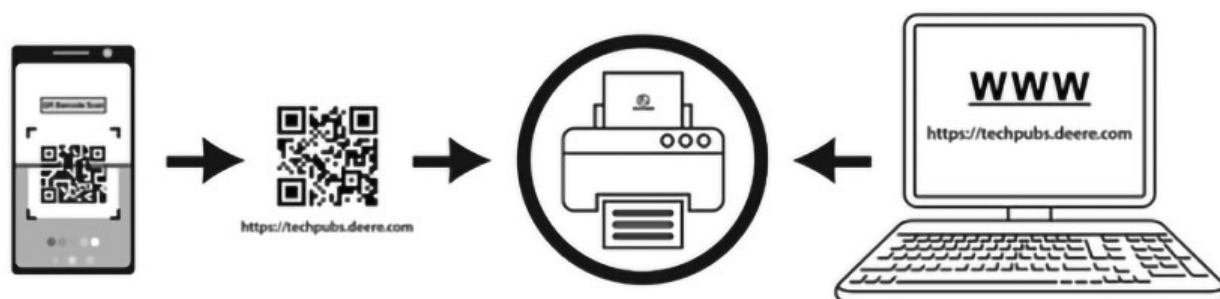
MAF 32 and MAF 40 Rear View

TG636333—UN—10JUL24

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Introduction to the Machine

Download Instructions



Instructions, manuals, and other documents may be downloaded at [www.techpubs.deere.com](https://techpubs.deere.com). Scanning the QR code on a mobile device will route to the site automatically.

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Purpose of the Manual

IMPORTANT: This document has been compiled in accordance with the regulations in force at the time of going to press.

IMPORTANT: Before using, inspecting, or carrying out any operation with/on the machine, read this manual carefully and always respect the instructions provided.

The manual is intended as a guide for the customer and provides all the information necessary to operate and maintain the machine in a safe, proper, and autonomous way.

The manual contains information regarding safety, technical aspects, operation, maintenance, and transport of the machines listed:

- MAF 32¹
- MAF 40¹

Proper use and maintenance ensure optimal performance and a longer working life of the machine. In case of any doubt regarding the machine or if there is any need for information, contact nearest assistance center or the manufacturer's after sales service.

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Machine Features

Options

IMPORTANT: To prevent damage in periods of extreme cold, the following parts could be temporarily removed:

- Suction pump pressure filter cups including O-rings and filter elements.
- Filling pressure filter cup of the pump, including filter element.
- End caps with U-plugs for various spray line sections.
- Hose sockets with U-plugs for various spray line sections.
- John Deere PowerTech™ PSS 4 cylinders 4.5L 129 Kw (175 hp) and John Deere PowerTech™ PSS 6 cylinders 6.8L 168 Kw (225 hp).
- John Deere 1530 Cab, CAT IV, and NGOI joystick.
- Gen5 Universal Display (12.8 inch) touchscreen with USB connection, TERA (10 inch) monitor touch screen machine.

- John Deere Gen5 Universal Display, StarFire™ antenna, and AutoTrac™ Solsteer.
- 3200 L, 4000 L polyethylene tank with digital tank level indication.
- Suspension: Front axle suspension hydropneumatics, rear axle suspension hydropneumatics (wishbone style).
- Steering system: Multi-mode four wheel hydro static steering with 3 selectable steering modes: - 4 wheel coordinated - 4 wheel crab steer - 2 wheel mode with automatic rear wheel centering. Automatic 4WS system (S-2C) safety level SIL 3 no stop, safety level SIL 3 no stop, with redundant angle sensors on steering cylinders, 2 pumps and 2 independent oil lines. Automatic rear axle re-alignment. Auxiliary manual release system.
- Transmission: Poclain MS08 HF hydraulic motors (two gears) with hydro static brakes disc brakes (if equipped) for MAF 32, MHP11 (four gears forward, three gears reverse) with hydro static brakes for MAF 40 and MAF 32, mechanical differential axle.
- Booms: 24—36 m length: 7 or 9 sections, 920 mm air assisted boom system for booms up to 30 m (if equipped). The 920 mm sleeve is available only for MAF 40, with the option to also include 620 mm and 820 mm . Only 620 mm and 820 mm are available for MAF 32.
- Nozzles: Individual nozzle control (INC) or triget holder, seletron version, and nozzles Hypro® VF 04.
- Solution System: MSpray 2-inch dual pump solution system with centrifugal spray pump (750 l/min) & self - priming centrifugal fill pump (600 l/min) or standard spray system with 330 L/min @ 20 Bar (Immovili) - Base

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PowerTech is a trademark of Deere & Company

¹ depicts machine option with mechanical axle.

StarFire is a trademark of Deere & Company
Hypro is a trademark of Pentair Flow Technologies, LLC

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. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

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

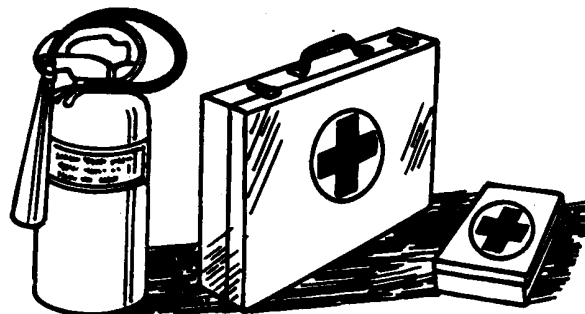
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

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

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

DX,READ-19-01AUG22

Prepare for Emergencies



TS291—UN—15APR13

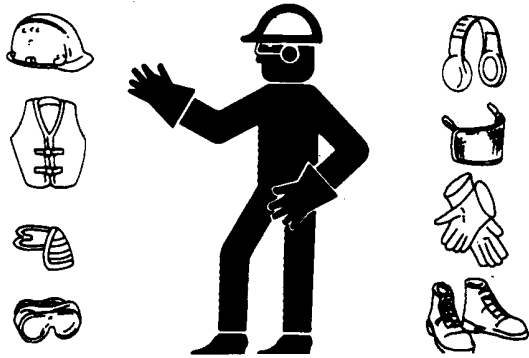
Be prepared if a fire starts.

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

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

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

Handle Fuel Safely—Avoid Fires



TS202—UN—23AUG88

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

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

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

Use only an approved fuel container for transporting flammable liquids.

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

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

DX,FIRE1-19-12OCT11

Fire Prevention

To reduce the risk of fire, your tractor should be regularly inspected and cleaned.

- Birds and other animals may build nests or bring other flammable materials into the engine compartment or onto the exhaust system. The tractor should be inspected and cleaned prior to the first use each day.
- A build up of grass, crop material and other debris may occur during normal operation. This is especially true when operating in very dry conditions or conditions where airborne crop material or crop dust is present. Any such build up must be removed to ensure proper machine function and to reduce the risk of fire. The tractor must be inspected and cleaned periodically throughout the day.
- Regular and thorough cleaning of the tractor combined with other routine maintenance procedures listed in the Operator's Manual greatly reduce the risk of fire and the chance of costly downtime.

- Do not store fuel container where there is an open flame, spark, or pilot light such as within a water heater or other appliance.
- Check fuel lines, tank, cap, and fittings frequently for damage, cracks or leaks. Replace if necessary.

Follow all operational and safety procedures posted on the machine and the Operator's Manual. Be careful of hot engine and exhaust components during inspection and cleaning. Before carrying out any inspection or cleaning, ensure park brake is engaged, always shut OFF the engine, and secure the tractor. If equipped, remove the key and disconnect the battery to prevent others from starting the tractor during inspection and cleaning.

DX,WW,TRACTOR,FIRE,PREVENTION-19-20JAN26

In Case of Fire



TS227—UN—15APR13



CAUTION: Avoid personal injury.

Stop machine immediately at the first sign of fire. Fire may be identified by the smell of smoke or sight of flames. Because fire grows and spreads rapidly, get off the machine immediately and move safely away from the fire. Do not return to the machine! The number one priority is safety.

Call the fire department. A portable fire extinguisher can put out a small fire or contain it until the fire department arrives; but portable extinguishers have limitations. Always put the safety of the operator and bystanders first. If attempting to extinguish a fire, keep your back to the wind with an unobstructed escape path so you can move away quickly if the fire cannot be extinguished.

Read the fire extinguisher instructions and become familiar with their location, parts, and operation before a fire starts. Local fire departments or fire equipment distributors may offer fire extinguisher training and recommendations.

If your extinguisher does not have instructions, follow these general guidelines:

1. Pull the pin. Hold the extinguisher with the nozzle

pointing away from you, and release the locking mechanism.

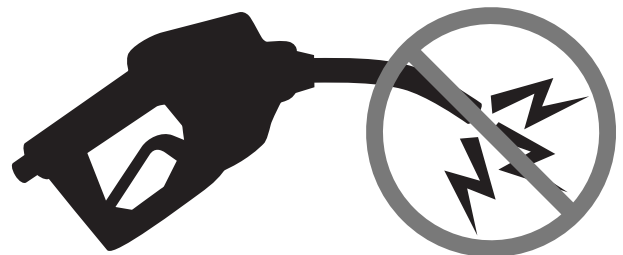
2. Aim low. Point the extinguisher at the base of the fire.
3. Squeeze the lever slowly and evenly.
4. Sweep the nozzle from side-to-side.

DX,FIRE4-19-22AUG13

Avoid Static Electricity Risk When Refueling



RG22142—UN—17MAR14



RG21992—UN—21AUG13

The removal of sulfur and other compounds in Ultra-Low Sulfur Diesel (ULSD) fuel decreases its conductivity and increases its ability to store a static charge.

Refineries may have treated the fuel with a static dissipating additive. However, there are many factors that can reduce the effectiveness of the additive over time.

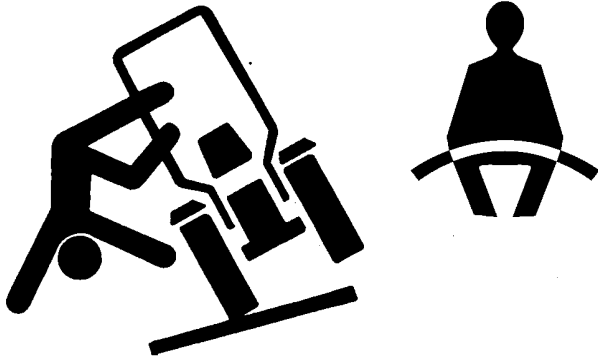
Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

Therefore, it is important to ensure that the entire system used to refuel your machine (fuel supply tank, transfer pump, transfer hose, nozzle, and others) is properly grounded and bonded. Consult with your fuel or fuel system supplier to ensure that the delivery

system is in compliance with fueling standards for proper grounding and bonding practices.

DX,FUEL,STATIC,ELEC-19-12JUL13

Use Seat Belt Properly



TS1729—UN—24MAY13

Avoid crushing injury or death during rollover.

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

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

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

Inspect seat belt and mounting hardware at least once a year. Look for signs of loose hardware or belt damage, such as cuts, fraying, extreme or unusual wear, discoloration, or abrasion. Replace only with replacement parts that meet specifications for your machine.

DX,ROPS1-19-22AUG13

Vibration

All operator's seats approved by John Deere are component type-approved in accordance with 78/764/EEC or (EU) 1322/2014 Annex XIV, being allocated an average of the vibration acceleration actually measured at the seat (a_{ws}), equivalent to $\leq 1.25 \text{ m/s}^2$.

This value must NOT be used to calculate vibration stress as per 2002/44/EC! Local John Deere dealers can provide assistance in assessing vibration stress.

Measures to reduce vibration may include:

- Appropriate style of driving, e.g. not too fast
- Suspended front axle

- Suspended cab
- Correctly adjusted operator's seat
- Correct tire pressure

DX,VIBRATION,EU-19-28FEB17

General Machine Operation Safety

Always check general operating safety of the machine before using.

Before operating the 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.

Always shut off engine when leaving machine. Remove key when leaving machine unattended. Parking brake engages when engine is turned off regardless of multi-function lever position.

Keep hands, feet, and clothing away from moving parts. To prevent from being caught on some parts of the machine wear relatively tight and belted clothing

WZ00232,00001E2-19-24JUL15

Operators

The machine must always be operated by a single person, without assistance from other persons. The operator is, at the same time, the driver. The machine can, in principle, be operated by any adult person who is familiar with the operating regulations and safety chapters of this documentation.

Certain countries prescribe minimum ages and/or licences in order to use and work with crop protection chemicals.

AG,WZ00009,165-19-07AUG00

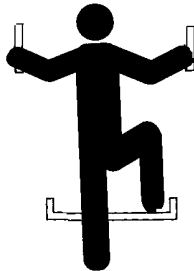
Operator Ability

- 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

Use Steps and Handholds Correctly



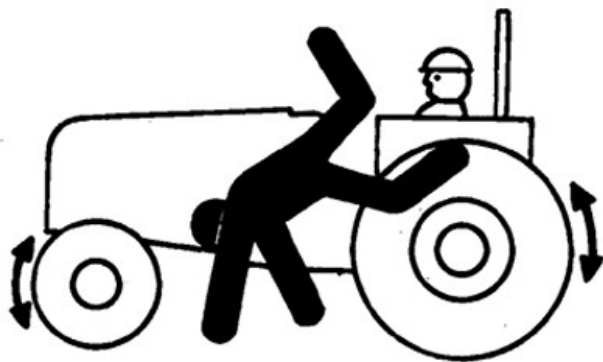
T133468—UN—15APR13

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

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

DX,WW,MOUNT-19-12OCT11

Operating the Tractor Safely



APY62013—UN—05JUL21

You can reduce the risk of accidents by following these simple precautions:

- Use your tractor only for jobs it was designed to perform, for example, pushing, pulling, towing, actuating, and carrying a variety of interchangeable equipment designed to conduct agricultural work.
- Operators must be mentally and physically capable of accessing the operator's station and/or controls, and operating the machine properly and safely.
- Never operate machine when distracted, fatigued, or impaired. Proper machine operation requires the operator's full attention and awareness.
- This tractor is not intended to be used as a recreational vehicle.

- Read this operator's manual before operating the tractor and follow operating and safety instructions in the manual and on the tractor.
- Follow operation and ballasting instructions found in the operator's manual for your implements/ attachments, such as front loaders.
- Follow the instructions outlined in the operator's manual of any mounted or trailed machinery or trailer. Do not operate a combination of tractor-machine or tractor-trailer unless all instructions have been followed.
- Make sure that everyone is clear of machine, attached equipment, and work area before starting engine or operation.
- Stay clear of the three-point linkage and pickup hitch (if equipped) when controlling them.
- Keep hands, feet, and clothing away from power-driven parts.

Driving Concerns

- Never get on or off a moving tractor.
- Complete any required training prior to operating vehicle.
- Keep all children and nonessential personnel off tractors and all equipment.
- Never ride on a tractor unless seated on a John Deere approved seat with a seat belt.
- Keep all shields/guards in place.
- Use appropriate visual and audible signals when operating on public roads.
- Move to side of road before stopping.
- Reduce speed when turning, applying individual brakes, or operating around hazards on rough ground or steep slopes.
- Stability degrades when attached implements are at high position.
- Couple brake pedals together for road travel.
- Pump brakes when stopping on slippery surfaces.
- Regularly clean fenders and fender valances (mud flaps) if installed. Remove dirt before driving on public roadways.

Heated and Ventilated Operator's Seat

- An overheated seat heater can cause a burn injury or damage to the seat. To reduce the risk of burns, use caution when using the seat heater for extended periods of time, especially if the operator cannot feel temperature change or pain to the skin. Do not place objects on the seat, such as a blanket, cushion, cover, or similar item, which can cause the seat heater to overheat.

Towing Loads

- Be careful when towing and stopping heavy loads. Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or

without brakes that are too heavy for the tractor or are towed too fast can cause loss of control.

- Consider the total weight of the equipment and its load.
- Hitch towed loads only to approved couplings to avoid rearward upset.

Parking and Leaving the Tractor

- Before dismounting, shut off SCVs, stop engine, lower implements/attachments to ground, place implement/attachment control devices in neutral, and securely engage park mechanism, including the park pawl and park brake. In addition, if the tractor is left unattended, remove key.
- Leaving transmission in gear with engine off will NOT prevent the tractor from moving.
- Never go near an operating implement.
- Wait for all movement to stop before servicing machinery.

Common Accidents

Unsafe operation or misuse of the tractor can result in accidents. Be alert to hazards of tractor operation.

The most common accidents involving tractors are:

- Tractor rollover
- Collisions with motor vehicles
- Improper starting procedures
- Crushing and pinching during hitching

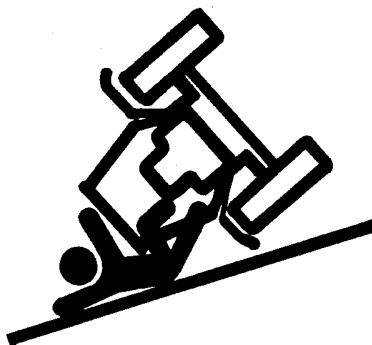
KWPZAG2,0000C53-19-30JUN21

Transport in the Field and on the Road



TS216—UN—23AUG88

Turn Vehicle Safely When Towing



RW13093—UN—07DEC88

Drive Vehicle Safely on Hillsides

Always engage the Transport Lock function for traveling on public roads.

Always observe roadway conditions, field entrance slopes and field terrain before and during transport. Adapt machine speed, braking, maneuvering and direction change to observed ground conditions.

Attach implements and trailers to the vehicle only using the prescribed drawbars or hitches. Attach trailers and implements correctly and always ensure that they cannot roll away.

When making turns with towed or mounted implements, always take into consideration the width and inertia of the implement.

Before descending a steep hill, shift to a lower gear.

Avoid holes, ditches and obstructions which may cause the vehicle to tip, particularly on hillsides. Never drive near the edge of a gully or steep embankment — it might cave in!

Due to the high center of gravity the operator must exercise more caution in operation. Following actions and conditions increase the danger of machine tip-over, this list is not exhaustive:

- Sharp turns on hill sides
- Sharp turns with narrow tread settings
- Sharp turns with 4-wheel steering engaged
- Sharp braking
- Field entries that have steep slopes and rough uneven surfaces
- Rough side slope terrain
- Above actions with partially or completely filled spray tank

NOTE: Fertilizer increases the inertia of the vehicle more than water.

Reduce the danger of machine tip-over on rough, uneven ground, steep slopes and during transport with liquid in the spray tank by:

- Slowing to a safe transport speed and proceeding with appropriate caution
- Applying brakes smoothly and avoiding aggressive braking
- Avoiding rapid acceleration or deceleration during turns
- Setting wheels at widest practical tread setting

Inspect field entry and exit roads and proceed with caution.

WZ00232,000027F-19-28AUG18

Emergency Exit

CAUTION: It is forbidden to use the machine with the door of security that is not completely closed.

In an emergency, if it not possible to exit from the control cab entry door on the left-hand side, it is possible to exit through the right-hand side door.



APY62014—UN—26JUL21



APY62015—UN—05JUL21



APY62016—UN—26JUL21

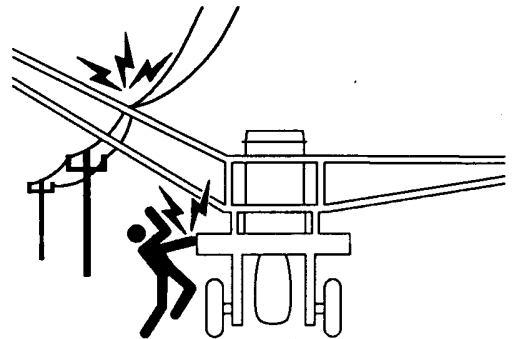
A—Emergency Exit
B—Pin

Follow the steps as below:

- Remove the pin (B).
- Push the right door outwards, the door opens slightly.
- Exit the cab, check that it is safe to exit.

KWPZAG2,0000D72-19-11AUG21

Transport 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 all slow moving vehicle emblems and reflectors clean and in place.

Do not exceed maximum homologated transport speed of the vehicle.

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.

WZ00232,0000692-19-20MAR17

Avoid Backover Accidents



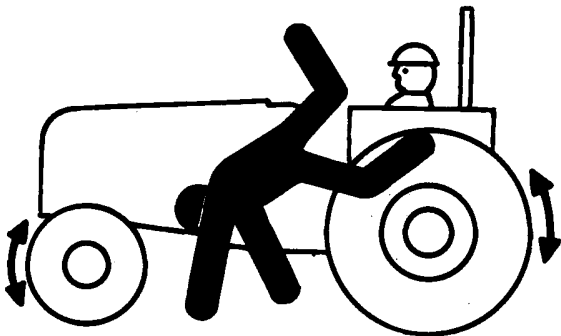
PC10857XW—UN—15APR13

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

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

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

Keep 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

Passenger Seat



TS1730—UN—24MAY13

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

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

DX,SEAT,EU-19-28FEB17

Heated and Ventilated Operator's Seat

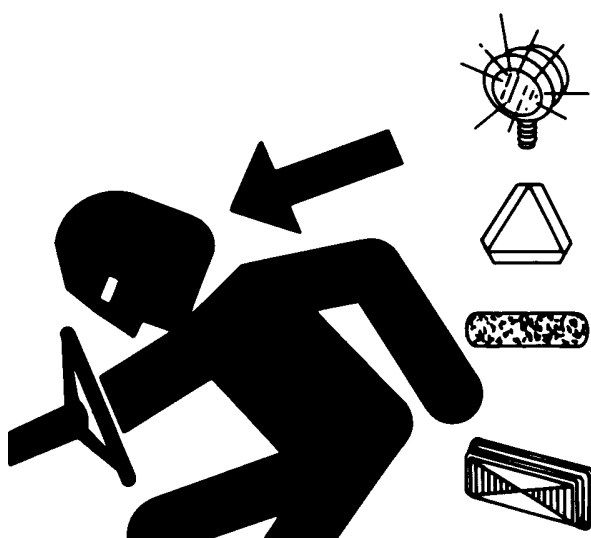


H124189—UN—11MAY18

An overheated seat heater can cause a burn injury or damage to the seat. To reduce the risk of burns, use caution when using the seat heater for extended periods of time, especially if the operator cannot feel temperature change or pain to the skin. Do not place objects on the seat, such as a blanket, cushion, cover, or similar item, which can cause the seat heater to overheat.

DX,SEATHEATER-19-20NOV18

Use Safety Lights and Devices



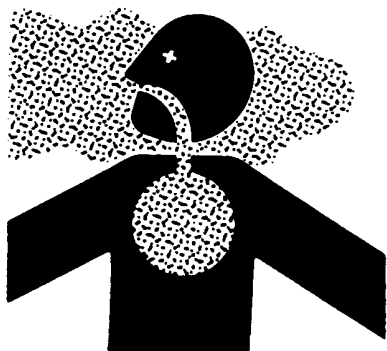
TS951—UN—12APR90

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

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

DX,FLASH-19-07JUL99

Avoid Contact with Agricultural Chemicals - Cab Category 4 according to EN 15695-1



TS220—UN—15APR13



TS272—UN—23AUG88

CAUTION: This enclosed cab offers protection against inhaling dust, aerosol, and vapors.

This cabin complies with the category 4 according to the EN 15695-1 standard for operator's cabs.

Read the information and be aware about the machine cab category stated on the label placed inside the cab.

Follow operational and service instructions for category 4 cab and recommended filter replacement intervals.

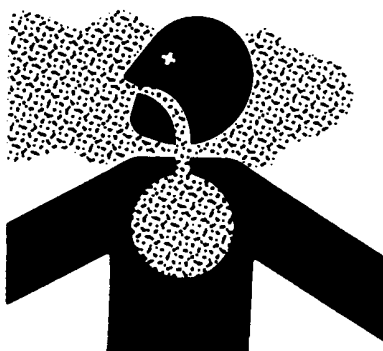
1. If pesticide use instructions require respiratory protection and do not specify the cab category according to EN 15695-1 and the filter EN 15695-2 as an alternative respiratory protection. Then wear an appropriate respirator inside the cab.
2. Wear personal protective equipment as required by the pesticide use instructions when leaving the enclosed cab:
 - into a treated area
 - to work with contaminated application equipment such as nozzles which must be cleaned, changed or redirected
 - to become involved with mixing and loading activities
3. Before reentering the cab, remove protective equipment and store outside the cab in the used side of the Protective Clothing Locker.
4. Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.
5. Never store chemical containers inside the cab.
6. Always close the windows and doors during spraying. It is important that the cab is as airtight as possible to generate a slight overpressure during ventilation, and preventing polluted air from entering the cab.

WZ00232,0000875-19-17SEP19

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.
- Never store used personal protection equipment (gloves, mask, clothing, and shoes) and chemical containers inside the cab.

WZ00232.0000878-19-16SEP19

Respiratory Protection



TS220—UN—15APR13

A wide variety of masks and filters is available for respiratory protection:

Use a half or full facial mask with a combination filter (combination of gas/vapour filter with dust/atomization filter). Another effective solution is the use of a hood with air stream filter (air stream helmet), whereby filtered air is blown in the air hood at a slight overpressure.

Make sure you use the right filter:

- A (brown): for organic crop protection chemicals (most crop protection chemicals)
- B (grey): for inorganic crop protection chemicals (such as chlorine, hydrogen sulfide, hydrocyanic acid, etc.)
- P (white) only filters dust and fluids

A brown/white filter with code A₂P₂ (CEN normalization) is suitable for most crop protection chemicals. A₂P₂ indicates a combination filter offering protection against both gases and vapours derived from the standard spraying agents, as well as against spray and dust from powdered products. A₂ refers to protection class 2 of the gas filter, i.e. that the filter may be used in concentrations up to 0.5 vol%. P₂ indicates that it is a dust filter of protection class 2. A grey/white filter jar with

code B is only required when working with hydrocyanic acid or formalin.

Check whether the mask seals well before use. Examine for damage and check whether the exhaust valve is clean and well sealed.

Write the date of first use on the filter. Make sure the filter A₂P₂ is replaced once a month, regardless of how often it has been used. The code B filter must be replaced after each spraying job. After opening the seal, the filter must be used within a period of 6 months. Make sure waste filters are disposed in accordance with the statutory regulations.

Never judge the effect of the filter by your sense of smell, after all:

- many toxic substances are odourless
- the harmful concentration may be under the odour limit
- certain substances affect the sense of smell by damaging the mucous membranes

Take note of the final use date of the filter

Save the mask filter in an airtight manner after use

AG,WZ00009,157-19-07AUG00

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

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

WZ00232,0000876-19-16SEP19

Clean Vehicle of Hazardous Pesticides

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

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

When exposed to hazardous pesticides, 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, inside cowlings of cab.
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.

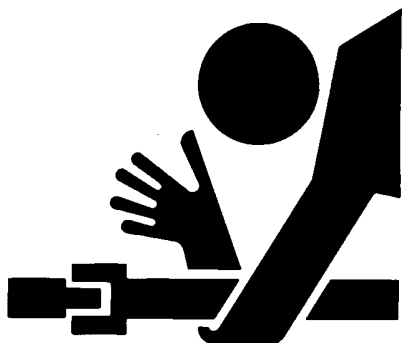
KWPZAG2,0000C54-19-30JUN21

Prevent Development of Micro Organisms

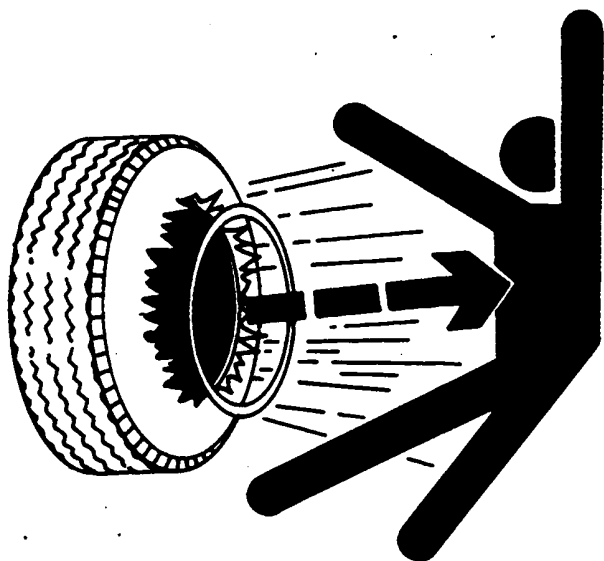
CAUTION: Do not leave any rinse water in the sprayer for a longer period of time, since high temperatures may cause development of micro organisms which could be harmful for your health.

WZ00085,0000296-19-29NOV04

Mechanical Safety



TS276—UN—23AUG88



TS211—UN—15APR13



LX002 510

Turn Off Engine

LX002510—UN—17JAN95

- Safety provisions must not be removed or rendered inoperative.
- The permissible load on axle and tires must not be exceeded. Pay attention to this when fitting tires and loading the machine, and take care of transport speed.
- When traveling on public roads, the machine must be fitted with lighting according to the applicable statutory regulations.
- When a full tank must be transported by road, a hydraulic or pneumatic brake must be fitted. Check the statutory regulations in your country.
- Never enter the tank for purposes of cleaning or repair!
- Never set the spraying liquid pressure higher than 15 bar, due to the maximum permissible pressure of the machine.
- Be sure no-one is standing in the danger area before starting the machine.
- During repairs and maintenance work, the electric power must be switched off by means of the starting switch and removal of the plug from the socket.
- The ignition key must be removed to avoid any unexpected or unintentional starting of the machine.
- Do not carry out welding work on the machine if it has been used to spray ammonium nitrate and/or contains residues of this chemical.

KWPZAG2,0000875-19-17AUG21

Working Area

The working area is defined and required as follows:

- an area of 1 meter around the machine for attaching of the machine, preparation of the spraying liquid (filling work) and cleaning of the spraying apparatus
- the seat on the tractor from where the crop protection work is carried out.

Danger zones are taken to mean:

- the working area of the operator, in which attaching of the sprayer, preparation of the spraying liquid and cleaning of the sprayer takes place.
- the "manoeuvring 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.

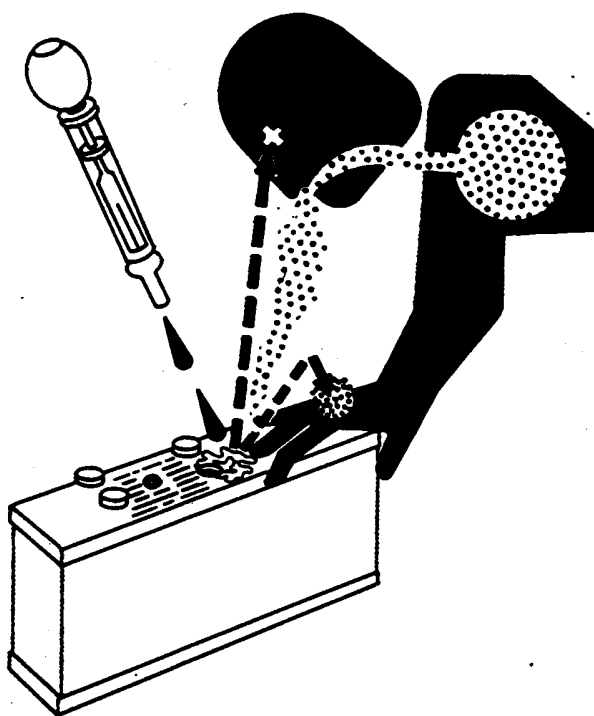
AG,WZ00009,166-19-18FEB02

- Do not touch the machine while it is in operation.

Handling Batteries Safely



TS204—UN—15APR13



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:

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

Prevent Battery Explosions



TS204—UN—15APR13

Keep sparks, lighted matches, and open flame away from the top of battery. Battery gas can explode.

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

Do not charge a frozen battery; it may explode. Warm battery to 16°C (60°F).

DX,SPARKS-19-03MAR93

Skin Protection

The following clothing must be used in order to protect the skin:

- Nitrile rubber gloves without moisture absorbing lining which are resistant to chemicals used in agriculture and horticulture. The gloves must be long enough to also protect the arms. Replace them when obviously contaminated, but in any case after five times of use. When gloves are not lined, we advise you to rub talcum powder into hands.
- Waterproof rubber or neoprene boots which are resistant to chemicals
- Moisture-proof overall with hood which is resistant to chemicals. The overall must fall over the gloves and boots.
- A moisture-proof apron protects the clothing so that you remain clean in the tractor cab during spraying.
- A full facial mask for protection of the face.

Take care to clean the clothing after use. Never carry on working with wet spraying clothing, as this will cause extra contact with the skin. Be extra careful when your skin is damaged and always wash your hands, underarms and wrists with soap and water when you have used crop protection chemicals. After that, you can wash your face.

AG,WZ00009,168-19-07AUG00

Maintenance of Means of Personal Protection

Clean all your means of personal protection thoroughly after use. Rinse mask, overalls, boots and gloves with lukewarm water and soap and leave to dry.

Store the means of personal protection in a cool, dry and dust-free place. However, never store them in the crop protection chemicals storage area!

AG,WZ00009,169-19-07AUG00

Operator's Cab

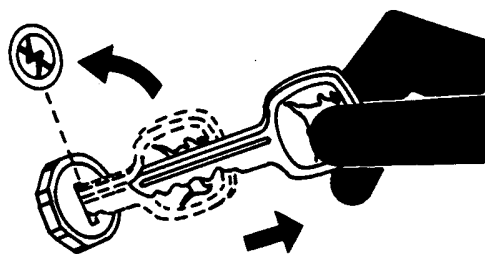
- Always close the windows and doors during spraying. It is important that the cab is as airtight as possible generating a slight overpressure during ventilation, and preventing polluted air from entering the cab.
- Install one or more dust filters in the cab, to trap dust particles and drops, and an active carbon filter which absorbs the dangerous gases from the air. The dust filter is also intended to extend the life of the active carbon filter.
- After all, dust particles and drops have a negative influence on the useful life of the active carbon filter. Ask your dealer for advice on the useful life of the active carbon filter in particular.
- During spraying, at least 90-95% of your time must be spent in the cab, as the exposure to crop protection chemicals will otherwise be too large.

When dealing with machine malfunctions, a full facial mask must be worn.

- It is even better to drive off the field in the case of major malfunctions, in order to solve the problems in a clean environment.

KWPZAG2,0000C22-19-11AUG21

Park Machine Safely



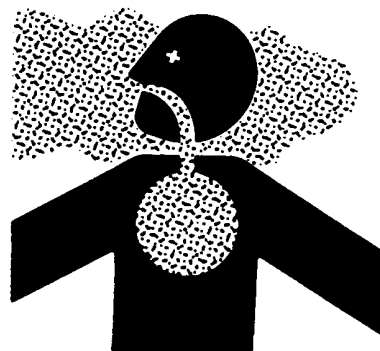
TS230—UN—24MAY89

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

Work In Ventilated Area



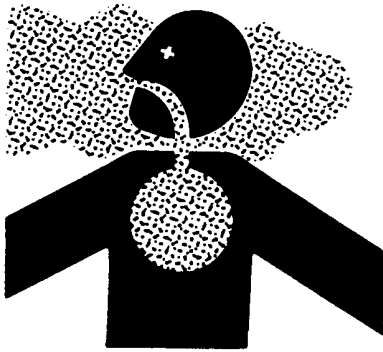
TS220—UN—15APR13

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

Remove Paint Before Welding or Heating



TS220—UN—15APR13

Avoid potentially toxic fumes and dust.

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

Remove paint before heating:

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

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

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

Dispose of paint and solvent properly.

DX,PAINT-19-24JUL02

yourself and bystanders. Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can accidentally burst when heat goes beyond the immediate flame area.

DX,TORCH-19-10DEC04

Welding Near Electronic Control Units



TS953—UN—15MAY90

IMPORTANT: Do not jump-start engines with arc welding equipment. Currents and voltages are too high and may cause permanent damage.

1. Disconnect the negative (-) battery cable(s).
2. Disconnect the positive (+) battery cable(s).
3. Connect the positive and negative cables together. Do not attach to vehicle frame.
4. Clear or move any wiring harness sections away from welding area.
5. Connect welder ground close to welding point and away from control units.
6. After welding, reverse Steps 1—5.

DX,VW,ECU02-19-14AUG09

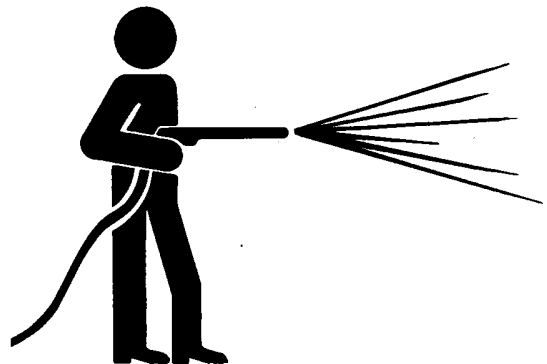
Avoid Heating Near Pressurized Fluid Lines



TS953—UN—15MAY90

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to

Work in Clean Area



T6642EJ—UN—18OCT88

Before starting a job:

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

DX,CLEAN-19-04JUN90

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

Practice Safe Maintenance

Safety During Maintenance Work



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.



TS218—UN—23AUG88

- Maintenance and repairs may only take place following complete cleaning of the machine.
- During repairs and maintenance work, the electric power must be switched off by means of the starting switch. Disconnect the ground cable (—) from the battery.
- Do not make a test run of the machine with the safety provisions turned off or protective covers removed.
- Do not carry out welding work on the machine if it has been used to spray ammonium nitrate and/or contains residues of this chemical.
- Never enter the tank for purposes of cleaning or repair!
- Perform any boom servicing or maintenance only with a fully unfolded (spraying position) and fully lowered boom to keep any boom movement to a

minimum. Working under an unsupported boom is not recommended.

WZ00232,000027E-19-09AUG11

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

Prevent Machine Runaway



TS177—UN—11JAN89

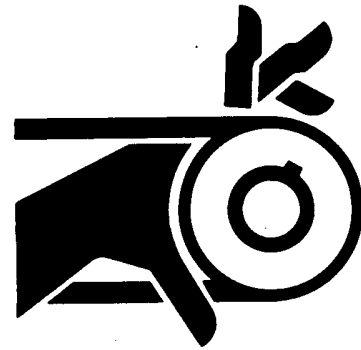
Avoid possible injury or death from machinery runaway.

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

Service Drive Belts Safely



TS285—UN—23AUG88

When servicing drive belts always observe these precautions:

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

OUC6043,00015E3-19-24MAY04

Handle Electronic Components and Brackets Safely



TS249—UN—23AUG88

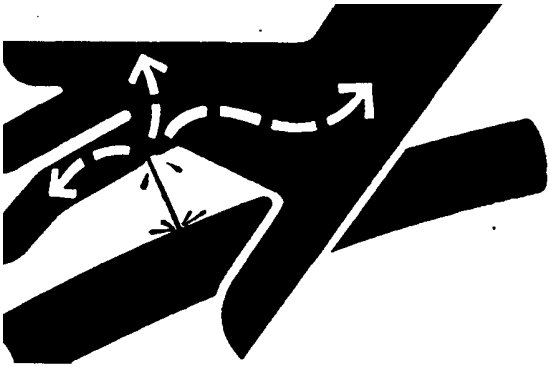
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

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

Avoid High-Pressure Fluids



X9811—UN—23AUG88

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

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

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

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

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

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

DX,FLUID-19-05NOV25

Check/Replace Hydraulic Hoses

Check hydraulic hoses regularly - at least once a year - for leaks, kinks, cuts, tears, rubbing, bulges, corrosion, exposed fabric and other signs of wear and damage.

Replace worn or damaged hoses immediately.

For more information about hose replacement, see your John Deere dealer or other service provider.

AWQNIWX,1755515002848-19-18AUG25

Do Not Open High-Pressure Fuel System



TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. Only technicians familiar with this type of system should perform repairs. Do not disconnect or attempt repair of fuel lines, sensors, or any other components between the high-pressure fuel pump and nozzles on engines with High Pressure Common Rail (HPCR) fuel system.

DX,WW,HPCR1-19-07JAN03

Avoid Hot Exhaust



RG17488—UN—21AUG09

Servicing machine or attachments with engine running can result in serious personal injury. Avoid exposure and skin contact with hot exhaust gases and components.

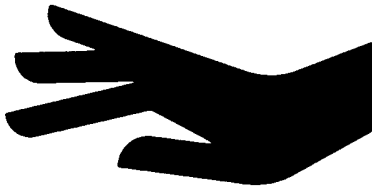
Exhaust parts and streams become very hot during operation. Exhaust gases and components reach temperatures hot enough to burn people, ignite, or melt common materials.

DX,EXHAUST-19-20AUG09

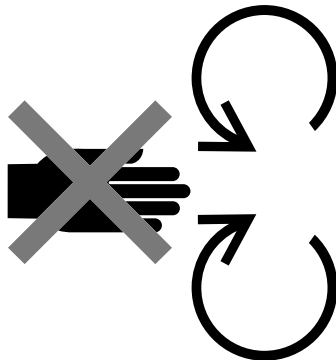
Clean Exhaust Filter Safely



TS227—UN—15APR13



TS271—UN—23AUG88



TS1693—UN—09DEC09



TS1695—UN—07DEC09

During exhaust filter cleaning operations, the engine may run at elevated idle and hot temperatures for an extended period of time. Exhaust gases and exhaust

filter components reach temperatures hot enough to burn people, or ignite or melt common materials.

Keep machine away from people, animals, or structures which may be susceptible to harm or damage from hot exhaust gases or components. Avoid potential fire or explosion hazards from flammable materials and vapors near the exhaust. Keep exhaust outlet away from people and anything that can melt, burn, or explode.

Closely monitor machine and surrounding area for smoldering debris during and after exhaust filter cleaning.

Adding fuel while an engine is running can create a fire or explosion hazard. Always stop engine before refueling machine and clean up any spilled fuel.

Always make sure that engine is stopped while hauling machine on a truck or trailer.

Contact with exhaust components while still hot can result in serious personal injury.

Avoid contact with these components until cooled to safe temperatures.

If service procedure requires engine to be running:

- Only engage power-driven parts required by service procedure
- Ensure that other people are clear of operator station and machine

Keep hands, feet, and clothing away from power-driven parts.

Always disable movement (neutral), set the parking brake or mechanism and disconnect power to attachments or tools before leaving the operator's station.

Shut off engine and secure the machine. If equipped, remove key and disconnect the battery before leaving the machine unattended.

DX,EXHAUST,FILTER-19-20JAN26

Service Cooling System Safely



TS281—UN—15APR13

Explosive release of fluids from pressurized cooling system can cause serious burns.

Shut off engine. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.

DX,RCAP-19-04JUN90

Service Accumulator Systems Safely



TS281—UN—15APR13

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

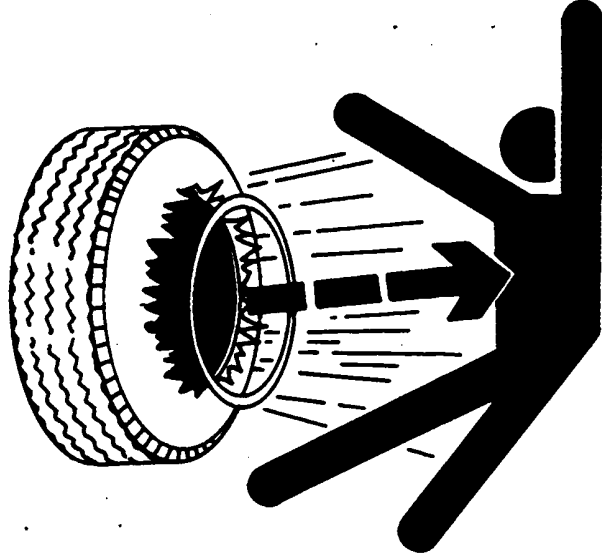
Relieve pressure from the pressurized system before removing accumulator.

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

Accumulators cannot be repaired.

DX,WW,ACCLA2-19-22AUG03

Service Tires Safely



TS211—UN—15APR13

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

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

Always maintain the correct tire pressure. Do not inflate the tires above the recommended pressure.

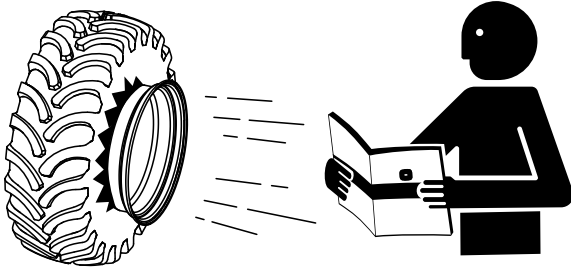
Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

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

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

DX,RIM1-19-27OCT08

Follow Tire Recommendations



H111235—UN—13MAY14

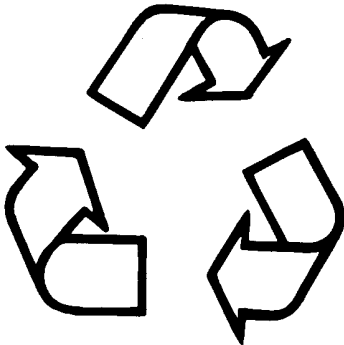
Keep your machine in proper working order.

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

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

OUC6092,00008D8-19-19MAY14

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

Admissible Use

This documentation will use the term “crop protection chemicals” or “chemicals” when referring to the product to be deployed. Only officially accepted crop protection chemicals and/or liquid fertilizers may be used with this machine, according to the legal directions. The statutory directions are indicated on the packaging and state the purposes for which the chemicals may be exclusively used (for which crops, whether or not in water reclamation areas, etc.). The crop protection chemicals may not be applied for other purposes. Officially accepted crop protection chemicals can be recognized by the authorization number on the packaging.

AG,WZ00009,159-19-07AUG00

Regulations for Machines in Use

The machinery may be subject to national requirements for regular inspections, as provided for the directives 2006/42/EC and 2009/127 EC and the national provisions of implementation, 2014/30 EU, 2014/35 EU. With the adoption of the following harmonized standards EN ISO 13857:2008, UNI EN ISO 4254- 1:2015, UNI

EN 4254-6:2010 technical specifications, ISO
11684:1995, ISO 37667-1:1998 and ISO 3767- 2:2016.

KWPZAG2,0000C24-19-29JUN21

Safety Decals

Pictorial Safety Signs

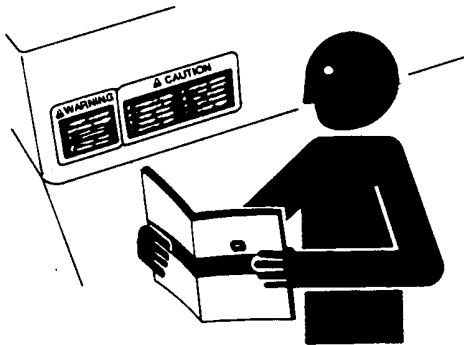


TS231—19—07OCT88

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

awqniwx, 1718187372136-19-12JUN24

Replace Safety Signs

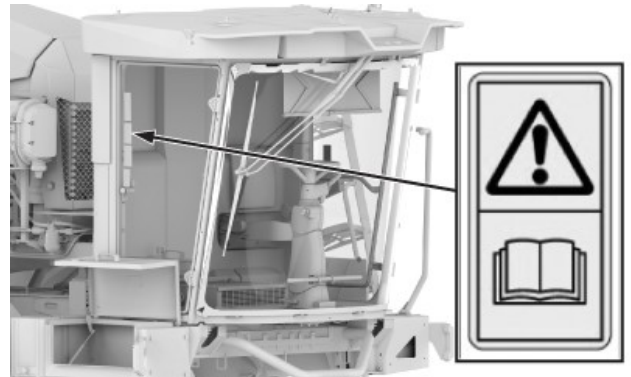


TS201—UN—15APR13

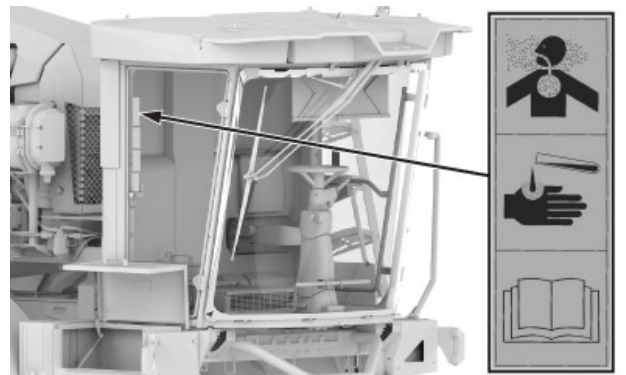
Replace missing or damaged safety signs. See the machine Operator's Manual for the correct safety sign placement.

awqniwx, 1718187372108-19-12JUN24

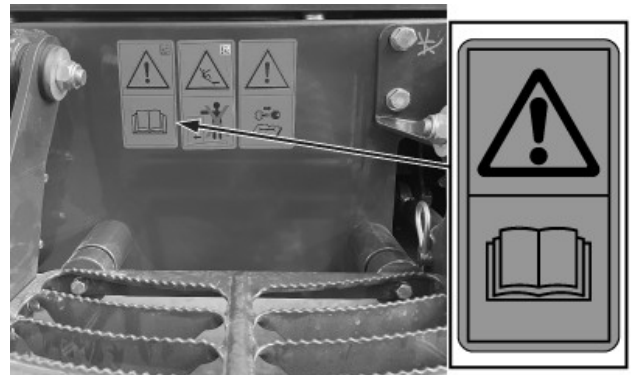
Operator's Manual Decal



TG618854—UN—03MAY24



TG622741—UN—03MAY24



TG591819—UN—19OCT23

CAUTION: This Operator Manual contains important information necessary for the safe operation of this machine. To avoid accidents, carefully observe all safety rules.

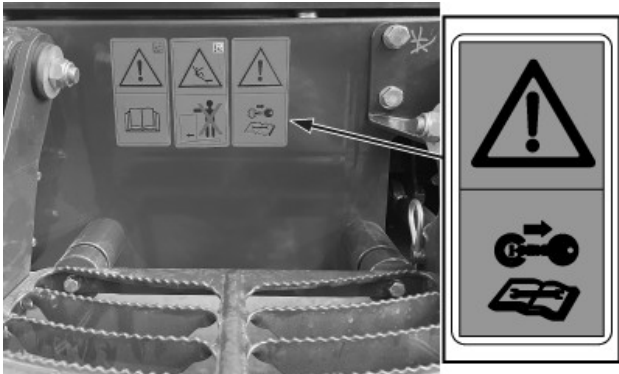
awqniwx, 1718187372565-19-12JUN24

Shields Decal

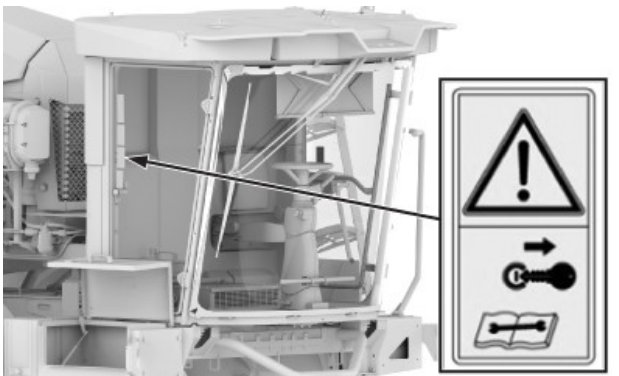
CAUTION: Keep all shields in place during normal operation. Keep hands, feet, and clothing away from power-driven parts. Disengage power-driven parts and shut off the engine before unclogging or servicing machine. If the service procedure requires the engine to be running:

- Only engage power-driven parts required by service procedure.
- Ensure that other people are clear of the operator's station and machine.

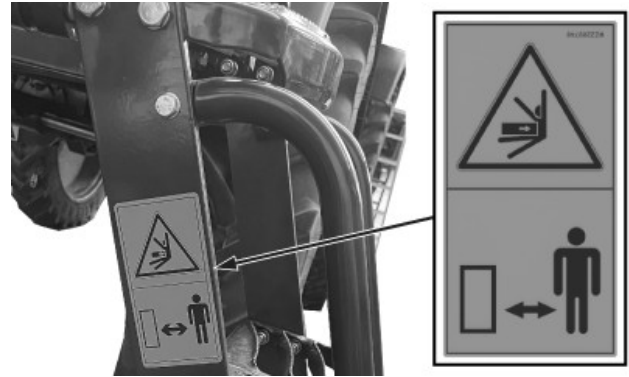
CAUTION: Do NOT leave running machine unattended.



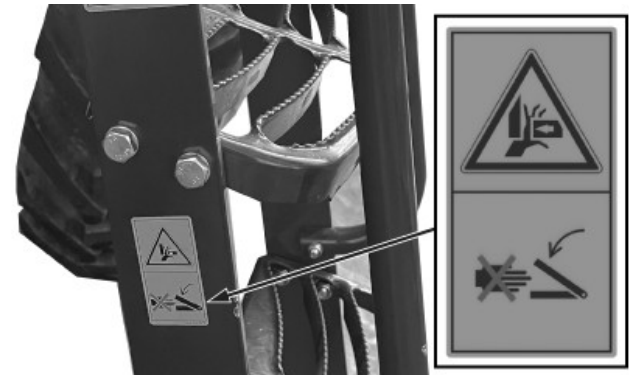
TG591830—UN—19OCT23



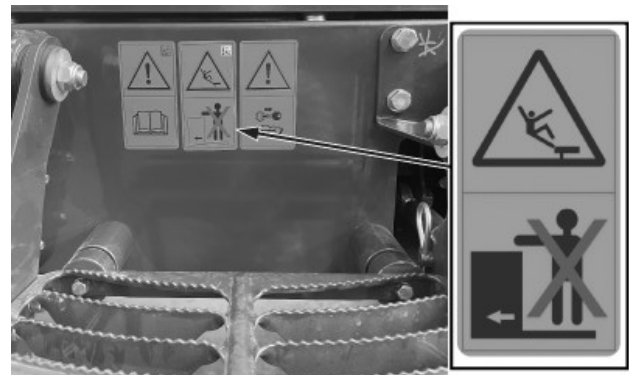
TG618855—UN—03MAY24
awqniwx, 1718187372481-19-12JUN24



TG591827—UN—19OCT23



TG591828—UN—19OCT23



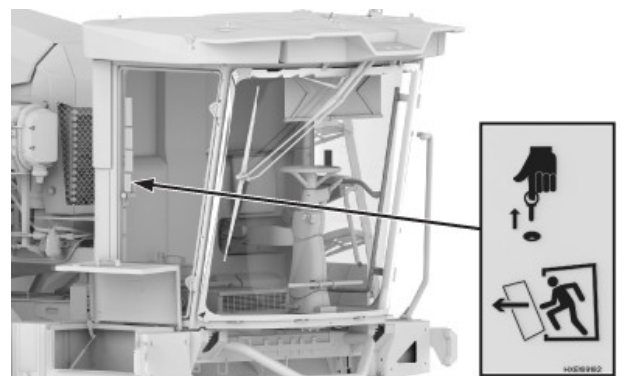
TG591829—UN—19OCT23
awqniwx, 1718187372535-19-12JUN24

Platform Ladder Decal/Do Not Ride Decal

CAUTION: Keep people out of range while parts are moving.

CAUTION: Avoid serious injuries from falling. Do NOT stand on ladder when machine is running.

Emergency Exit Decal



TG622742—UN—03MAY24

awqniwx,1718187371892-19-12JUN24

Distance Electrical Decal



TG619073—UN—05APR24

To avoid injury or death maintain electrical distance when moving or operating this machine.

awqniwx,1718187371872-19-12JUN24

Seat Belt Decal

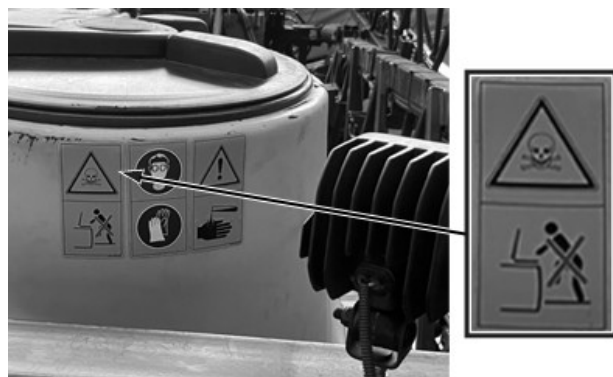


TG619074—UN—05APR24

awqniwx,1718187371843-19-12JUN24

Danger of Poisoning

⚠ CAUTION: Tank contents are poisonous. Do NOT enter the tank.



TG598736—UN—23OCT23
awqniwx,1718187372512-19-12JUN24

Clean Water Rinse Tank Decal

⚠ CAUTION: Use water for rinse/wash purposes only. Do NOT drink from this container. Container could become contaminated by chemicals. Fill with clean rinse water only.



TG591826—UN—19OCT23
awqniwx,1718187372459-19-12JUN24

Wheel Hardware Decal

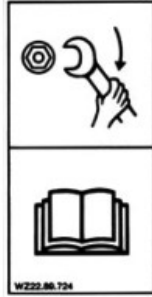
IMPORTANT: Damage to the planetary hub and wheel can occur if the correct mounting nut torque is not maintained.

1. Tighten nuts to specification.
2. Tighten nuts in a crisscross pattern to specification.
3. Tighten wheel mounting nuts after first 1 hour of use and every 10 hours thereafter until the correct torque is maintained.

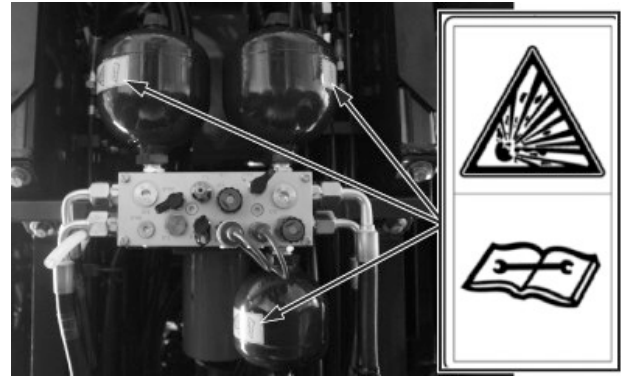
4. Check the wheel nuts torque after every 100 hours of use.
5. Retighten the wheel retaining nuts regularly to the below specification:

Specification

Wheel Mounting Nuts—Torque. 510 N·m
(376 lb·ft)



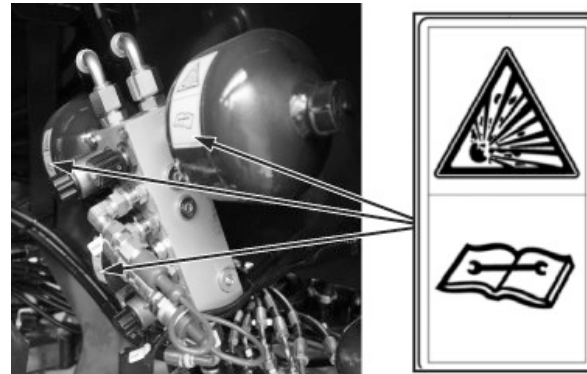
APY62031—UN—29JUN21
awqniwx,1718187372051-19-12JUN24



TG622744—UN—08MAY24
AWQNIWX,1754892984296-19-18AUG25

Rear Suspension Accumulator Decal

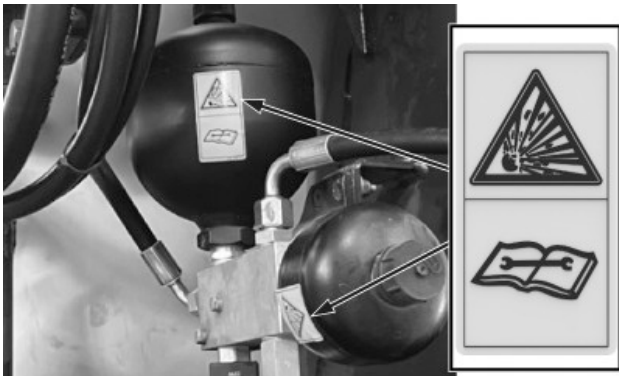
CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See your John Deere dealer or other service provider for more information about servicing the accumulator.



TG622743—UN—08MAY24
AWQNIWX,1754893009678-19-18AUG25

Boom Cylinder Accumulator Decal

CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See your John Deere dealer or other service provider for more information about servicing the accumulator.



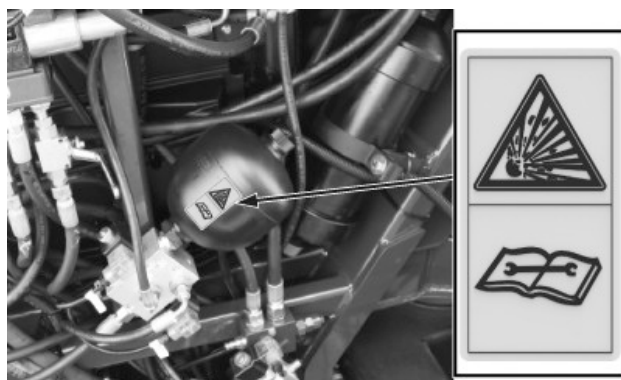
TG591832—UN—05APR24
AWQNIWX,1754892955019-19-18AUG25

Steering Accumulator Decal

CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See your John Deere dealer or other service provider for more information about servicing the accumulator.

Front Suspension Accumulator Decal

CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See your John Deere dealer or other service provider for more information about servicing the accumulator.



TG591833—UN—05APR24
AWQNIWX,1754893035249-19-18AUG25

Moving Parts Decal

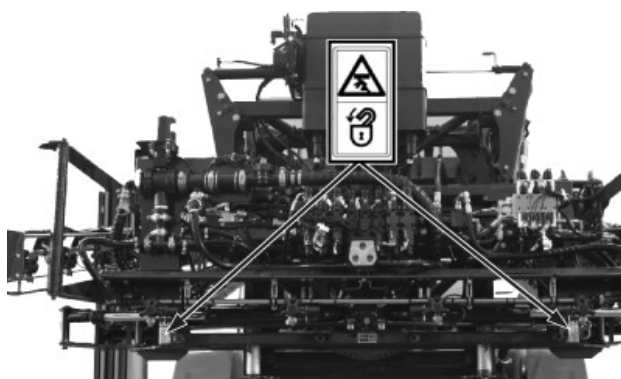
- ⚠ **CAUTION:** Do NOT open or remove safety shields while the engine is running.
- ⚠ **CAUTION:** Keep the hands away from moving parts of the boom.



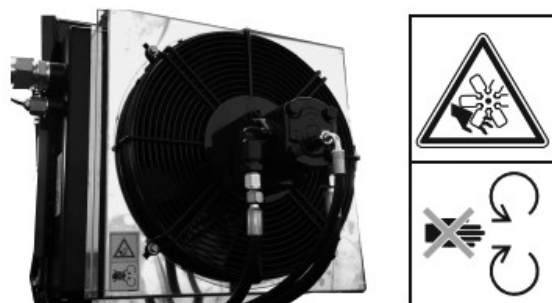
TG591837—UN—05APR24

Boom Spray Lock Decal

- ⚠ **CAUTION:** Keep away from the spray boom if the height adjustment has not been locked in place.



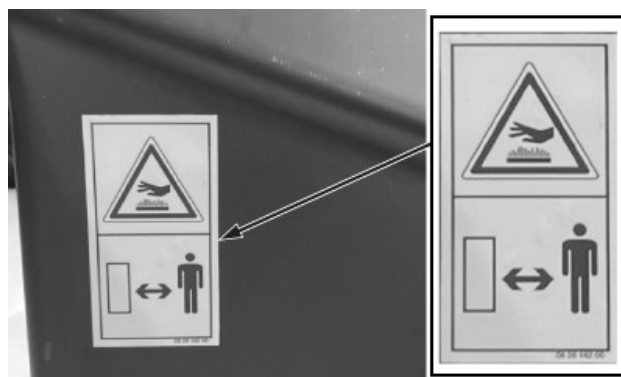
TG619075—UN—05APR24
awqniwx,1718187372402-19-12JUN24



APY62041—UN—29JUN21

Hot Surfaces Decal

- ⚠ **CAUTION:** Wait until all machine components have stopped and cooled down before touching them.



TG591838—UN—05APR24
awqniwx,1718187372368-19-12JUN24

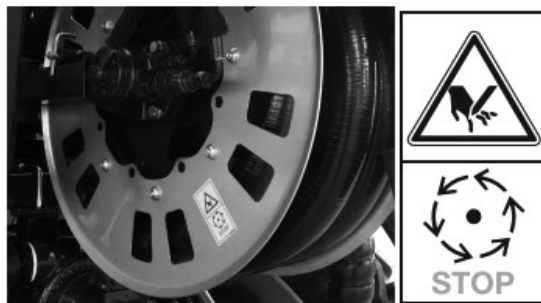


APY62042—UN—29JUN21
awqniwx,1718187372307-19-12JUN24

Boom Hinge Point Decal



APY62044—UN—29JUN21



APY62047—UN—29JUN21
awqniwx, 1718187371968-19-12JUN24



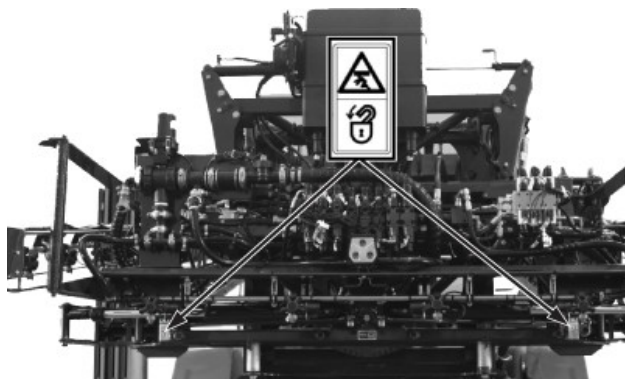
TG598688—UN—23OCT23

Agricultural Chemicals Decal

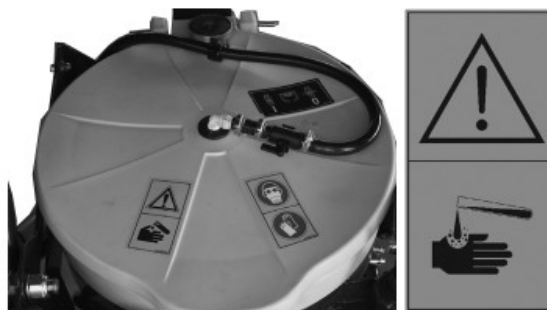
CAUTION: Agricultural chemicals can be dangerous. Improper selection or use can injure persons, animals, plants, soils, or other property.

To avoid a chemical injury:

- Select the right chemical for the job.
- Handle and apply it with care. Follow instructions issued by the chemical manufacturer.



TG619075—UN—05APR24



APY62051—UN—29JUN21
awqniwx, 1718187372234-19-12JUN24

CAUTION: Keep out of the folding/unfolding range of the spray booms.

CAUTION: To avoid injury, keep hands and fingers away from this area.

CAUTION: To avoid injury, keep clear of moving boom.

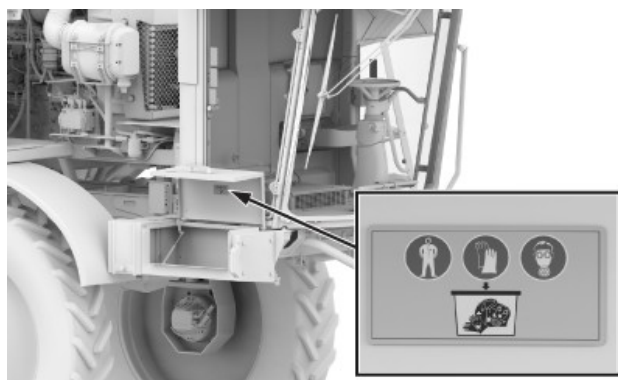
awqniwx, 1718187372273-19-12JUN24

Personal Protection Decal

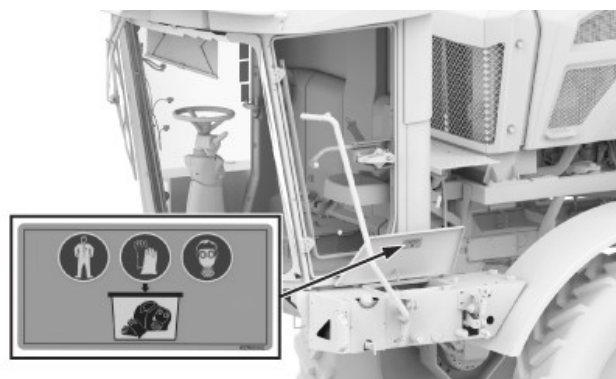
CAUTION: Always wear protective clothing when working with crop protection chemicals.

Rotating Parts Decal

CAUTION: Wait until all machine components have stopped before touching them.



TG618852—UN—05APR24



TG618853—UN—29APR24

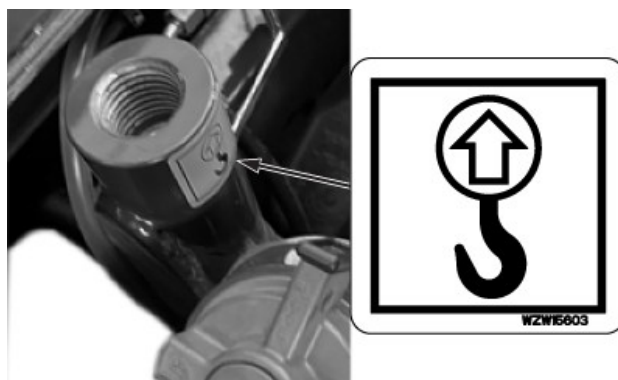


APY62055—UN—29JUN21
awqniwx, 1718187372198-19-12JUN24

Lift Points Decal



APY62058—UN—29JUN21



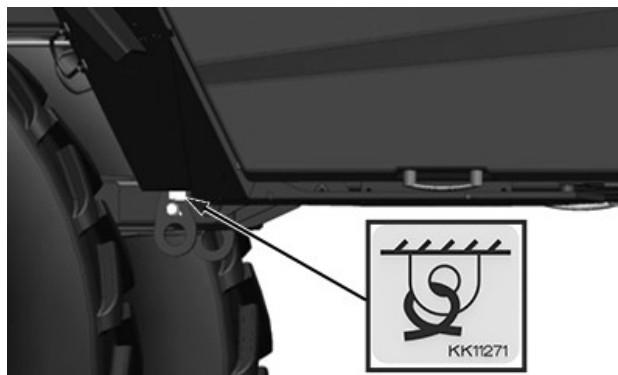
TG598692—UN—23OCT23

Lifting Points

This decal indicates the points to be used to lift the machine using lifting equipment such as cranes, hoists. Attach the lifting straps to these points following the instructions in this manual.

awqniwx, 1718187372164-19-12JUN24

Towing Point Decal



TG640724—UN—26JUL24

Towing Points

This decal indicates the points used for towing the machine. Properly secure the rope across the towing point before towing the machine.

awqniwx, 1718187371940-19-24JUL24

Cab, Controls, and Instruments

Access Cab Ladder

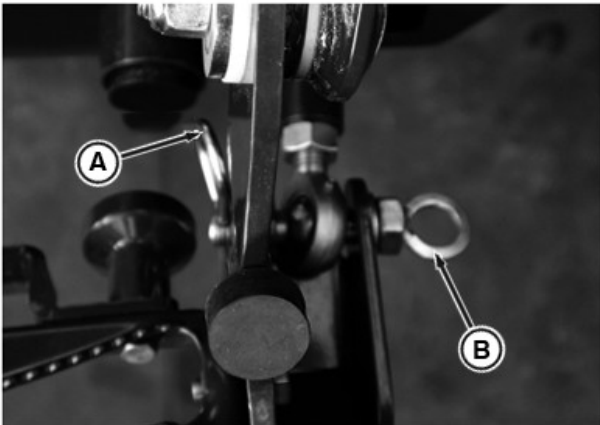
CAUTION: The operator should have the ability to open and close the ladder from the cab. Always pay attention when performing this operation. Make sure that the ladder is lifted and locked before driving the machine. Stop the machine and make sure that everyone is clear of the machine before unfolding the ladder. Park the machine, dismount, and manually lift it up.

NOTE: The internal switch light will not activate/deactivate if the door is open or closed.

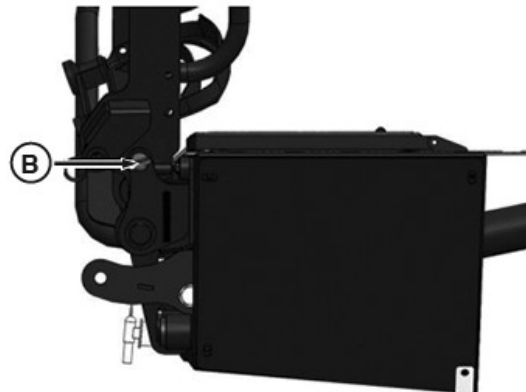


TG636331—UN—21.IUN24

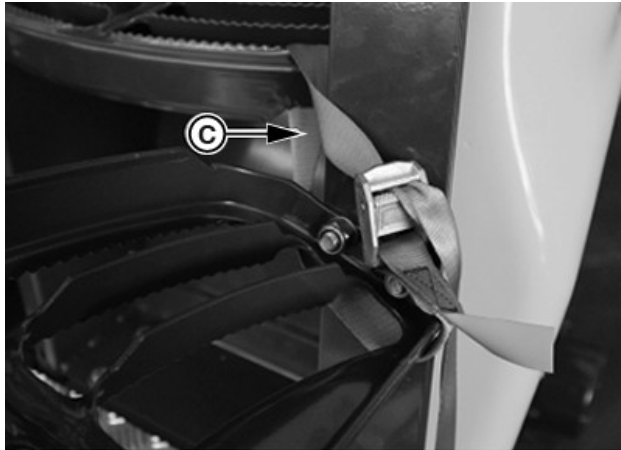
Lock the Ladder Manually



APY62061—UN—30JUN21



APY62062—UN—30JUN21



APY62063—UN—30JUN21

A—Cotter Pin
B—Bolt
C—Strip

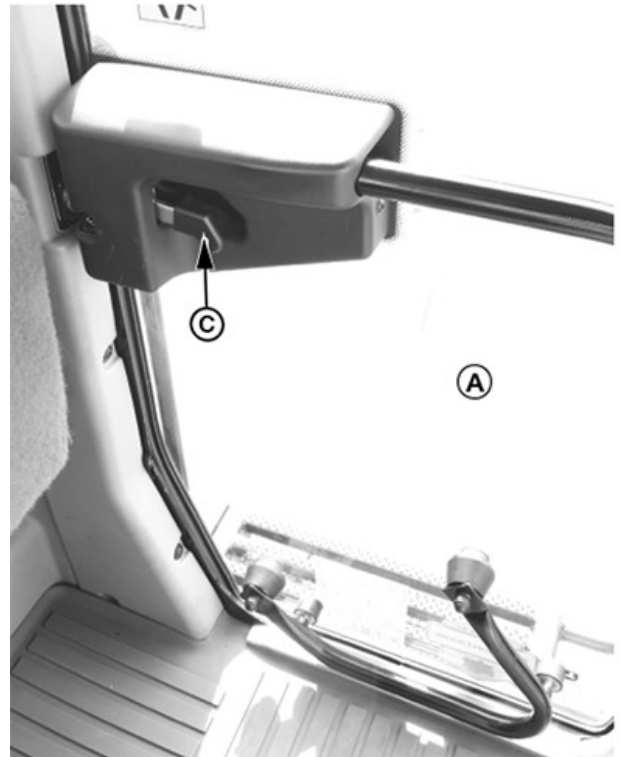
1. Before lifting the ladder, remove cotter pin (A) in the vertical direction, then remove bolt (B).
2. Lift the ladder until it is upside down. Insert the bolt (B) in the location indicated (safety hole). Assemble cotter pin (A).
3. If the ladder mechanism does not contain the safety hole and lift up the ladder, secure it with the auxiliary ladder by using strip (C) provided.

awqniwx,1717740376969-19-26JUL24

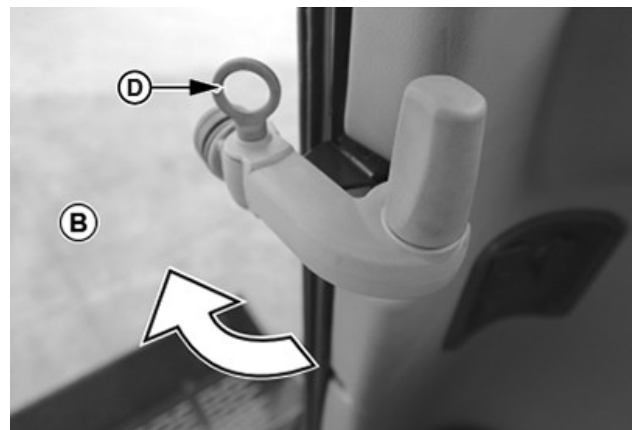
Emergency Exit

In an emergency, exit the cab through left-hand door (A) or right-hand door (B).

NOTE: Right-hand door is opened by removing door latch pin (D).



APY62064—UN—31DEC21



APY62065—UN—31DEC21

A—Left-Hand Door
B—Right-Hand Door
C—Left-Hand Door Latch
D—Door Latch Pin

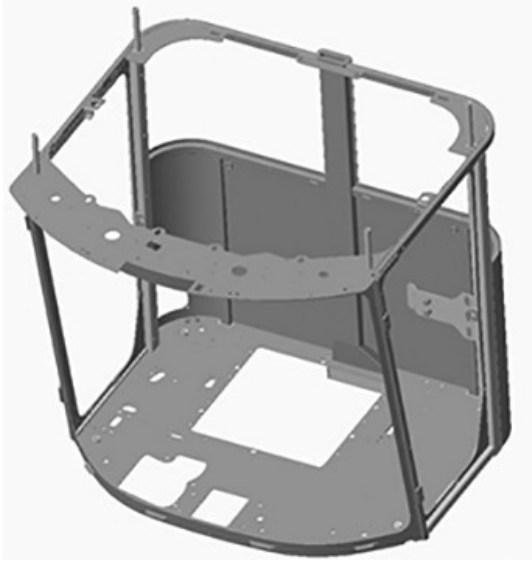
KWPZAG2,0000AA1-19-26JUL24

Operator's Cab Structure

CAUTION: Do NOT modify the operator's cab construction under any circumstances.

Do NOT modify structural members by welding on additional parts, drilling holes, cutting, grinding, and so forth.

A machine collision places severe strain on the structure. For safety reasons, a damaged cab should always be replaced.



APY62066—UN—30JUN21
awqniwx,1721982500664-19-26JUL24

cab offers against harmful substances in crop protection chemicals or liquid fertilizers.

NOTE: Replace the decal if missing or damaged. See your John Deere dealer or other service provider for assistance.



TG598702—UN—23OCT23

Cab Classification Label (located at the base of the cab safety decals)

Cab Classification according to EN 15695-1 (When Applying Plant Protection Products and Liquid Fertilizers)

IMPORTANT: Read the information the cab category stated on the cab classification label (A) placed inside the cab. Be aware of which cab category is installed on the machine.

IMPORTANT: Before working in an environment containing hazardous substances, such as when using pesticides, check whether the cab offers sufficient protection. Refer to the product data sheets or the documentation of the liquid fertilizer manufacturer specifying the cab category it can be used with.

IMPORTANT: Service the cab roof and external filters as specified. Refer to the service information as required in this Operator's Manual.

IMPORTANT: Refer to product data sheets and product identification of the crop protection chemicals. They contain important information on how to avoid hazard posed by harmful substances.

IMPORTANT: For category 3 and 4 cabs, determine whether the installed filters have been checked according to EN 15695-2 and whether they are suitable for the chemical being used. Refer to the filter manufacturer's information before working in an environment containing hazardous substances.

Cab classification according to EN 15695-1 provides information on the effectiveness of protection that the

A—Cab Classification Label

- Category 1—The cab does not offer any protection against substances harmful to health.
- Category 2—The cab offers protection against solid airborne particles such as dust but not against aerosols and vapors.
- Category 3—The cab offers protection against dust and aerosols (liquid airborne substances such as spray) but not against vapors.
- Category 4—The cab offers protection against dust, aerosols, and vapors.

The following requirements should be met to offer the best protection:

1. All seals (on door, windows, and roof) in good condition.
2. Doors, windows, and roof fully closed.
3. Grommets for cables in the cab properly sealed.
4. The fan is in ON condition.
5. Cab air filters are in good condition.

AWQNIWX,1755071956447-19-18AUG25

Air Quality in the Cab

In a Category 1 Cab, air quality is ensured by external and internal filters in the roof.

A Category 4 Cab is equipped with an external filter housing and internal filters in the roof.

! CAUTION: The use of the machine and maintenance and repair of the cabin should be performed only by the person properly trained and aware of dangers.

! CAUTION: The accident prevention regulations, all other generally recognized regulations on safety and occupational medicine and the road traffic regulations must be observed at all times.

! CAUTION: The operator should always keep the cabin clean and should remove shoes and clothes before accessing it, that were in contact with contaminated substances.

IMPORTANT: Do NOT use the machine for purposes other than intended.

Safety Rules for the Category 4 Cab (If Equipped)

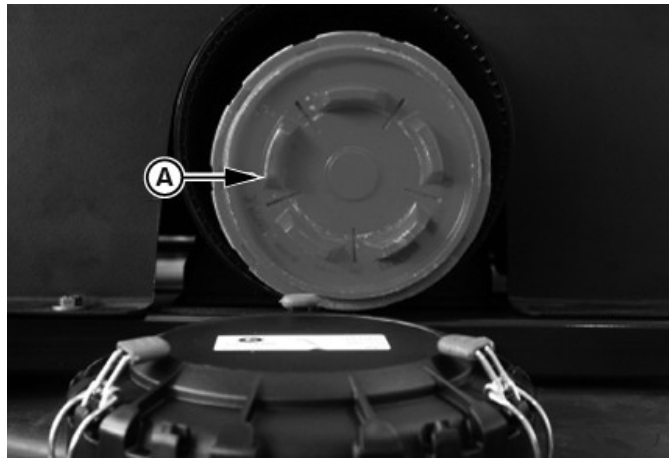
The plate mentioned and applied within the cabin informs that the cabin meets the requirements of DIN EN 15695-1.

Filter Housing Identification

IMPORTANT: The machine comes with filter (level 4) still enclosed in a special casing to ensure the maximum package from the first use. Before using the machine, it is mandatory to remove the filter from the package and place it correctly in the compartment.

The filter (A) is placed inside of the external housing (B), which is attached to the cabin.

KWPZAG2,0000AA4-19-06SEP21



APY62068—UN—30JUN21

A—Filter
B—External Housing
C—Filter Compartment



APY62069—UN—30JUN21

The air filter and two high-pressure fans that provide the

specified ventilation are accommodated within the housing (B).

Item	Measurement	Specification
Ventilation	Volume	30 m ³ /h

NOTE: The recommended filter type is KK57033.

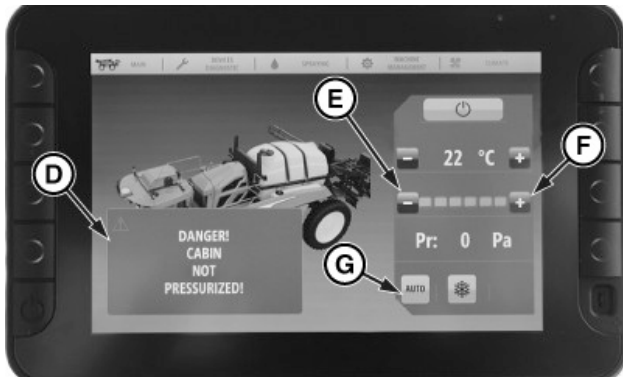
To perform the replacement of cab fresh air filter, access the filter compartment (C) as per indicated position (underneath the seat).

Safety Precautions

IMPORTANT: The air fan can be regulated before machine utilization. Access the pop-up (D) on the “Climatizzatore” page, pressing fan speed increase button (F) or fan speed decrease button (E), otherwise the automatic function can be activated on the auto adjust option (fan speed) (G).

IMPORTANT: By pressurizing the cabin less than 20 (Pa) and pop-up (D) is on, it is forbidden to use the machine. See your John Deere dealer or other service provider for more information.

During normal use of the machine should always check:



TG640321—UN—11JUL24

D—Pop-Up
E—Fan Speed Decrease Button
F—Fan Speed Increase Button
G—Auto Adjust Option(Fan Speed)

1. There is no indication on Tera 10 monitor related to the depressurized cab.
2. If cabin pressurization drops below the specification limit, depressurization pop-up appears.

Specification

Minimum Cab	
Pressure—Pressure.	20 Pa (0.0002 bar)

NOTE: If cabin pressurization is normal, depressurization pop-up (D) is not displayed on Tera 10 monitor.

3. With an increase in the amount of dirt, the resistance of air that passes through the filter cartridges also

increases, and pressure inside the cabin decreases permanently. When pressure reaches the minimum threshold, pop-up (D) lights up on Tera 10 monitor.

4. Increase the fan speed manually using the fan speed increase button (F) feature until the pop-up (D) disappears.
5. If the pop-up (D) appears with the fan at maximum speed, it means that external filter is clogged and requires replacement.
6. If the pop-up (D) does not disappear even though filter elements have been replaced, check the tightness of the cabin, in particular the door seals and the conveyor air.
7. With new filters, door closed and the fan on (maximum), the system should reach an internal pressurization of the cabin to the specification with engine at speed of 1500 rpm; pop-up (D) should be off.

Specification

Internal Pressure of	
Cabin—Pressure.	40 Pa (0.0004 bar)

Before First Use of the Category 4 Filter

CAUTION: When working on the opened filter housing, use respirator, gloves, and protective clothing.

IMPORTANT: Do NOT install damaged or expired filters.

IMPORTANT: Do NOT use a high-pressure washer for cleaning the filter housing.

Before the first use of the category 4 air filter system, carry out the following:

1. Remove the filter element from the original package.
2. Check the expiration date of the filter.
3. Record the date of the installation and engine hours in the service record booklet.
4. Check if the filter element seal is clean and not damaged.
5. Before installing a new filter, clean the inner surface of the filter housing.
6. Install the new filter into the housing and check the flow direction. Ensure that the filter housing is properly closed and locked.

Before Spraying

Before spraying, carry out the following:

1. Check if the door and window sealing are clean and not damaged.

2. Check if grommets for cables in the cab are sealed properly.
3. Turn the ignition to ON position.
4. Turn the fan to ON position.
5. Ensure that there is no warning sign related to the low cab pressure.
6. Wait 30 seconds before closing the doors and windows to purge the cab.

While Spraying

While spraying, carry out the following:

- Keep doors and windows closed. Increase the speed of recycled air fan when the cab pressure warning light comes on.
- Replace filter elements if the red warning light remains on after the speed of recycled air fan is at maximum.
- STOP spraying at the first sign of odors, smells, or irritation.

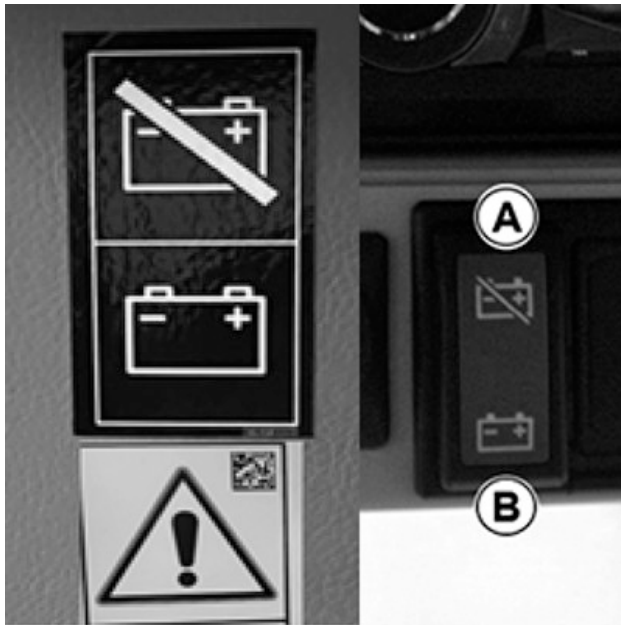
AWQNIWX,1754893408053-19-18AUG25

A—Battery OFF
B—Battery ON

1. Battery lock decal is positioned on the left-hand rear post, as indicated in the image.
2. Battery OFF (A) is the switch position for disconnecting the battery before dismounting from the machine.
3. Battery ON (B) is the switch position for switching on the machine.

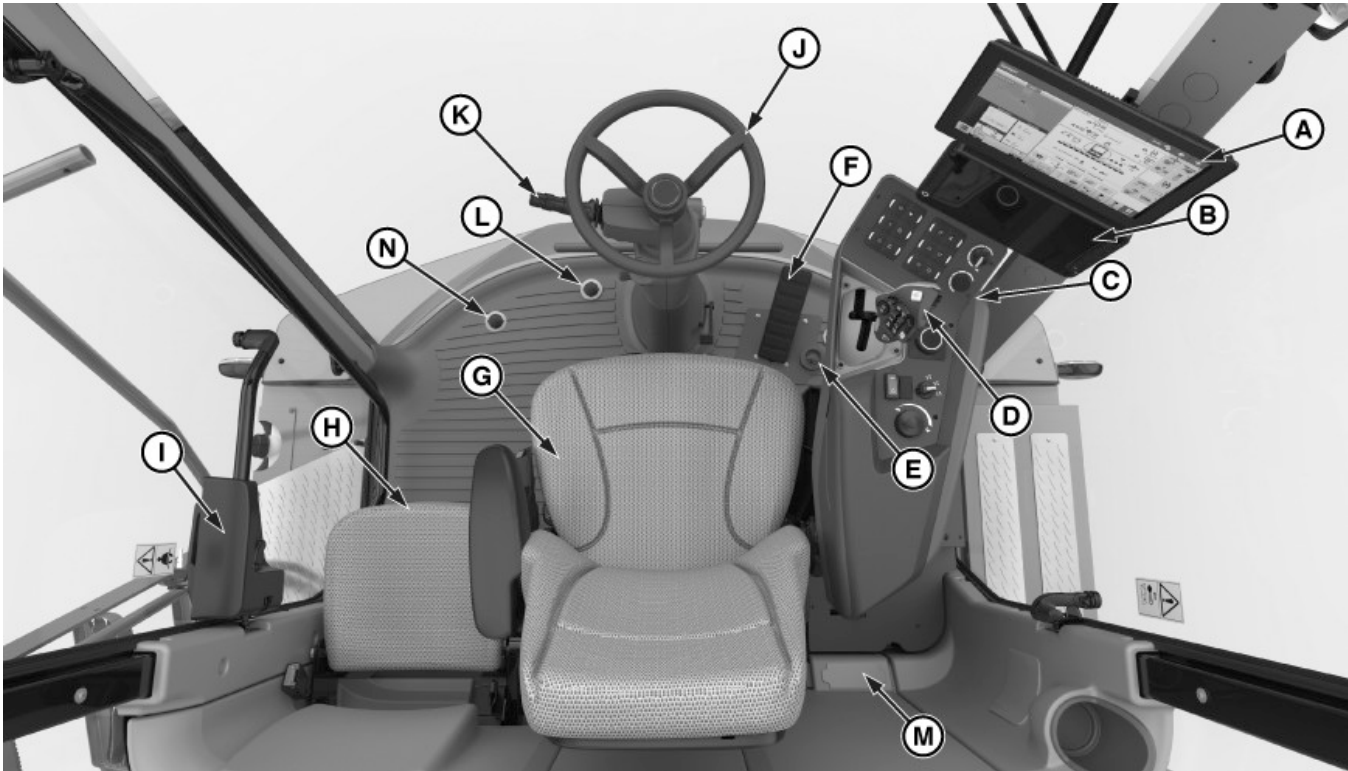
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Battery Lock Decal

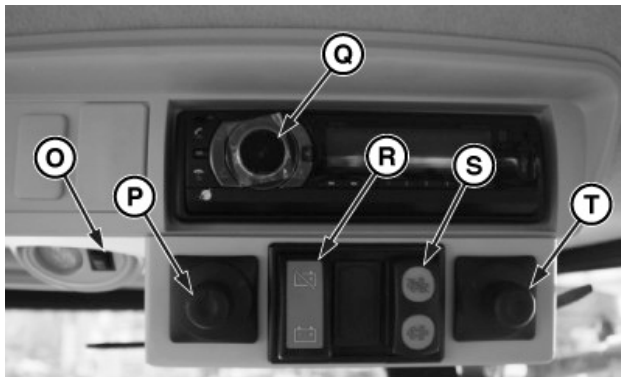


TG600031—UN—02NOV23

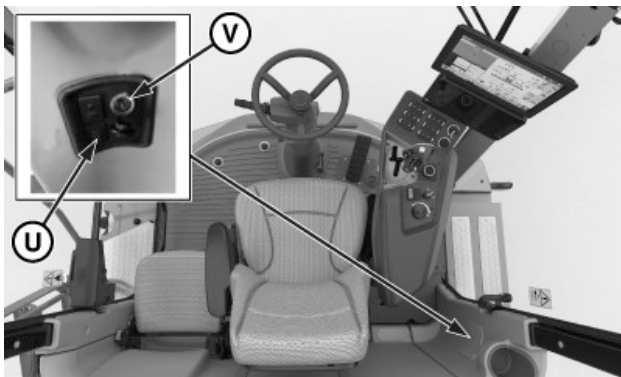
Vehicle Controls



TG659413—UN—03FEB25



TG640323—UN—11JUL24



TG659412—UN—03FEB25

- A—Gen5 Universal Display
- B—Tera 10 Display
- C—CommandARM™
- D—Multi-Functional Control Lever
- E—Differential Lock Switch
- F—Brake Pedal
- G—Operator's Seat
- H—Co-Passenger Seat
- I—Cab Door Handle
- J—Steering Wheel
- K—Turn Signal Lever
- L—2-Wheel/4-Wheel Steering Switch
- M—Cab Fuse Box Location
- N—Cruise Control Switch
- O—Reading Light Button
- P—Left-Hand Mirror Control
- Q—Radio
- R—Electronic Battery Switch
- S—Engine Regeneration
- T—Right-Hand Mirror Control
- U—USB Port
- V—12 V Port

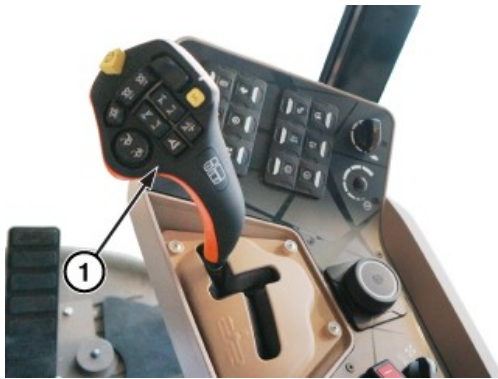
CommandARM is a trademark of Deere & Company

Differential Lock Foot Switch:

Differential lock switch (E) is utilized only during field mode. The foot switch is used for machine equipped with MHP11.

Emergency Brake:

The emergency brake can be activated by pulling the multi-function control lever (D) fast in direction opposite to the direction of travel. If the machine is moving in forward direction, to apply the emergency brakes pull the control lever back in reverse direction.

Cruise Control Function

TG600532—UN—08NOV23



TG640725—UN—26JUL24

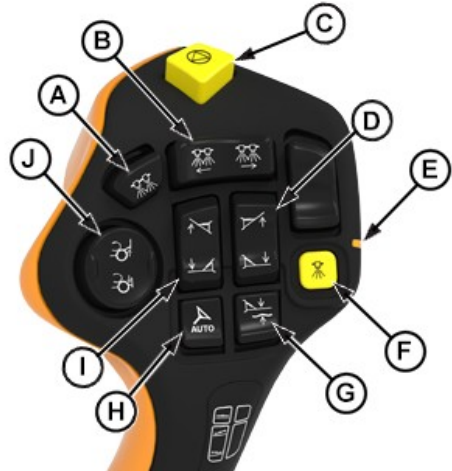
1—Multi-Functional Control Lever in Forward Position
2—Cruise Control ON Indicator

To activate the cruise control function, the machine must be traveling at a certain speed and the control lever must be in the desired position. Press the cruise control switch (N) to activate the cruise control function. The cruise control indicator (2) on the Tera 10 display turns green. If the multi-function control lever is moved in the forward direction further to increase the speed, the cruise control indicator will turn orange until the control lever is released. The cruise control function will remain active during this operation. Press the cruise control switch (N) again to deactivate the cruise control function. The cruise control function also gets deactivated when the brakes are pressed.

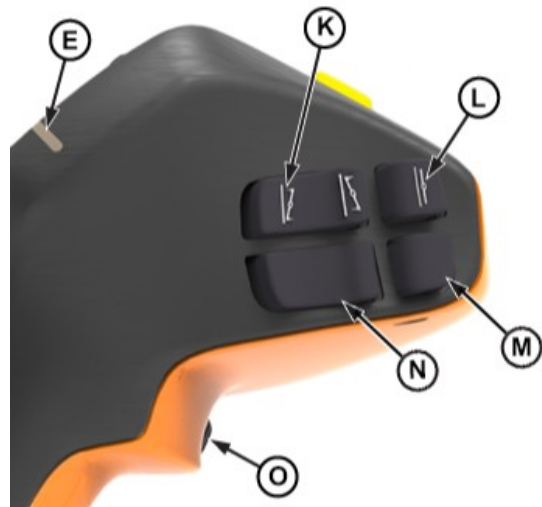
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MSpray Multi-Function Lever**Multi-Function Lever—Travel Direction**

*NOTE: External rate sensors are connected to the universal serial bus (USB) connection of the display (use options from AMS). In the sprayer, set the External Target Rate Source field to **Appl.map**. To verify the compatibility between sensors, display, and machine, check the AEF database.*



TG546293—UN—12OCT22



TG640776—UN—12JUL24

Some buttons on the multi-function control have two functions: level-1, and level-2. The level-1 functions are the default. The level-2 is intended for the boom-folding operations.

Switching between both the levels:

- **Select Level-1 Function Button:** Push the level confirmation button shortly.
The LED indicator (E) stops blinking, and the folding symbol disappears from the main screen of the control display.

- **Select Level-2 Function Button:** Push and hold the level confirmation button for at least one second.

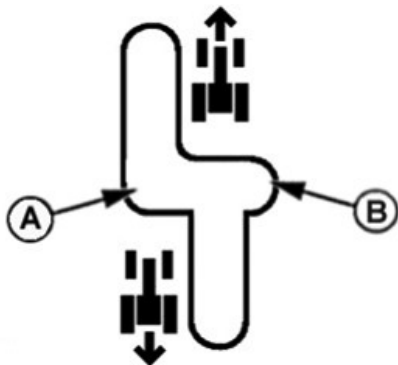
folding symbol appears on the main screen of the control display.

The LED indicator (E) starts blinking, and a pop-up

Button	Button Function Level-1	Button Function Level-2 ^a
A	All Sections Resume (indexed boom sections - IBS)	
B	Boom Section Indexing (indexed boom sections - IBS) Left/Right	Pendulum Lock ON/OFF
C	Quick Stop	Quick Stop
D	Right-Hand Variable Geometry (VG): Raise/Lower	Right-Hand Outer Boom: Fold/Unfold
E	LED Indicator: • OFF - Master Valve OFF (not spraying) • ON - Master Valve ON (spraying)	LED Indicator: • Blinking: Level-2 Function selected
F	Spray Master Valve: ON/OFF	
G	John Deere TerrainCommand™ Pro Switch	
H	AutoTrac™ Resume Button	
I	Left-Hand Variable Geometry (VG): Raise/Lower	Left-Hand Outer Boom: Fold/Unfold
J	Spray Boom: Raise/Lower	(Pendulum Lock: ON/OFF)
K	Boom Roll: Left/Right	
L	Boom Roll Centering	
M	Not Used	
N	Not Used	
O	Select Level-2	Select Level-1

^aIf there is no description, then the button function is not available.

Multi-Function Lever—Travel Direction



A—NEUTRAL
B—PARK

- Push the multi-function lever for forward travel.
- Pull the multi-function lever for reverse travel.

APY62077—UN—30JUN21

- Place the multi-function lever in the mid position for NEUTRAL (A) or PARK (B).
- The multi-function lever should be in the PARK (B) for the engine to start.

AutoTrac™ Resume Button



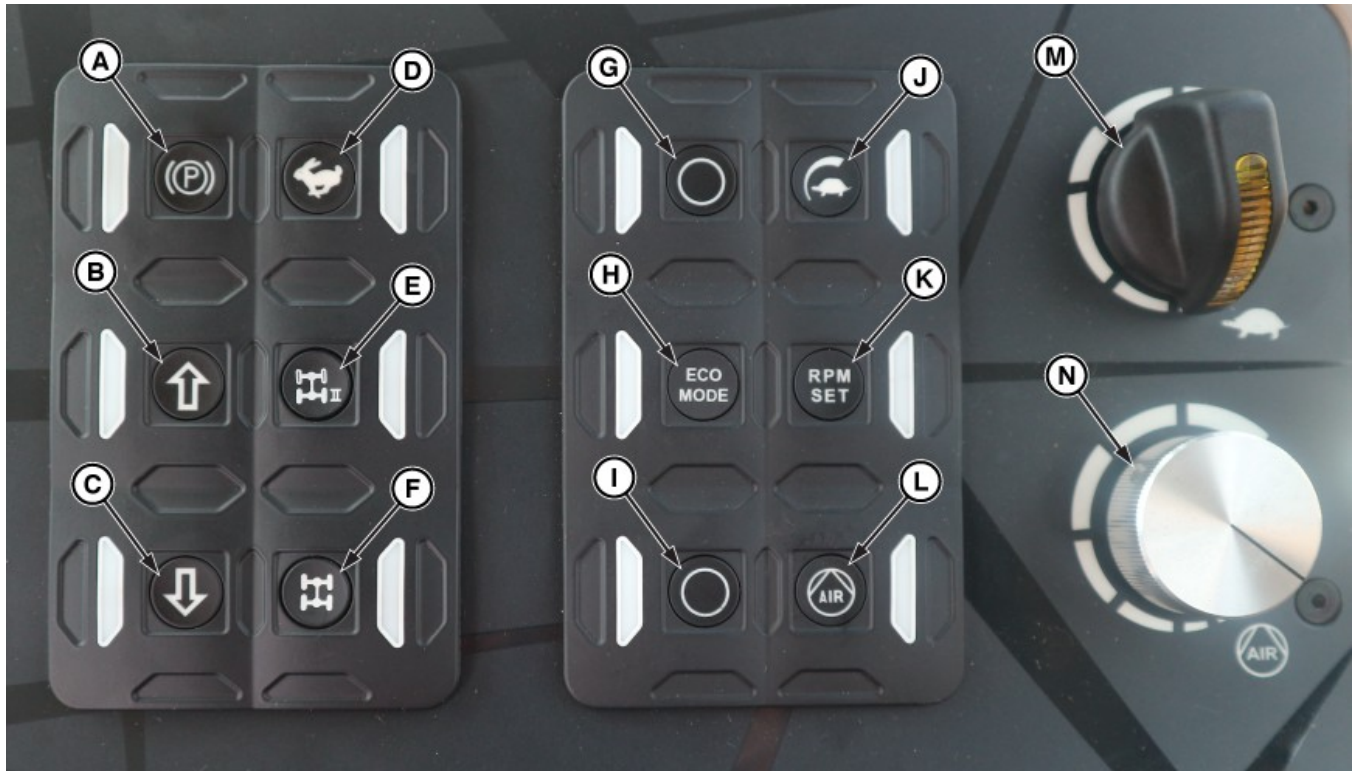
AutoTrac

H117005—UN—15APR16

AutoTrac™ resume button allows you to activate or deactivate system. Press the button to engage the system. The system will disengage in 4-wheel steer and operate in 2-wheel steer mode.

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CommandARM™ Controls

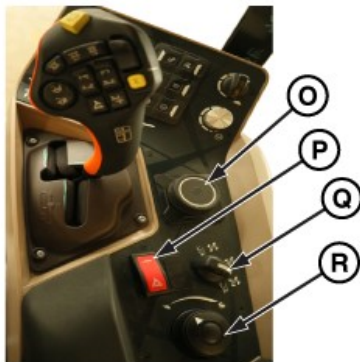


Ti-M Boom

TG649415—UN—11OCT24

- A—Parking Brake Button
- B—Cabin Access Ladder Up Button
- C—Cabin Access Ladder Down Button
- D—Fast Speed ON/OFF (in road transfer mode)
- E—I-II Gear Shift (Mechanical Axle)
- F—Four-Wheel Drive Activation/Deactivation (Mechanical Axle)
- G—Enable/Inhibit Control Lever
- H—Eco Mode Function (can only be activated in road transfer mode- once constant running speed is reached)

- I—Not Used
- J—Slow Motion Function ON/OFF
- K—Constant Engine Speed Function (1900 rpm-activation/deactivation)
- L—Air Sleeve Activation/Deactivation (if equipped)
- M—Potentiometer (for speed control in field mode)
- N—Potentiometer (for controlling air sleeve flow)
- O—Tera 10 Monitor Pointer and Selector
- P—Emergency Lights
- Q—Steering Mode Selector
- R—Engine RPM Potentiometer



TG598733—UN—20OCT23

NOTE: The Ti-M Boom has an additional switch. Please refer to the Boom Unfolding/Folding (Ti-M Boom) for more details.

awqniwx,1721218455829-19-11OCT24

TERA 10 Display



TERA 10 Display Functions

TG640327—UN—11JUL24

- 1—Display Brightness Level Increase
- 2—Display Brightness Level Reduction
- 3—Manual Reset Danfoss Steering System Control Unit
- 4—Video Camera Activation
- 5—Display Turn Off

- 6—Not Used
- 7—Not Used
- 8—Not Used
- 9—Password Insertion Call Page

CAUTION: When the parking icon flashes, it indicates that the park brake is unlocking and transition is disabled. Keep the joystick lever in **NEUTRAL** position and switch **ON** the icon of the Tera 10 monitor for 3 seconds.

The Tera 10 display functions are explained:

IMPORTANT: As soon as the optimal height of boom and parallelogram is reached, boom icons (51) and (53) will start blinking. Before folding the booms ensure that these icons are blinking.

- The Tera 10 is a multi functional touchscreen display offering easy access to the machine performance, functions, and operational conditions.
- Allows operators to perform diagnostics, check spray functions, perform adjustments, and to activate cab functions.
- A wide range of icons give the operator access to machine functions, performance levels and operational conditions.
- The icons with dotted lines are for adjusting setting.



TG648222—UN—20SEP24

- 1—MAIN Page View
- 2—DIAGNOSTIC Page View
- 3—SPRAYING Functions Page View
- 4—MACHINE MANAGEMENT Page View
- 5—Air-Conditioning Page View
- 6—Instant Fuel Consumption
- 7—Poclaim Error Codes (Hp version only)
- 8—Machine Working Hours
- 9—Active Recirculation Sign (Only for ARAG System if equipped)
- 10—Active Agitation Sign (Only for ARAG if equipped)
- 11—High Exhaust System Temperature (selective catalytic reduction SCR_icon HEST) Filter (emission control temperature is high or the cleaning of the exhaust filter takes place during motion)
- 12—Diesel Particulate Filter (goes off when diesel particulate filter DPF is under regeneration)
- 13—SCR_Rebuild Inhibition Filter (regeneration disabled by operator)
- 14—Machine Alarm (operator action required-error codes are displayed ON position 52)
- 15—Insufficient Battery Charge (warning light)
- 16—Engine Alarm Signal Indicator Light
- 17—Engine Failure or Defect
- 18—Glow Plug Cold-Weather Indicator
- 19—High Beam Light Activated
- 20—Low Beam Light Activated
- 21—Indicator Right/Left Light Activated
- 22—Position Lamp ON
- 23—Not used
- 24—Slow Motion Function Inserted
- 25—Fast Speed in Road Gears Indicator Lamp
- 26—Slow Speed in Field Gears Indicator Lamp
- 27—Rear Differential Lock
- 28—Brake System Pressure Low Warning Light
- 29—2-Wheel Steering Signal
- 30—4-Wheel Steering Signal
- 31—Crab Steering Signal
- 32—Rear Axle Lock Signal ON (gray lamp) and OFF (yellow lamp)
- 33—Solution Tank Full Indicator
- 34—Gear Number Engaged Indicator
- 35—Not Used
- 36—Not used
- 37—Parking Brake Indicator
- 38—Joystick Marking Indicator Light (N=Neutral, R=Reverse, 1 or 2)
- 39—Active Water Pump Warning Light (Only for ARAG System if equipped)
- 40—Front Steering in Center Position Signal Lamp
- 41—Rear Steering in Center Position Signal Lamp
- 42—Engine RPM Indicator
- 43—This icon is ON without the error codes indicates that the machine has reached its scheduled maintenance (the icon remains active for 40 hours and then turns off).
- 44—Engine Oil Pressure Display (in bar and psi)
- 45—Low Engine Oil Pressure Warning Light
- 46—Engine Coolant Temperature Display (in °C and °F)
- 47—Engine Coolant Temperature High Warning Light
- 48—Fuel Reserve Report Light
- 49—Fuel Level Display
- 50—Software Version
- 51—Left Boom Variable Geometry Height (Green Light Indicates VG height is below 4 m, Red Light indicates VG height above 4 m. Boom must be open and in horizontal position)
- 52—Machine Alarm Codes (check Diagnostics and Troubleshooting section for reference)
- 53—Right Boom Variable Geometry Height (Green Light Indicates VG height is below 4 m, Red Light indicates VG height above 4 m. Boom must be open and in horizontal position)
- 54—Boom Self-Leveling (Only for ARAG System if equipped)
- 55—EU Low-Level Signal Indicator Light (urea less than 10% = fixed on lamp and urea less than 5% = flashing lamp)
- 56—Urea Tank Fill Level
- 57—Machine Travel Speed in Km/hr
- 58—Cruise Control ON Indicator

Diagnostic Screen



TG640727—UN—26JUL24

Diagnostic Screen

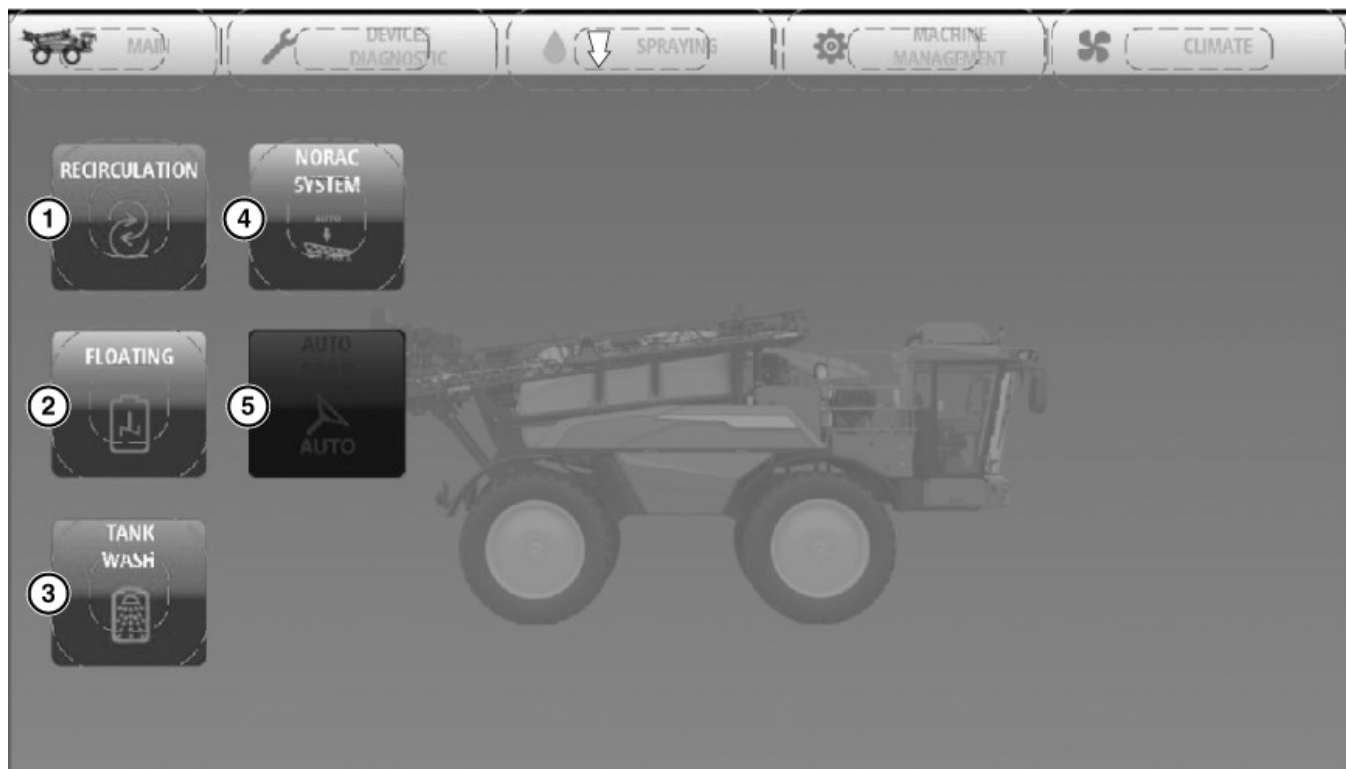
1—HE154 Main Controller Diagnostic Page
 2—LE70 Controller Diagnostic Page
 3—IO CORE Controller Diagnostic Page
 4—LIBERTY LINK Diagnostic Page

5—CAN Line Diagnostic Page
 6—UTILITIES Diagnostic Page
 7—ALARMS Diagnostic Page

Spray Screen

NOTE: Spraying functions on Tera 10 display is not utilized if the machine is equipped with MSpray system. The Spray functions are controlled by the Gen5 universal display for the machines equipped with MSpray system.

NOTE: The guide icon (AutoTrac) is also present with Mspray system.



TG640328—UN—11JUL24

- 1—Flushing Activation/Deactivation
- 2—Agitation Activation/Deactivation
- 3—Rinsing Spray Tank Activation/Deactivation

- 4—NORAC™ System Activation/Deactivation
- 5—AutoTrac™ Activation/Deactivation

Machine Management Screen



TG640728—UN—26JUL24

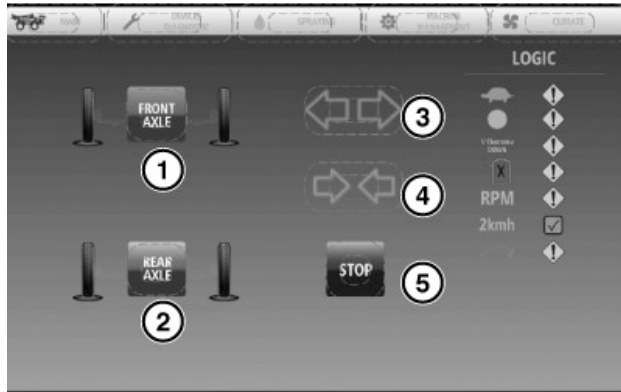
1—Tread Settings Screen
2—Working Lights Screen

3—Steering System Screen
4—Display Language Selection Screen

Tread Width Screen Settings

IMPORTANT: To execute the tread settings, all the LOGIC conditions should be respected.

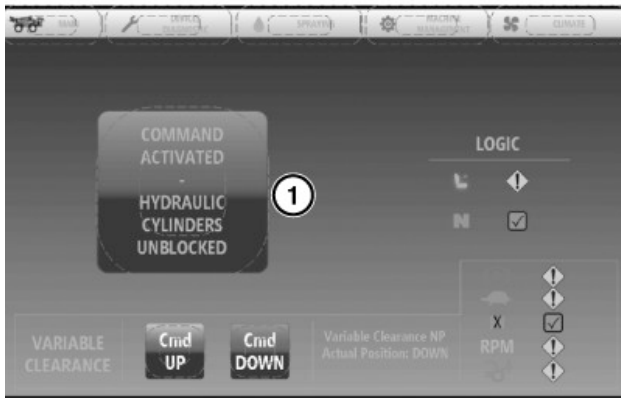
Automatic Axle Alignment



TG640729—UN—26JUL24

- 1—Front Axle Option Icon
- 2—Rear Axle Option Icon
- 3—Open Tread Settings Icon
- 4—Close Tread Settings Icon
- 5—Stop Operation

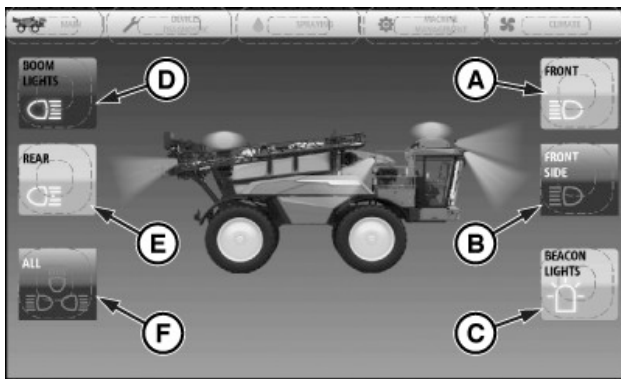
Hydraulic Axle (with hydraulic lock)



TG640730—UN—26JUL24

1—Green Icon (axle is unlocked)

Works Light Screen

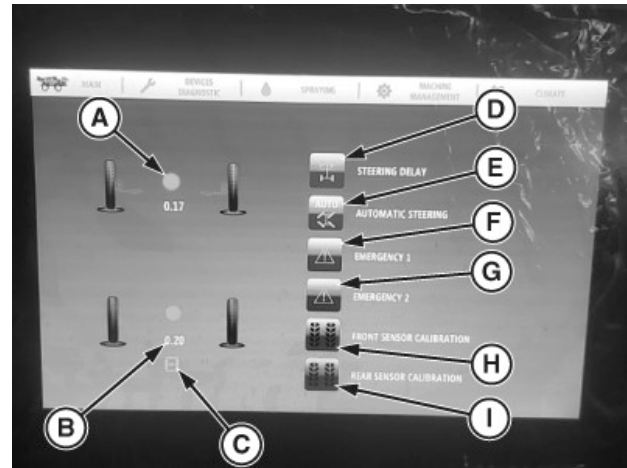


TG640329—UN—11JUL24

- A—Front Working Lights ON/OFF
- B—Front Side Lights ON/OFF
- C—Beacon Light ON/OFF
- D—Boom Lights ON/OFF
- E—Rear Working Lights ON/OFF
- F—All Working Lights ON/OFF

Steering System Screen

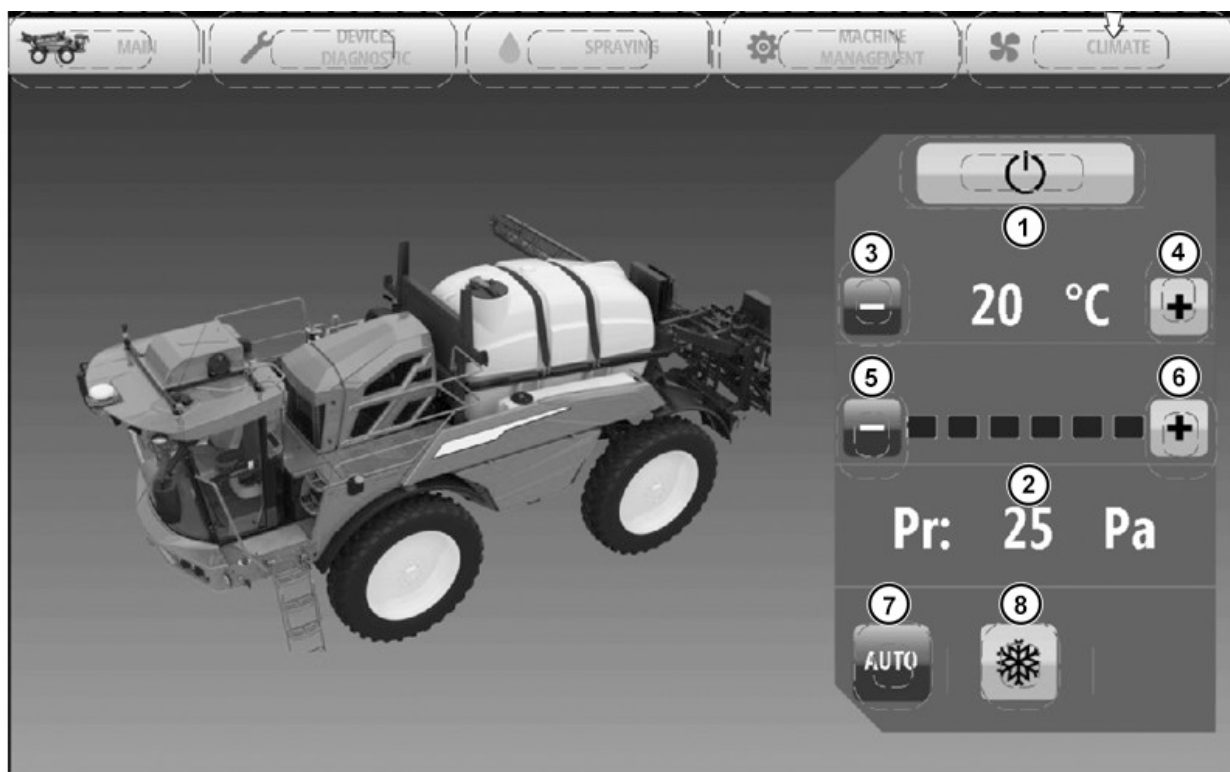
S-2C Steering System



TG640731—UN—26JUL24

- A—Front Axle in Central Position Indication Light
- B—Rear Axle in Central Position Indication Light
- C—Rear Axle Lock Indicator
- D—Not Used
- E—Not Used
- F—Warning Light (active when steering DTC occurs)
- G—Warning Light (active when steering DTC occurs)
- H—Front Sensor Calibration Icon
- I—Rear Sensor Calibration Icon

Air Conditioning Page



TG640330—UN—11JUL24

- 1—ON/OFF Button
- 2—Cab Pressure Indicator
- 3—Temperature Decrease Button
- 4—Temperature Increase Button

- 5—Fan Speed Decrease Button
- 6—Fan Speed Increase Button
- 7—Automatic Climate Control
- 8—Air Conditioning Activation/Deactivation

awqniwx,1718190518508-19-24JAN25

Key Switch

⚠ CAUTION: Sound horn before starting engine to clear people away from the machine. To avoid the possibility of personal injury or death, start only from the operator's seat. Do NOT start engine by shorting across starter terminals. The machine starts in gear when the normal circuit is bypassed.

⚠ CAUTION: Make sure NEUTRAL icon (40) is active before starting engine.

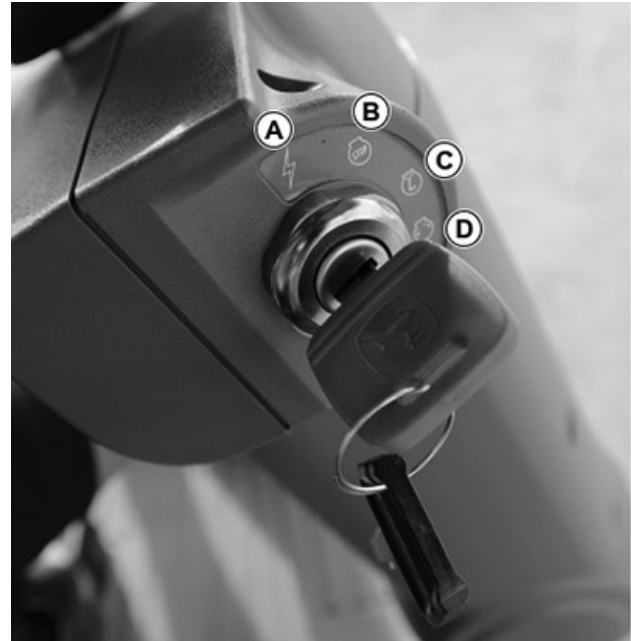


TG640732—UN—26JUL24

18—Glow Plug Cold Weather Indicator Light

CAUTION: If the engine does not start within 30 seconds, remove the key and wait about two minutes before trying again. The motor is controlled by an electronic management system that autonomously checks the conditions to start the motor. Before turning the key to position (D), the operator should only check that indicator light (18) of the spark glows on the dashboard display is off and that the control lever is in the NEUTRAL position.

40—Neutral Icon



APY62094—UN—30JUN21

- A—Accessories Position
- B—OFF Position
- C—Accessory/Run Position
- D—Start Position

Key switch is on the right-hand side of the steering column and has four positions:

1. **Accessories position (A)** enables the accessories such as radio and windshield wiper operation.

2. **OFF position (B)** shuts off engine and all accessory functions.
3. **Accessory/Run position (C)** enables all the accessories operation and engine to run once it has been started.
4. **Start position (D)** is a momentary switch position that starts the engine. Once the engine starts and the switch is released, it returns to accessory/run position.

awqniwx,1718190613153-19-24JUL24

Adjusting Steering Wheel

IMPORTANT: Adjust steering wheel only when the vehicle is in park position



A—Knob

TG659416—UN—03FEB25

Telescope- Rotate the knob (A) in counterclockwise direction to release the lock. Extend or retract the steering wheel to desired position. Rotate the knob (A) in clockwise direction to lock.



APY85141—UN—30MAY23

B—Lever

Tilt- Pull up on lever the lever (B) and move the steering to the desired position. Release the lever to lock.



TG659415—UN—03FEB25

C—Foot Pedal

Memory- Push down the foot pedal (C) on the floor of the cab to permit steering column to move up and out of your way for easy entry or exit. Push down on the foot pedal (C) and pull down on the steering wheel to return steering column to previous setting

awqniwx,1718190648220-19-03FEB25

Outside Mirror Control Switch



A—Left Mirror Control Switch
A1—Neutral Position
A2—Upper Mirror Adjusting Control
A3—Lower Mirror Adjusting Control

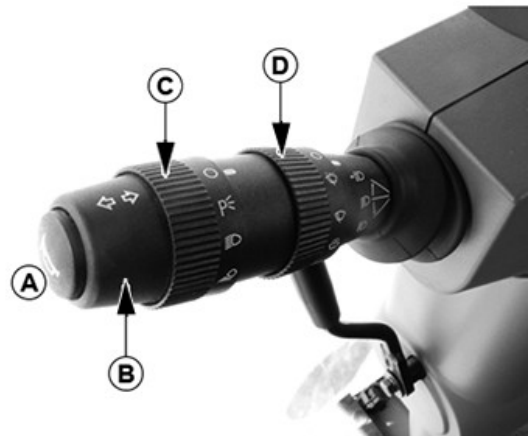
B—Right Mirror Control Switch
B1—Neutral Position
B2—Upper Mirror Adjusting Control
B3—Lower Mirror Adjusting Control

TG640331—UN—11JUL24

Operate Horn, Lights, and Turn Signals

1. Select the mirror side to be adjusted using left mirror control switch (A) or right mirror control switch (B).
2. If upper mirrors should be adjusted, use the switch selecting the upper mirror adjusting control (A²) or (B²).
3. If lower mirrors should be adjusted, use the switch by selecting the lower mirror adjusting control (A³) or (B³).
4. Two neutral positions (A¹) or (B¹) are available.
5. Adjust the mirror by moving the (knob) left mirror control (A) or right mirror control (B) to the desired direction.

awqniwx,1718190741091-19-10JUL24



APY62098—UN—30JUN21

A—Horn Button
B—Lever
C—Headlight Switch
D—Wiper Switch

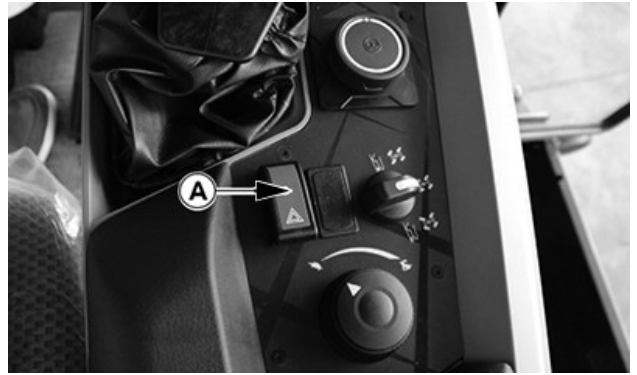
- To sound the horn, press inward on the horn button (A).
- Push the lever (B) up for a right turn, or pull down for a left turn. Return lever to the center position after completing turn.

- The headlights are activated by turning headlight switch (C).

Steps Clockwise:

- Turn lights OFF.
- Activate position lights.
- Activate road low lights.
- Activate road high lights.
- Ignition should be turned on for windshield wipers to operate.
- Turn wiper switch (D) clockwise to select the wiper operation mode.

KWPZAG2,000AAF-19-06SEP21



APY62099—UN—30JUN21

A—Emergency Light Switch

awqniwx,1718190807134-19-12JUN24

Emergency Lights

IMPORTANT: If any trouble is encountered on the machine when driving on public roads, switch on hazard warning lights using hazard warning lights switch (A).

Beacon Lights

IMPORTANT: Beacon lights are not authorized in all countries and should be used when driving slowly and when the vehicle width is excessive.



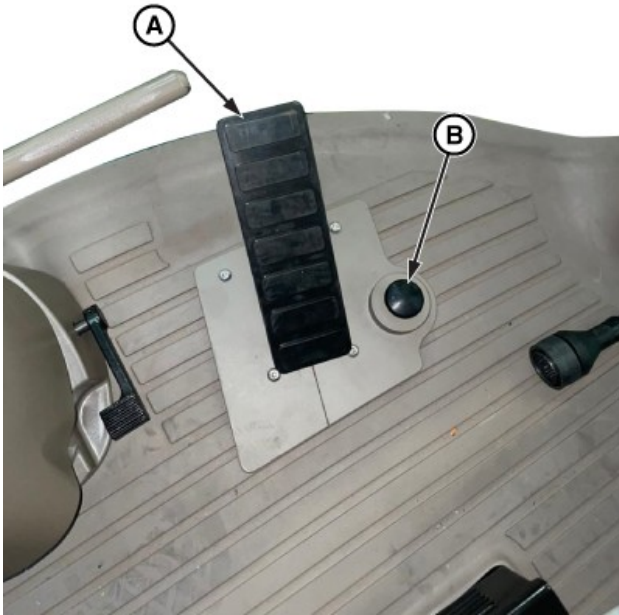
APY62100—UN—30JUN21

A—Beacon Light Button

KWPZAG2,000AB1-19-06SEP21

Service Brake Pedal

CAUTION: Be careful with sudden stops at the high speed. Smooth braking is recommended when the booms are unfolded.

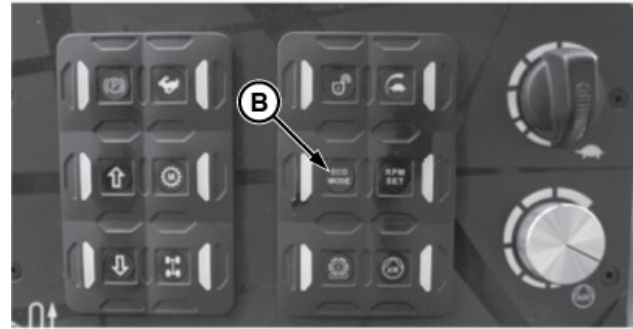


A—Service Brake Pedal
B—Differential Lock Foot Switch

The service brake pedal (A) operates the service brakes of the front axle.

APY85146—UN—01JUN23

awqniwx,1718190865562-19-12JUN24



TG648223—UN—20SEP24

A—Throttle Lever Knob
B—Eco Mode ON/OFF Button

1. The throttle lever is used to control the engine speed.
2. Rotate the throttle lever knob (A) clockwise to increase the engine speed.
3. Rotate counterclockwise to decrease the engine speed.
4. Eco mode is activated by pressing Eco mode ON/OFF button (B).
5. When Eco mode is on, there is no linear relationship between the throttle percentage and engine speed.
6. There are three steps on the throttle.

- First: Low idle
- Second: 1900 rpm
- Third: High idle

awqniwx,1720597936788-19-10OCT24

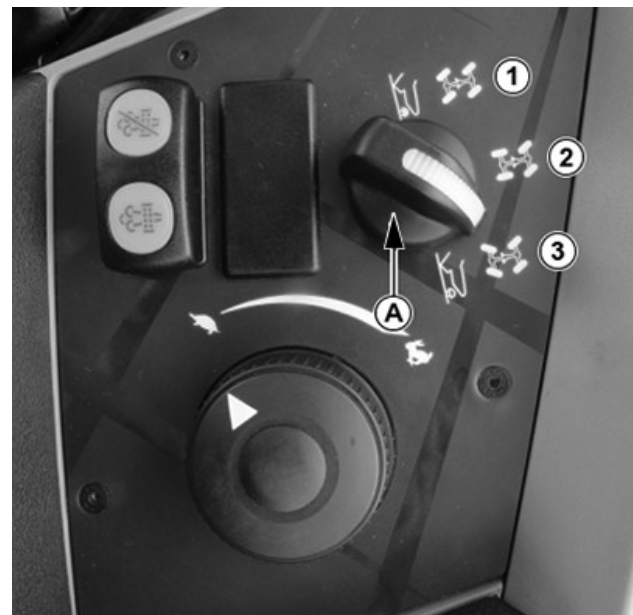
Throttle Lever

IMPORTANT: The Eco Mode function is present only on the machine equipped with hydraulic motors MHP11.



APY64202—UN—02JUL21

Steering Mode Switch



APY64204—UN—02JUL21

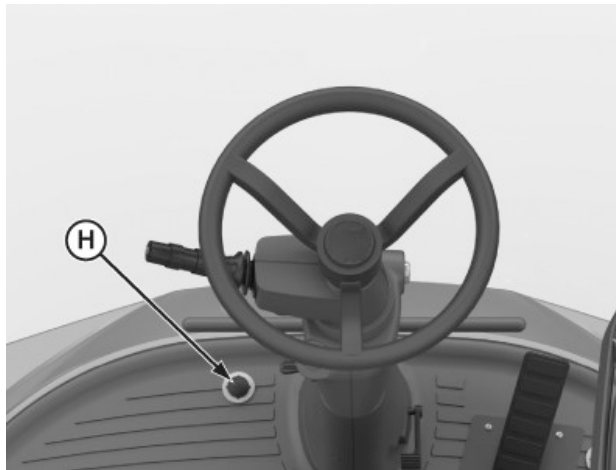


TG641924—UN—20SEP24

A—Dome Light
B—Switch
0—Position 0
1—Position 1
2—Position 2

- Dome light (A) remains on all the time.
- When the switch (B) is set to position 1 (1), it is on all the time.
- When the switch (B) is set to position 2 (2), lights are on whenever the door is opened.
- When the switch is set to position 2 (2), lights are off.

KWPZAG2,0000AB5-19-06SEP21



TG659417—UN—03FEB25

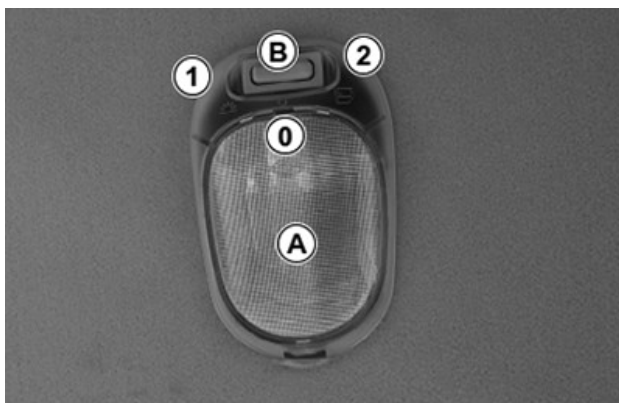
A—Steering Mode Switch
H—Foot Button
1—Crab Steering
2—2-Wheel Steering
3—4-Wheel Steering

The three steering modes are:

1. Crab Steering
2. Two-Wheel Steering
3. Four-Wheel Steering

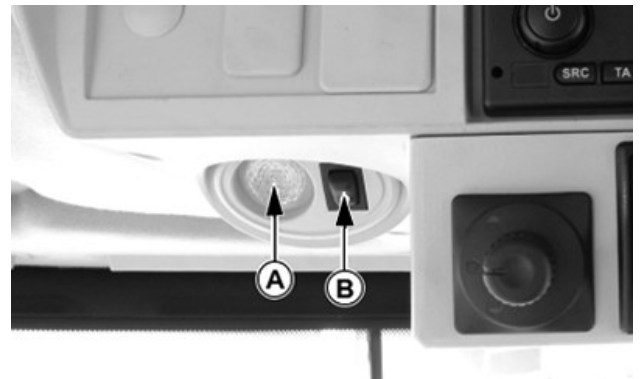
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Dome Light



APY64207—UN—02JUL21

Reading Light



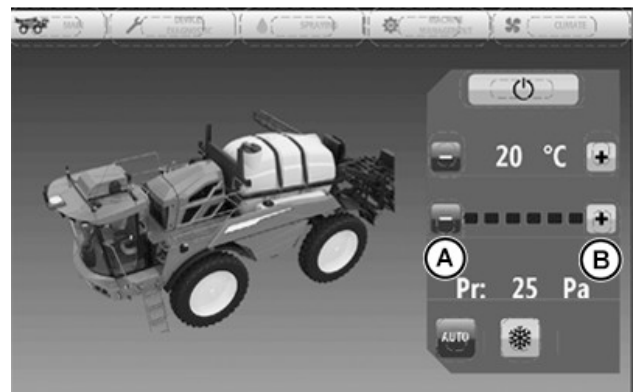
APY64208—UN—02JUL21

A—Reading Light
B—Switch

Press the switch (B) to switch ON/OFF the reading light (A) (on the driver's seat).

KWPZAG2,0000AB6-19-06SEP21

Fan and Air Louvers



TG640334—UN—11JUL24



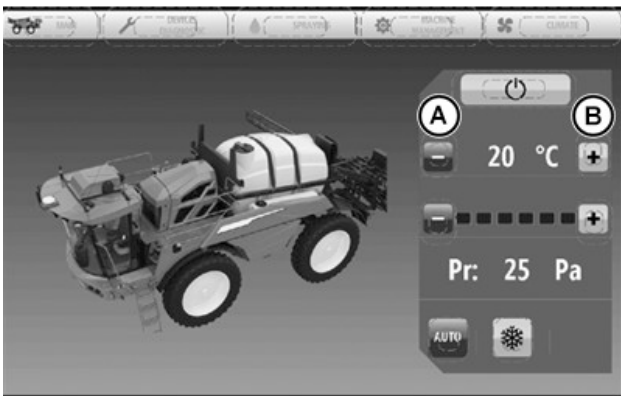
- A—Fan Speed Decrease Button
B—Fan Speed Increase Button
C—Air Louver (closed position)
C'—Air Louver (open position)

The fan speed is controlled by fan speed decrease button (A) and fan speed increase button (B) accessible on the air conditioning page on Tera 10.

The general direction of the airflow can be altered by means of air louver (closed) (C) and air louver (open position) (C').

awqniwx, 1720598191525-19-10JUL24

Heater



- A—Temperature Decrease Button
B—Temperature Increase Button

1. Temperature in the cabin can be adjusted using the air conditioning page on Tera 10 monitor.
2. To increase temperature, press temperature increase button (B). To decrease temperature, press temperature decrease button (A).
3. Set the fan and louvers to the desired position.
4. For best heating results, open the two front air louvers half-way and position them at a 45° to 55° angle to the front or down.

5. Close the center and rear air louvers.

awqniwx, 1720598365367-19-10JUL24

Air Conditioning System

IMPORTANT: To maintain consistent performance, turn on the air-conditioning system for 2 or 3 minutes once every month, regardless of weather conditions or season (with engine at low idle). Air conditioning control is set to the maximum cooling effect. At ambient temperatures below 4°C (39°F), the cab should be first heated (using the heating system) so that the temperature inside the cab is as high as possible.



- A—Air Conditioning Auto Option
B—(-) Air Conditioning Button
C—(+) Air Conditioning Button

1. Turn on air conditioning system using the air conditioning auto option (A) accessible on the air conditioning page on Tera 10 monitor.
2. To increase cooling effect, press (-) air conditioning button (B); to decrease the heating effect, press (+) air conditioning button (C).
3. Set the fan and louvers to the desired position.

Tips on Using Air Conditioning System

Prevent Windows from Fogging Up

NOTE: First check that the condensation drain is not blocked.

1. During the day:

IMPORTANT: Do not blow cold air at the windshield. Do NOT use window mode while running the air-conditioning at maximum (MAX) cooling.

(a) If it feels too cold when air conditioning is at maximum (MAX) cooling:

- Keep the fan running.
- Turn the temperature control to a warmer position.
- Leave the air conditioning on.

(b) If it still feels too cold:

- Keep the fan running.
- Turn the temperature control to a warmer setting (in the red zone).
- Leave the air conditioning on.
- If windows fog, slowly turn the temperature control to a cooler position until the windows start to clear.

(c) Before the tractor is stopped:

- Keep the fan running.
- Switch off the air-conditioning.
- Turn the temperature control to a warmer setting or leave it if it is already warm.
- Keep the fan running for a couple of minutes to dry the evaporator core.

2. In the morning (if air conditioning was in use the day before):

(a) During the first start-up:

- Set the air flow to footwell—NOT to window.
- Run the fan.
- Turn the temperature control to maximum (MAX) heating (in the red zone).
- If the tractor is not moving, open the cab door or window.

(b) As soon as hot dry air comes out the louvers:

- Set the air flow to window—to defog the windows.

(c) When the windows are clear:

- Set air-flow and temperature to a comfortable setting.

(d) If the ambient humidity is high, or if there is moisture inside the cab.

- With the temperature regulator set to warm,

switch the air conditioning on at the dehumidify switch for the special operation (cactus symbol).

awqniwx,1720598525183-19-20SEP24

Opening Windows

CAUTION: Keep windows shut tightly when the ambient atmosphere is contaminated with pesticides or other harmful substances.



APY65313—UN—07SEP21



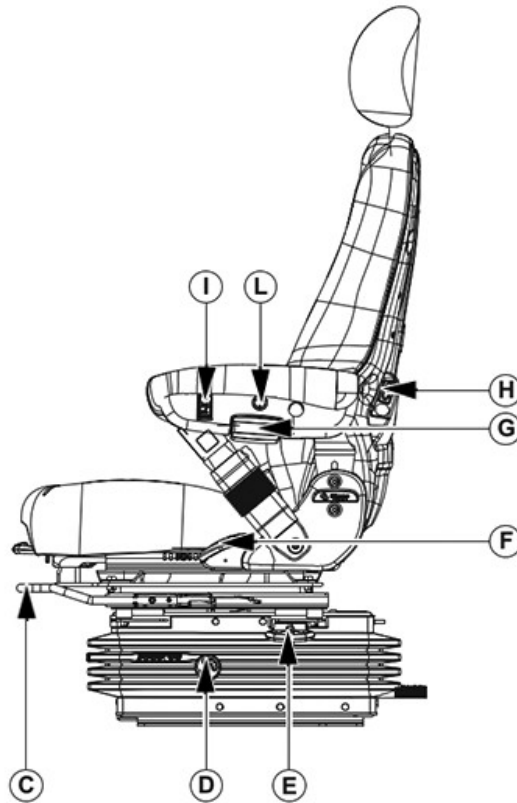
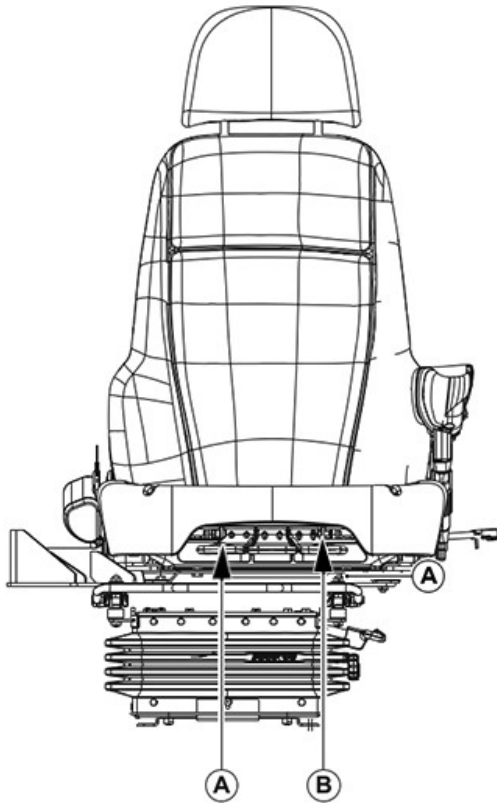
APY64213—UN—29JUL21

A—Right Door Latch

KWPZAG2,0000ABA-19-07SEP21

Operator's Seat

IMPORTANT: Park vehicle and shutoff engine before making seat adjustments.



APY64214—UN—02JUL21

A—Cushion Extension Control
B—Cushion Tilt Control
C—Fore/Aft Adjustment Control
D—Damper Adjusting Control
E—Fore/Aft Isolator Control

F—Recline Angle Adjusting Control
G—Armrest Angle Adjustment Control
H—Electrical Lumbar Control
I—Height Adjust Control
J—Heated Cushion Control

the heating system, providing comfort during cold days.

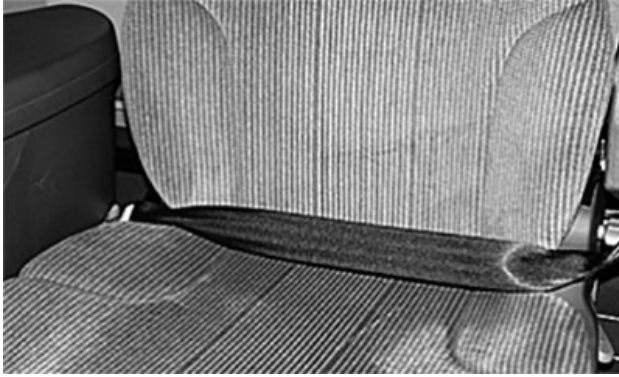
KWPZAG2,0000ABB-19-06SEP21

1. **Cushion extension control (A)** slides cushion forward or rearward.
2. **Cushion tilt control (B)** adjusts the cushion angle.
3. **Fore/aft adjustment control (C)** slides the seat forward or rearward for the best working position.
4. **Damper adjusting control (D)** allows adjustment of seat suspension.
5. **Fore/aft isolator control (E)** locks out or releases forward or rearward movements. Pull up on the handle to lock or push down on the handle to release.
6. **Recline angle adjusting control (F)** adjusts the seat back angle. Pull up on handle and adjust the backrest to the desired position and release the handle.
7. **Armrest angle adjustment control (G)** adjusts the armrest angle.
8. **Electrical lumbar control (H)** allows adjustment of the ergonomic position for the operator's back.
9. **Height adjust control (I)** allows optimization of the seat vertical position.
10. **Heated cushion control (J)** allows the activation of

Seat Belts

CAUTION: Always wear the seat belt.

IMPORTANT: Inspect the seat belt and mounting hardware on your machine at least once a year. If the seat belt system, including the mounting hardware, buckle, belt, or retractor, shows any sign of damage such as cuts, fraying, extreme or unusual wear, discoloration or abrasion, the entire seat belt system should be replaced immediately. For your safety, replace the belt system only with replacement parts approved for your machine.



APY64215—UN—29JUL21

1. Seat belts are the standard equipment on the operator seat and should be used every time machine is operated.
2. The lap type seat belts have the push-button quick release and the automatic belt retraction to allow getting in and out of the seat.

KWPZAG2,0000ABC-19-06SEP21

- The passenger seat is positioned next to the driving seat.
- The passenger seat is intended only for the transport of a passenger and for on-road operations (that is, transport from farm to field).
- Fold the passenger seat down (into a locked position) since it is usually folded up.

KWPZAG2,0000ABD-19-06SEP21

Passenger Seat

⚠ CAUTION: Always wear the seat belt.



APY64216—UN—02JUL21

Break-In Period

Break-In Checks—First 100 Hours

NOTE: The engine is ready for normal operation.

- Tighten wheel bolts daily during the first week of operation.
- Check for leaks.
- Operate the engine at heavy loads without reaching sustained maximum load.
- Avoid idling the engine longer than 5 minutes.
- Closely monitor coolant temperature during operation.
- Inspect air intake system hoses and clamps.

Maintenance—Daily or at Every 10 Hours

IMPORTANT: John Deere Break-In™ Plus engine oil must be added if the oil level is below the ADD groove mark on dipstick. Do not fill above the crosshatch pattern or the FULL mark groove.

- Check the engine oil level frequently.
- Check the coolant level frequently.
- Check the hydraulic oil level.
- Drain water and sediment from the water separator.
- Inspect tires for damage and correct inflation.
- Check air springs for proper inflation.

Maintenance—At Every 50 Hours

- Check boom safety joint springs.
- Check boom components and boom alignment.
- Check accumulator pressure.
- Inspect for rubbing and damaging to flexible pipes.
- Check air sleeve (if equipped).

At Every 100 Hours

IMPORTANT: Refill with Break-In™ Plus engine oil for an additional 100 hours if the vehicle was used under light load conditions during first 100 hours to allow the engine to break in properly. See Fuels, Lubricants, and Coolant section.

- Change engine oil and filter.
- Check tread adjust shim gap. See Lubrication and Maintenance section.
- Inspect the machine for any loose hardware.

NOTE: Reset service hours to zero after service has been performed.

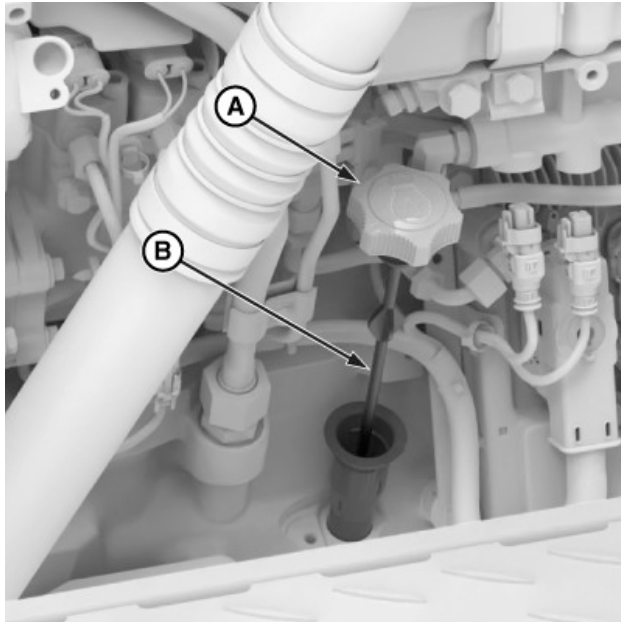
awqniwx,1718097269830-19-28JUL24

Break-In is a trademark of Deere & Company

Prestarting Checks

Check Engine Oil Level

IMPORTANT: Do NOT operate the engine with the oil level below the lower mark on dipstick. Do NOT fill the oil level above the upper mark on dipstick.



TG640337—UN—11JUL24

Cap and Dipstick

A—Cap
B—Dipstick

1. Park the machine on flat, level surface. Stop the engine and remove the key.
2. Unscrew the cap (A) from the tank.
3. Remove the dipstick (B) and wipe excess oil.
4. Insert the dipstick (B), then remove it and recheck the oil level.
5. Oil level should be between the two marks on the dipstick (B).
6. If the oil level is below the lower mark, add engine oil until its level is adequate.

After Prolonged Storage Period

Check for dirt or other foreign objects that may have collected under the hood. Remove them if necessary.

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Check Fuel Filter

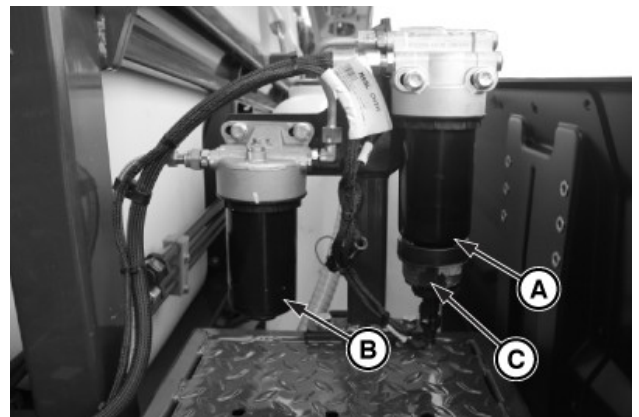
IMPORTANT: This graphic shows stage V engine, that is a John Deere engine in its most complete configuration.

To Perform Draining Procedure

IMPORTANT: Use a container under the filter when draining. Do NOT use tools on the drain valve. Close the valve finger tight only.

NOTE: See Filter Service Intervals in (Maintenance Interventions section) for times and instructions for replacing primary diesel fuel filter, secondary diesel fuel filter, engine oil filter, and OCV (open crankcase ventilation) filter.

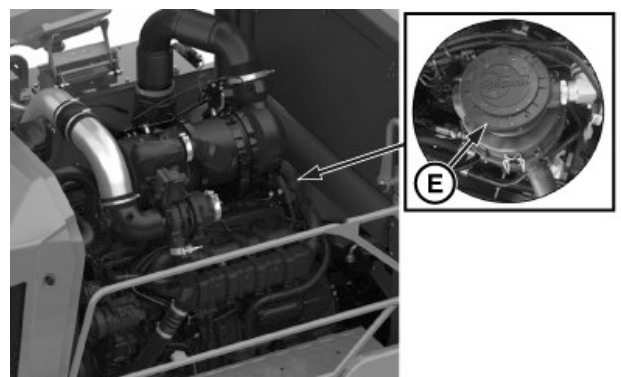
If water or sediment deposits have settled in filter, proceed as follows:



TG659410—UN—03FEB25



TG598974—UN—24OCT23



TG640338—UN—11JUL24

A—Primary Diesel Fuel Filter
B—Secondary Diesel Fuel Filter
C—Decanter Filter
D—Engine Oil Filter
E—OCV (Open Crankcase Ventilation) Filter

1. Stop the engine.
2. Lift cover of the engine hood.
3. Drain water and sediments into a suitable container by opening the drain valve of decanter filter (C) for 3/4 of a turn.
4. Retighten the plug once water and sediments have been drained out.
5. Turn main switch key to the right of the first switch position to operate fuel transfer pump.
6. Run the fuel transfer pump for approximately 40 seconds.
7. Check the filter for water or sediment deposits.
8. If water of sediment deposits have settled in the filter, follow the replacement procedure.

awqniwx, 1718191607355-19-03FEB25

4. Check coolant level at expansion tank, before starting vehicle.
5. If coolant level is low:
 - Check for any signs of leakage. Repair if necessary.
 - Tighten all hose clamps.
 - Remove overflow tank cap (A) and add coolant.
 - Reinstall overflow tank cap (A).
 - Clean any impurities in the radiator fins.

NOTE: Clean the protective radiator grille on a daily basis.

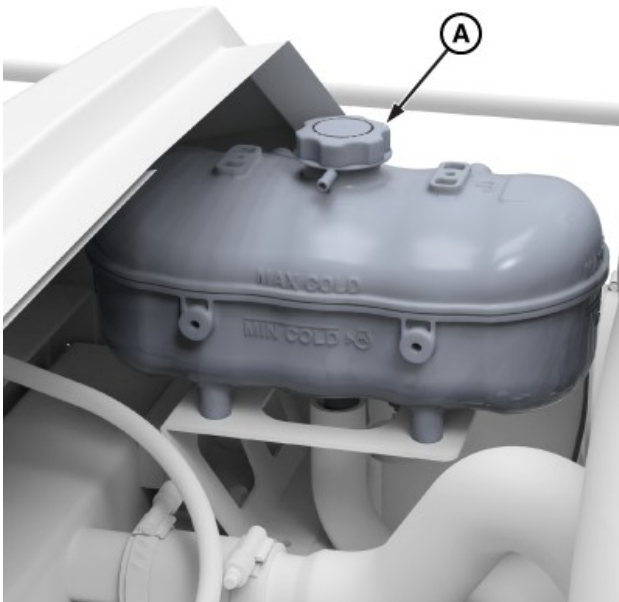
Clean any impurities in the radiator fins.

awqniwx, 1718191664032-19-12JUN24

Check Engine Coolant Level—Daily

CAUTION: Do NOT open overflow tank cap (A) until coolant temperature is below boiling point. To relieve pressure, first loosen the cap and then remove it completely.

To access the coolant tank: uncover the engine by lifting the protective hood.



APY85130—UN—17MAY23

A—Overflow Tank Cap

1. Stop the engine.
2. Lift cover of the engine hood.

IMPORTANT: Check coolant level daily before starting the machine when the engine is cold. Coolant level should be between the minimum and maximum level mark.

Check Hydrostatic and Hydraulic Oil Level

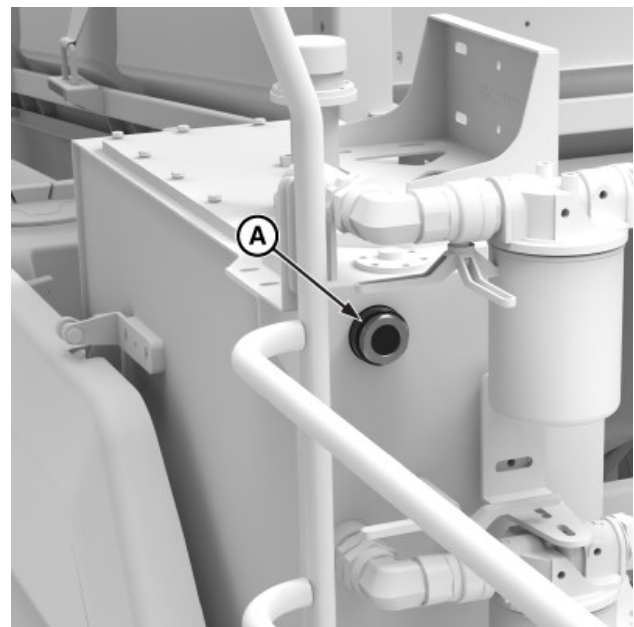
CAUTION: Hydraulic oil level must be checked with boom unfolded and lowered to an height of 50cm from ground.

1. Check hydro static and hydraulic oil level daily, and refill if necessary.

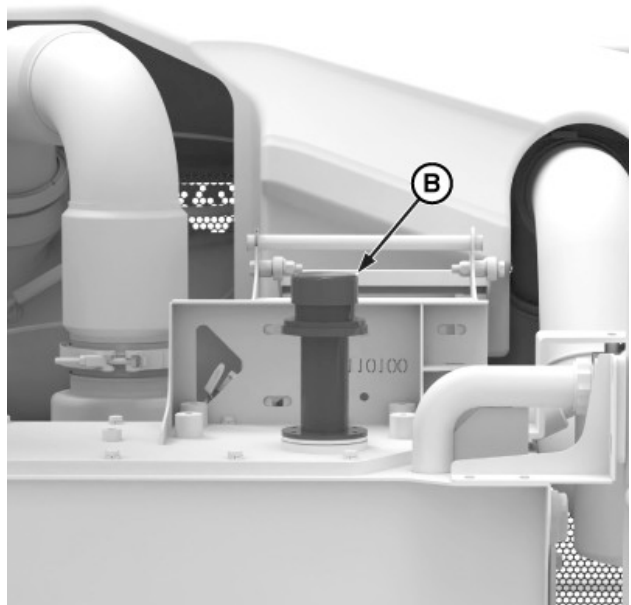
Specification

Hydro static and Hydraulic Oil

Reservoir—Capacity. 170 L
(45 gal)



APY85132—UN—17MAY23



TG640339—UN—11JUL24

A—Level Indicator
B—Cap

2.If the level is low, add oil through the cap (B).

NOTE: Check hydro static and hydraulic oil level daily on hydro static and hydraulic oil level indicator (A) located in the reservoir.

awqniwx,1718191703928-19-10OCT24

Fill Fuel Tank

CAUTION: Shut off engine before filling fuel tank.

Park machine on a flat, level surface with attachments lowered to the ground and turn engine off.

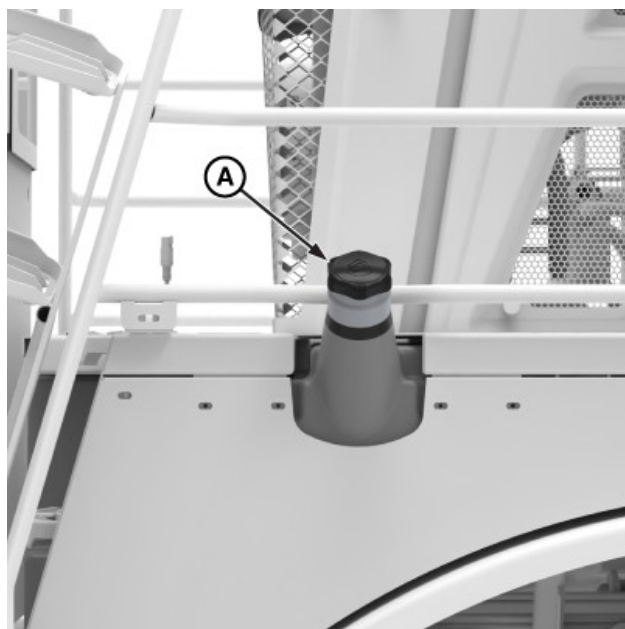
Keep the machine away from ignition sources and open flames.

Move the sprayer arms to transfer position.

- Fill the fuel tank to specification.

Specification

Fuel Tank—Capacity. 300 L
79 gal



APY85133—UN—17MAY23

A—Cap

- Reach the fuel tank, located behind the cab.
- Turn the cap (A) counterclockwise, lift and remove the cap.
- Fill the tank with a recommended grade of diesel fuel.

awqniwx,1718191799697-19-12JUN24

Fill Diesel Exhaust Fluid (DEF) Tank

CAUTION: Avoid serious injury from falling. Do NOT stand on the fuel tank. The diesel exhaust fluid (DEF) contains urea.

Do NOT get the substance in eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes.

Do NOT take the substance internally. In event DEF is ingested, contact a physician immediately. Reference materials safety data sheet (MSDS) for additional information.

IMPORTANT: Never put DEF in the diesel fuel tank, or diesel fuel in DEF tank.

IMPORTANT: Spilled DEF, if left to dry or if wiped away with a cloth, leaves white residue. Aside from cosmetic issues, an improperly cleaned DEF spill could interfere with diagnosis of selective catalytic reduction (SCR) system leakage problems.

1.Fill the DEF tank to specification.

Specification

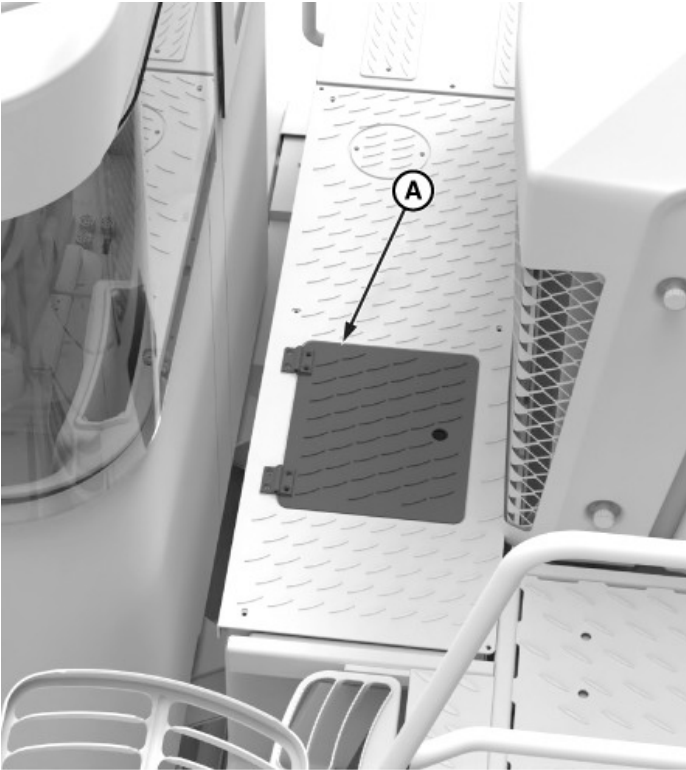
Diesel Engine Fluid
Tank—Capacity. 19 L
(5 gal)

2. Fill the DEF tank every time the machine is refueled.
3. The alternative option to monitor diesel exhaust fluid (DEF) is to check the DEF level indicator (on corner post display) and refill when the DEF level is low.
4. To avoid drastic changes in machine performance, always keep the DEF level above the (topmost) red

mark on the level indicator. See Operating the Machine section.

5. To fill DEF tank:

- a. Wash and rinse items thoroughly with distilled water to remove contaminants, before the items (such as containers, funnels) are used to dispense DEF.



A—Tank Cover

- b. Pull out the DEF tank cover (A), to access DEF tank.
 - c. Wipe DEF tank cap (B) and areas around filler neck, to reduce the chance of contaminating DEF.
 - d. Remove tank cap (B).
 - e. Use the funnel to carefully pour DEF into tank and watch the level through filler neck.
 - f. Securely tighten the DEF tank cap (B).
 - g. Carefully clean any spills, using only distilled water.
6. If unapproved fluid, such as diesel fuel, or engine coolant is added to vehicle DEF tank, drain and rinse tank.

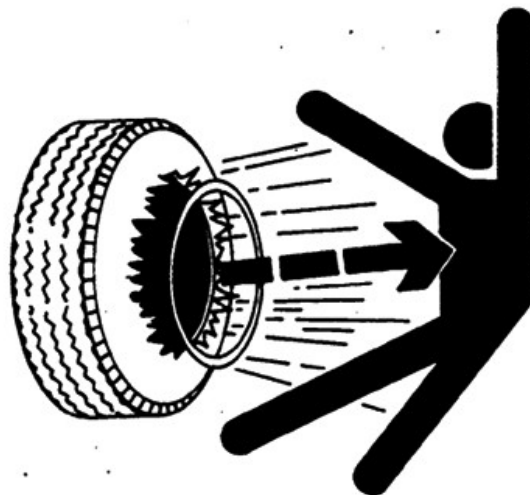
awqniwx,1718191805678-19-17JUL24



TG640340—UN—11JUL24

B—Tank Cap

Check Tires for Damage and Correct Inflation Pressure—Daily



APY64233—UN—05JUL21



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

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

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

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

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

awqniwx,1718096619724-19-11JUN24

Lubricate Suspension Assemblies

IMPORTANT: Use of other greases in the suspension system is not recommended. Use of other greases can result in the premature wear-off of the suspension components.

NOTE: There are three lubrication points on each suspension assembly.

Lubricate front and rear suspension assemblies with John Deere SD polyurea grease. See Fuels, Lubricants and Coolants section

awqniwx,1718096657235-19-11JUN24

Operating the Machine

Prevent Machine Runaway



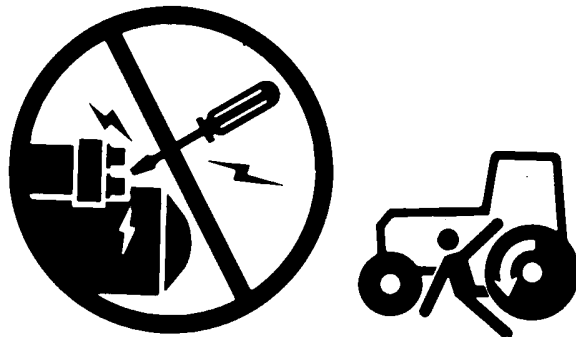
TS177—UN—11JAN89

CAUTION: Runaway machine can cause serious injury or death. Do NOT start engine by shorting across starter terminals. The machine starts in gear if the normal circuitry is bypassed. Never start engine while standing on ground. Start engine only from the operator's seat, with the multi-function lever in NEUTRAL.

KWPZAG2,0000ABF-19-06SEP21

Avoid the possibility of personal injury or death:

- Ensure that everyone is away from the machine.
- Start engine only from the operator's seat.
- Do NOT start engine by shorting across starter terminals. The machine could start in gear if the normal circuitry is bypassed.
- Engine starting with the lever out of the PARK position indicates a malfunction of the start circuit. See your John Deere dealer or other service provider for more information about engine repair.



TS177—UN—11JAN89

Battery Switch

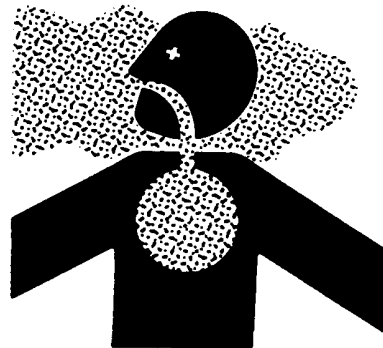


APY85198—UN—03AUG23

A—Battery Switch

Make sure the battery switch (A) is on before turning the engine key. When operation is complete and machine is stopped, make sure that the battery switch (A) is off.

KWPZAG2,0000AC0-19-23AUG23



TS220—UN—15APR13

Start Engine

CAUTION: Prevent asphyxiation. Engine exhaust fumes can cause sickness or death. While operating the engine in a building, make sure that there is an adequate ventilation. Use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.



TG598786—UN—20OCT23

A—Multi-Function Lever

Controls and switches must be in the position described before starting the engine.

1. Turn off switches, including radio (if equipped) and dome light.
2. Place multi-function lever (A) in PARK.

NOTE: Glow plug light does not light unless fuel temperature is below -5°C (23°F).

IMPORTANT: Do NOT operate the starter more than 30 seconds at the same time or starter could be damaged. If the engine does not start, wait at least 2 minutes before trying again. If the engine does not start in four attempts, see Diagnostics and Troubleshooting section in this manual.

To assure the adequate lubrication after engine starts, idle engine at approximately 1000 rpm with no load for 1 to 2 minutes. Extend this period when operating at temperatures below freezing.

At temperatures below freezing, the engine and hydraulic oil are warm. Turn steering wheel back and forth to circulate warm hydraulic oil until front wheels can be turned freely from lock to lock positions.

3. When starting the machine during cold temperatures: Turn the ignition key clockwise to engage the starter. Release key when the engine starts. If the key is released before engine starts, wait until the starter and engine stop turning before trying again.

NOTE: Once the engine is started, stop and caution indicator lights go off when the ignition key is released.



C—Engine Coolant Temperature

4. Monitor the engine coolant temperature (C) on the main page of Tera 10 display.

IMPORTANT: To avoid damage to turbocharger, do not accelerate above 1000 rpm until normal engine idle speed is established (900 rpm).

NOTE: If the engine stalls while operating under load, restart it immediately to prevent overheating and possible turbocharger damage.

AWQNIWX,1754893477245-19-18AUG25

Cold Weather Starting

CAUTION: Do NOT use ether or starting fluids to start engine with glow plugs. Ether is highly flammable and could ignite on engines with glow plugs.

IMPORTANT: Avoid starter damage. Do NOT operate the starter more than 30 seconds at the same time. If the engine does not start, wait at least 2 minutes before trying again.



TG648226—UN—20SEP24

A—Glow Plug Indicator

1. Turn off switches, including radio (if equipped) and dome light.
2. Place multi-function lever in PARK.
3. Put the throttle in the low idle position.
4. Turn key switch to RUN position.

NOTE: Glow plug indicator (A) light goes on if the fuel temperature is -5°C (23°F) or below (wait till engine starts, preheating is active).

5. When the glow plug indicator goes out, turn key switch to start position to engage the starter.
6. Release key when the engine starts.

awqniwx,1721810818318-19-20SEP24

Warming the Engine



APY85175—UN—28JUL23

A—Engine Coolant Temperature

IMPORTANT: To provide a proper lubrication after engine starts, operate the engine at approximately 900 rpm, with no load for 1 to 2 minutes. At temperatures below the freezing point, this period must be extended to 2 to 4 minutes. The engine and hydraulic oil are warm, turn steering wheel back and forth to circulate warm hydraulic oil until front wheels can be turned freely from lock to lock positions.

IMPORTANT: Do NOT place the engine under full load until it is properly warmed. View the engine coolant temperature (A) on the main page of Tera 10 display.

KWPZAG2,0000AC3-19-24JUL23

Starting the Machine

After warming the engine and executing previous recommendations, assure the boom is in transport position and disable moving parts. Then proceed as follows:

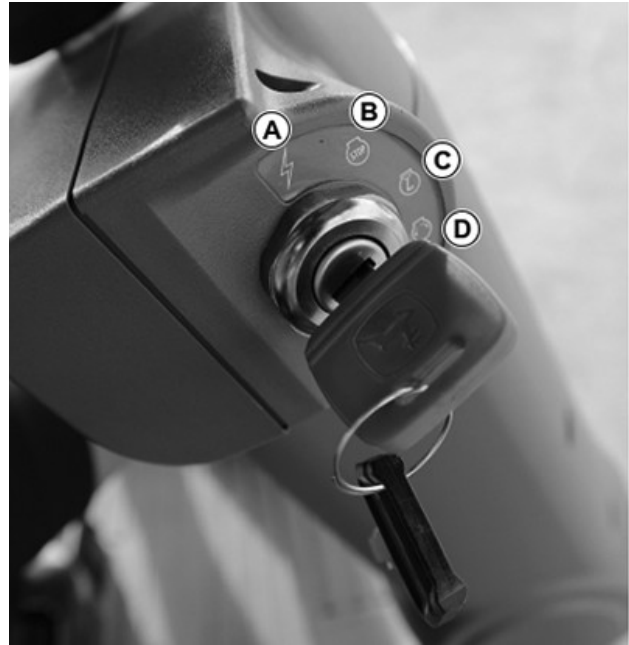
1. Fasten seat belts.
2. Raise the ladder into transport position.
3. Select the desired steering mode.
4. Enable the required speed (slow for field application and fast for road mode).
5. Set up engine rpm at 1300
6. Release park brake.
7. Gradually move the joystick forward in the travel direction, avoiding abrupt starts.

VK06011,00008CE-19-16FEB22

Stopping the Machine

Whenever possible, stop and park the machine in a flat and dry ground. Execute the following steps:

1. Stop the machine, bringing gently the joystick into the neutral position.
2. Lower the engine speed at the minimum rpm.
3. Wait for 1 minute.



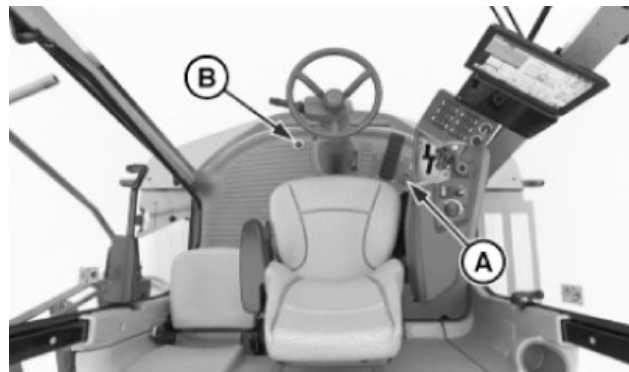
APY62094—UN—30JUN21

A—Accessories Position
B—OFF Position
C—Accessory/Run Position
D—Start Position

4. Turn off the key to position B (off) and remove the key.
5. Get off the machine and execute the procedure to lock the ladder.

VK06011,00008CF-19-16FEB22

4—Wheel Steering in Road Mode



TG659418—UN—03FEB25



TG654746—UN—09JAN25

- A—Differential Lock Switch**
B—2-Wheel/4-Wheel Steering Switch

To activate 4-wheel steering in road mode, simultaneously press the differential lock switch (A) and the 2-wheel/4-wheel steering switch (B).

Please note that the speed limit for four-wheel steering in road mode is 14 km/h. A warning will appear on the Tera 10 display as shown.

To deactivate 4-wheel steering, simply press the 2-wheel/4-wheel steering switch (B) again.

awqniwx,1736405972659-19-03FEB25

Parking the Machine (Brief Stops)

At the end of a working day/shift, park the machine in such way it does not create any hazard condition.

Take the precautions to avoid risk conditions for people approaching the machine when machine is not running.

1. Park the machine in a place it does not cause obstructions.
2. Close booms and place them into transport position.
3. Turn off the battery switch.
4. Remove the ignition key and lock the cab door.

For long stops, see Storage section in the manual.

VK06011,00008D0-19-16FEB22

Machine Transport Regulations (Italy)

CAUTION: When traveling by road, strictly follow the rules of the Road Code in force in the country in which you operate.

CAUTION: Check the flow rate of the tires in the registration certificate and in the specific Technical Annex before moving on the road with the clean water tank full.

As a general rule, refer to the "Approval provisions for circulation in Italy".

Approval Provisions For Circulation In Italy

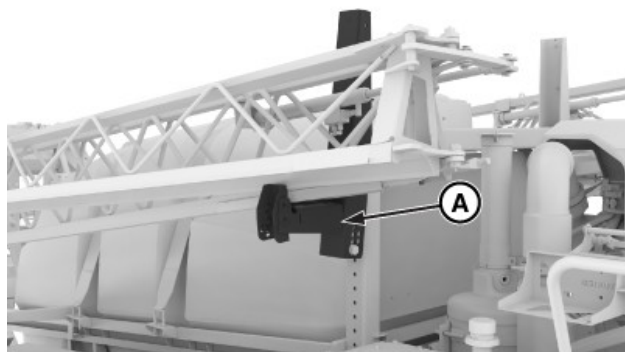
For road travel in Italy, refer to the specific "Technical Annex" relating to the Italian type-approval and to the Circulation Book, supplied with the documentation of the machine.

The Technical Annex contains the following information:

- 0—Machine identification data.
- 1—Technically permissible masses according to the intended types of tires (with an annotation of tires, which can only travel with empty tanks).
- 2—Requirements for road use (reported as a general rule also in this paragraph).

In any case, always follow the rules.

1. All machine and working component movements must be stopped and locked.
2. Mobile equipment must be placed in shape and locked.
3. Work lights turned off
4. Turn on the low beam, check that the marker lights are properly working and verify that the front headlights illuminate the ground in front of the machine no more than 10 meters (33 ft).



TG598979—UN—27OCT23



TG531187—UN—18FEB22

- A—Boom Support**
B—Belt

5. The booms must be folded and locked.
 - Make sure that the booms are properly positioned on the front of (A) support.

- Also check that the booms do not exceed the highest point of the 4 meters (13 ft) high.
- In case there are mounted booms with bellows joint or when on the sprayer booms are mounted the air sleeve, tie the tip of the booms with the special belt (B) supplied with the machine.

6. Gear engaged.



TG531188—UN—18FEB22

C—Selector

7. Steering allowed only on the front axle. Enable the two front steering wheels by positioning the selector (C) in position (2).



APY85190—UN—28JUL23

E—Rear Axle Lock Signal

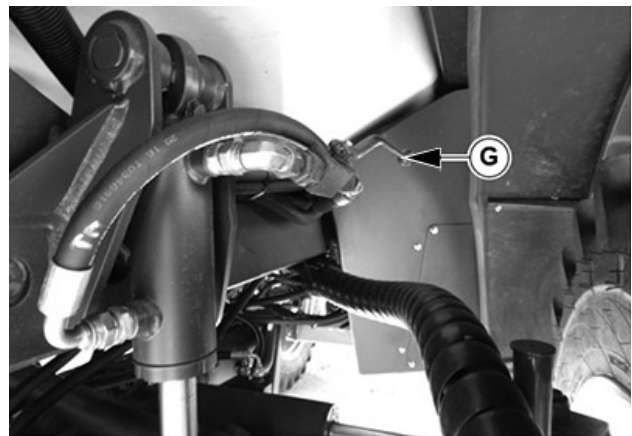
8. Rear axle locked (light [E] off).



TG531190—UN—18FEB22

F—Cylinder Lock

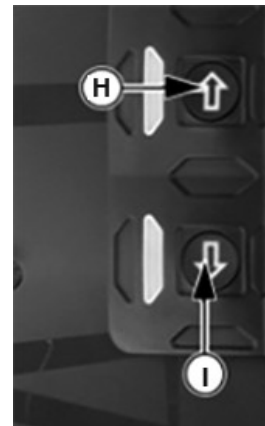
9. Lock the cylinder rods booms closing the (F) tap on the same cylinder.



TG531978—UN—18FEB22

G—Rear Suspension Tap

10. Close both (G) taps of rear suspensions (only for Italian road homologation).
11. The axle knees must be mechanically locked (ref. sec. "Adjusting the tracks").



TG531979—UN—18FEB22

H—Cabin Access Ladder Up Button

I—Cabin Access Ladder Down Button

12. Access ladder to the driver's seat, folded under the cabin (close it using the special selector [H]).



L—Joystick Function Disabled

13. The Multi function Lever and MSpray System requires the boom lock function to be active through the Gen5 universal display.

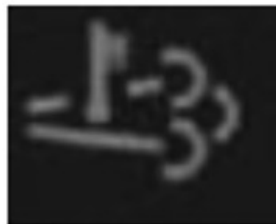


1—1—Road Drive On-Off

- The road drive lock for the booms on the Gen5 universal display is accessible in the MSpray subsection - Agitation, Work and Light Switch.
14. Always install and keep active an approved flashing light device.
15. Mount a removable rear panel 50x50 cm (20x20 in) with white and red stripes of retro reflective material.
16. In some circumstances it is permitted to drive on road mode with full water tank. Water must be always clean and not mixed with chemical products.
- Prior to drive on roads with full spray tank, check the Road Homologation technical annex for Italy. Verify the machine respects the homologation requirements
 - Confirm the tires specifications respect the load conditions for driving with full water tank.

awqniwx,1721905021267-19-24SEP24

Aftertreatment Indicators Overview



APY64483—UN—12AUG21
Engine Emissions
Temperature and
Malfunction Indicator



APY64484—UN—12AUG21
Exhaust Filter Indicator



APY64485—UN—12AUG21
Auto Cleaning Disabled
Indicator



APY64487—UN—12AUG21
Warning Indicator



APY64488—UN—12AUG21
Engine Stop Indicator

IMPORTANT: The operator is informed by the operator warning system when the emission control system does not function correctly and/or an engine malfunction is detected by the engine control unit. Ignoring the operator warning signals leads to an emission-related derate, which disables non-mobile operation of machinery.

- It is essential to take prompt action to rectify any incorrect operation. When using and during the maintenance of the emissions control system follow the measures indicated below:
- When the engine emissions temperature indicator illuminates, exhaust gas temperature is high, elevated idle is active, or exhaust filter cleaning is in process.
- The machine can be operated as normal unless the operator determines the machine is not in a safe location for high exhaust temperatures and disables auto cleaning.
- When the engine emissions temperature indicator is combined with the warning indicator or engine stop

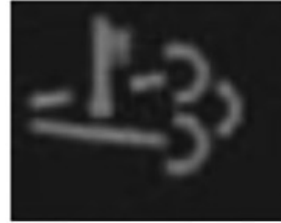
indicator, engine performance is reduced by the engine control unit (ECU) because the exhaust gas temperature is higher than expected. Follow diagnostic trouble code (DTC) procedure, or see your John Deere dealer or other service provider for more information about this.

- When the exhaust filter indicator illuminates, the exhaust filter cleaning is in process, after-treatment system has fault, or the exhaust filter is in need of cleaning and the operator has disabled auto exhaust filter cleaning. If conditions are safe, the operator should enable the auto exhaust filter clean setting or perform manual service regeneration or follow the DTC procedure.
- When the exhaust filter indicator is combined with the warning indicator, engine performance is reduced by the ECU because there is an aftertreatment system fault or the soot level of the exhaust filter is moderately high. If conditions are safe, the operator should enable the auto exhaust filter clean function. If conditions are not safe, the operator should move the machine to a safe location and engage the auto exhaust filter cleaning mode.
- Perform manual service regeneration or follow the DTC procedure.
- When the exhaust filter indicator is combined with the engine stop indicator, engine performance is further reduced by the ECU because there is an aftertreatment system fault or the soot level of the exhaust filter is high. If this combination is present, see your John Deere dealer or other service provider for more information about this.
- The auto cleaning disabled indicator illuminates when the operator has engaged the request to disable the auto exhaust filter cleaning function. This icon remains illuminated until the operator re-engages automatic exhaust filter cleaning from the diagnostic gauge.
- Disabling auto mode is not recommended unless it is required. To ensure safety or the amount of fuel in the tank is not sufficient to complete the cleaning process.
- The engine emissions system malfunction indicator illuminates when engine emissions are outside of normal operating range or when engine emissions system fault occurs. Follow the DTC procedure or see your John Deere dealer or other service provider for more information about this.
- When the engine emissions system malfunction indicator is combined with the warning indicator, engine performance is reduced by the ECU because the engine emissions are outside of normal operating range or when engine emissions system fault occurs. Follow the DTC procedure or see your John Deere dealer or other service provider for more information about this.

AWQNIWX,1754893614264-19-18AUG25

Machine Stop Required Warning

Machine Stop Mandate Occurs



APY64483—UN—12AUG21

IMPORTANT: In some situations, machine engine power could be reduced as described. On notification, immediately place the machine in safe state and or move it to a safe location. A mandated machine stop can only be removed by a service technician.

Engine emissions system malfunction indicator illuminates when emission-related fault occurs.



APY64487—UN—12AUG21

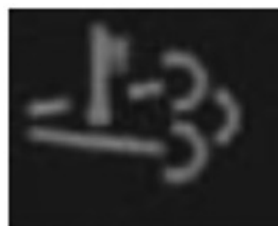
Warning indicator illuminates when a condition exists which requires an operator action.



APY64488—UN—12AUG21

Engine stop indicator illuminates when a condition exists which requires an immediate operator action and service.

Emission or emissions System Fault Occurs



APY64483—UN—12AUG21

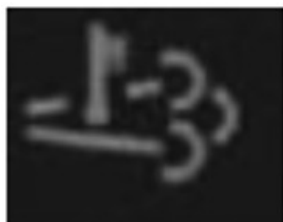


APY64487—UN—12AUG21

30 minutes remaining, engine emissions system malfunction, and warning indicators are illuminated and alarm sounds to warn the operator of emissions-related

fault. Less Than 30 Minutes to Power restriction is displayed on machines with display.

- Engine power is normal.
- Machine operation is normal.
- Place machine in a safe state.
- See your John Deere dealer or other service provider.



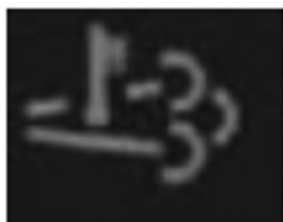
APY64483—UN—12AUG21



APY64488—UN—12AUG21

20 minutes remaining, engine emissions system malfunction, and engine stop indicators are illuminated and alarm sounds to warn the operator of an emissions-related fault. Less Than 20 Minutes to Power Restriction displayed on machines with displays.

- Engine power and torque are reduced.
- Key off/key on temporarily provides full power.
- Place machine in safe state.
- See your John Deere dealer or other service provider.



APY64483—UN—12AUG21



APY64488—UN—12AUG21

2 minutes or less remaining, engine emissions system malfunction and engine stop indicators are illuminated and alarm sounds to warn operator of the emissions-related fault, which has not been corrected. Power Restriction displayed on machines with displays.

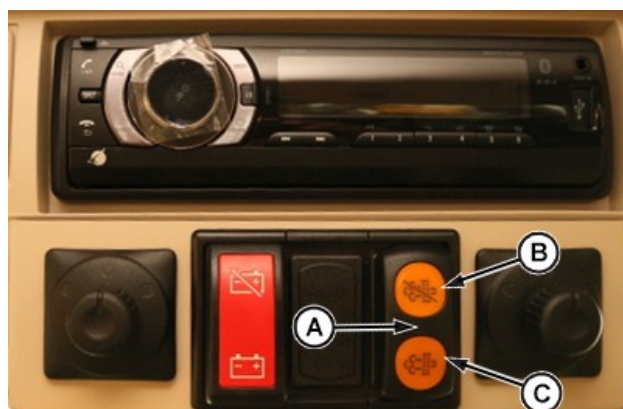
- Engine power is idle only.
- Place machine in safe state.
- See your John Deere dealer or other service provider.

AWQNIWX,1755517139577-19-18AUG25

operator interaction. Read this entire section to understand where and when operator interaction could be required.

Follow the instructions below to avoid unnecessary buildup of diesel particulates or soot in the exhaust filter system:

- Avoid unnecessary idling.
- Operate the engine at a higher rpm.
- Use proper engine oil (see Fuels, Lubricants and Coolants section for recommendations).
- Use only ultra low sulfur fuel (see Fuels, Lubricants and Coolants section for recommendations).
- Inhibit (disable) exhaust filter cleaning only when necessary.



APY85200—UN—03AUG23

- A—Selector
- B—Button-Risky Condition
- C—Button-Safe Operational Condition

The cleaning mode for the exhaust filter is controlled through the selector (A) in the cab upper panel.

The regeneration system operates in automatic mode when the following conditions are met:

- Engine rpm $\geq$ 1200 rpm
- Water temperature = 60°C

If there is any risky condition by the time the machine warns the regeneration signal, the button-risky condition (B) must be selected.

If the button-risky condition (C) has been selected, the machine will send a regeneration needed signal when the relevant condition occurs.

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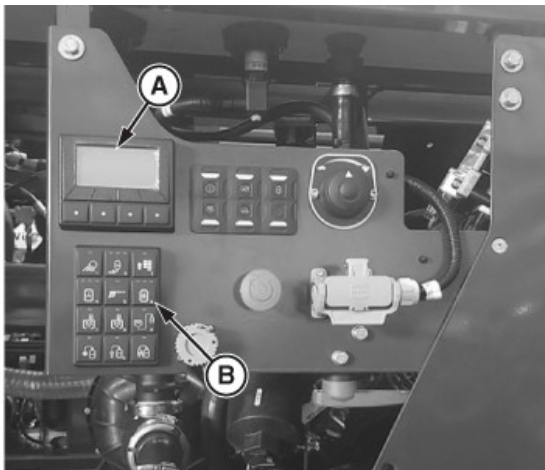
Exhaust Filter System (Final Tier 4 and Stage V Engines)

The machine is equipped with an emission-compliant engine that cleans and filters the exhaust. Under normal operation, this system is automatic and requires no

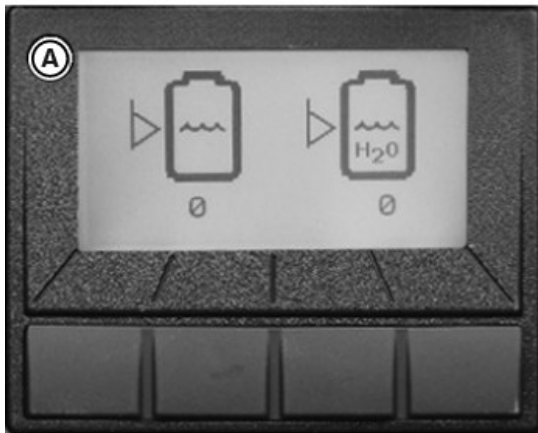
MSpray Solution Command System Panel

CAUTION: Wash brush button (G) requires the system rinse program to be run from the rinse menu first before use. The wash brush is connected to the solution line, which has to be flushed.

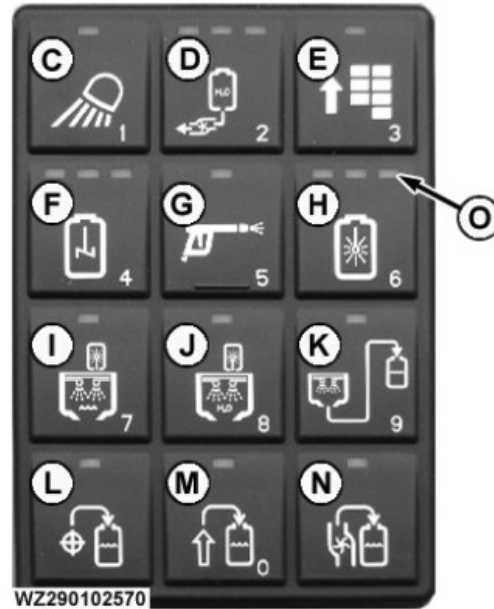
NOTE: Return all buttons in the panel to the OFF position (indicated with an **LED indicator**) after use. A warning message **remote load active** appears on the Gen5 universal display showing solution command system panel is not in the OFF position.



TG598841—UN—23OCT23



APY64244—UN—09JUL21



APY64245—UN—09JUL21

- A—Solution Command Micro panel Display
- B—Keypad
- C—Operator Station Light Button
- D—Select Rinse Water Tank Button
- E—Menu Button - Menu Selections
- F—Agitation Button
- G—Wash Brush Button
- H—System Rinse Button
- I—Eductor Rinse Button - Activate Flushing Nozzles
- J—Eductor Rinse Button and Filling Active Pause Button
- K—Eductor Venturi Button
- L—Auto Fill Button
- M—External Pump Filling Button
- N—Select Filling Pump Button
- O—LED Indicators

- Solution command micro panel display (A)—shows the following two options in liters:
 - Solution tank content (left)
 - Rinse water tank content (right)
- Keypad (B)—shows the following functions:
 - Operator station light button (C)
 - Eductor venturi button (K)
 - External pump filling button (M)

NOTE: If necessary, use the buttons (C), (K), and (M) to enter values 0—9 on display.

- Operator station light button (C) (option)—Switches the operator light on/off.
- Select the rinse water tank button (D)—It is used to select the rinse water tank as water source. If not selected the solution water of the solution tank is used.
- Menu button (E)—The menu gives selections for solution system tank transfer and filling the solution tank from the rinse water tank.
- Agitation button (F)—Switches agitation on-off. Agitation volume is set from the display in the cab.

- Wash brush button (G)—Switches the wash brush on-off (if equipped).
- System rinse button (H)—System rinse performs one rinse cycle at the volume setting that is set on the display in the cab. The rinse system program steps through the solution system for a complete rinse. The operator has to spray out the residual liquid at the end of the program. The program can be canceled or stepped forward on the micro display buttons. Set boom rinse on the display in the cab for the use of the rinse button function.
- Eductor rinse button (I)—Turn on the flushing nozzles and use the solution pump to draw water from the solution tank.
- Eductor rinse button & filling active pause button (J)—Water from the filling connection is used to turn on the flushing nozzles via the filling pump. The filling operation is stopped by an active pause, and the water from the filling connection is used to flush the eductor flushing nozzles. All the time, you need to add crop protection with clean water.
- Eductor venturi button (K)—Eductor venturi button is used to transfer eductor contents to the solution tank.
- Auto fill button (L)—Enter required volume via numeric on the keypad and confirm volume. Auto Fill is for both external filling and filling with the filling pump. The symbol on the right shows the target valve entered on the previous screen. The symbol on the right shows the current solution tank content. The content counts as the sprayer is filled, press the cancel button to stop the filling process at any time.

- External pump filling button (M)—There is an additional connection available to fill the water from the external pump filling button, and after the button is pushed, the external pump can load the tank. The external filling is available up to 4 bars.
- Filling pump button (N)—The sprayer filling pump has a manual on/off switch.
- LED indicators (O) is located at the top of the buttons.



APY64246—UN—09JUL21

A—LED Indicator

B—LED Indicator

- LED indicators (A and B) at the top of the buttons, display the status of the function which is controlled by that button. If the LED is ON(illuminated) it indicates that the function is currently working (ON), if the LED is OFF(not illuminated) it indicates that the function is not in operation (OFF).

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Solution Tank



TG641925—UN—26JUL24



TG641931—UN—26JUL24

A—Solution Tank
B—Tank Cover

The machine is fitted with a polyethylene solution tank (A). The nominal tank volume of 3200 liters for the MAF 32, 4000 L for the MAF 40. Allow for foaming when filling the tank, do not fill the tank above the nominal value.

The tank is mounted on the frame and is fully enclosed

C—Ladder

in supporting brackets at the sides and front. The solution tank cover is accessible via the ladder (C) placed on the left side of the machine.

IMPORTANT: Always raise and lock the ladder for safety and to avoid damage when driving with the sprayer.

NOTE: While the maximum tank volume could vary due to the production process (special molding procedure), the nominal volume + 5% is always maintained.

Filling and Opening of Tank

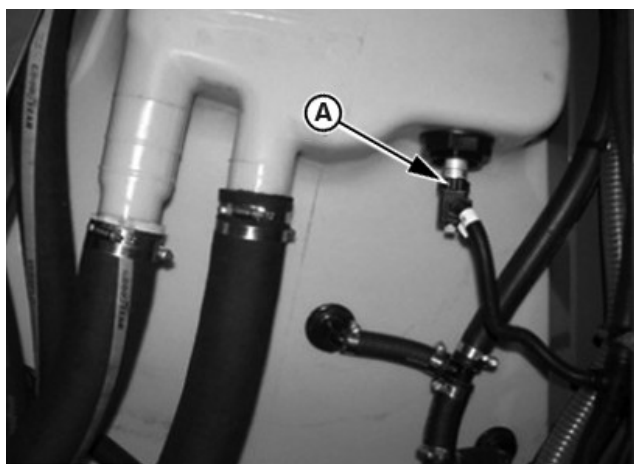
CAUTION: Do NOT enter the tank for cleaning or repair.

The raised filling opening has a diameter of 40 cm and has a hinged tank lid with a vent and a basket strainer. To open the hinged tank cover (B), turn it in the direction of the open arrow and then pull it up. To close the cover, press it down and then turn in the direction of the close arrow.

NOTE: There is a dedicated safety valve on the tank cover. The valve enables the bleeding of air and prevents the accidental leakage of liquid (due to fluctuations) by opening and closing the inlet when overfilling occurs.

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Tank Level Indicator



APY64250—UN—09JUL21

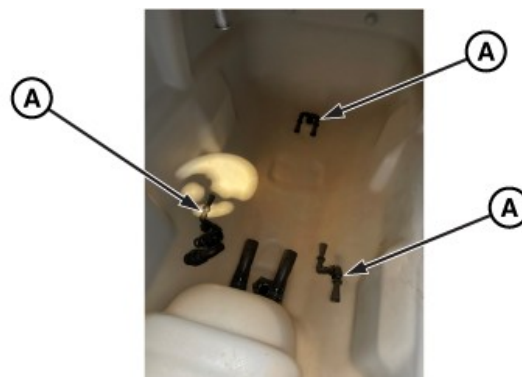
A—Tank Pressure Sensor

IMPORTANT: The tank pressure sensor (A) is a sensitive electronic component. Do NOT strike tank pressure sensor. Do NOT clean tank pressure sensor with high-pressure water or it could get damaged.

A tank pressure sensor (A) fitted in the bottom of the tank makes it possible to read the actual tank volume accurately in the Gen5 universal display.

awqniwx,1720679025405-19-11JUL24

Agitation



TG598836—UN—23OCT23

A—Triple, Double, and Single Agitation Nozzle

Effective agitation is important for a uniform spray distribution, particularly for suspensions and emulsions. Inadequate agitation can result in crop damage, inadequate effect of the chemical and blockage of the machine.

Agitation flow is tapped from the pump outlet. There is no primary pressure regulator. The pump ensures high volume of flow through the large nozzles to provide a powerful tank agitation. Also the operator can add Return Agitation to the solution tank return line to provide agitation at low spray pressures via the spreader in the tank.

Return Agitation is an additional agitation feature for the MSpray system. Two hoses enter the tank at the top and have the outlet close to the bottom of the tank floor. Return Agitation has twice the capacity of the normal agitation system and is at the floor off the side wings of the solution tank. The intended use of this feature is to keep a heavy solution liquid mixed and suspended at low spraying pressure. The feature can also be used with the normal agitation while chemicals are loaded into the sprayer.

It results in powerful agitation, assuming that the liquid level is above the nozzles. The nozzles increase the agitation capacity in relation to the liquid used by 2 to 5 times, depending on the pressure set.

If the solution tank becomes empty and the liquid level drops under the nozzles, the nozzles can be automatically deactivated so that the tank can be sprayed empty and foaming is limited. The performance of the agitation can be controlled via the **Agit** (agitation control) tab in **Job Settings**.

NOTE: The Return Agitation is an extra agitation function on the MSpray machines. The function uses extra pressure from the solution system. When using high spray rates, reduce the amount of agitation in the Return Agitation function to maintain the spray rate first when required. Reduce normal agitation intensity as a second option to maintain the high spray rate.

NOTE: Power agitation button in job settings—Agitation tab sets both agitation functions to 100%.

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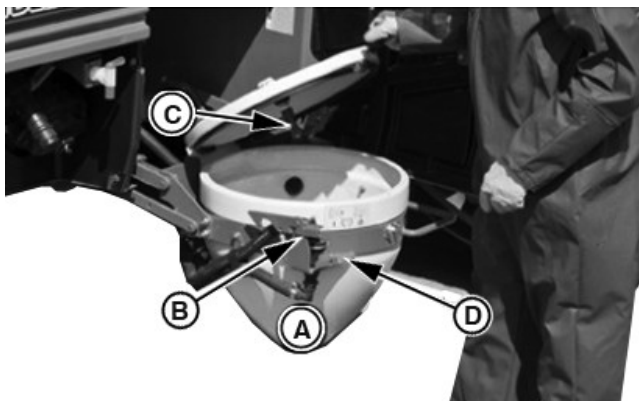
Chemical Inductor

CAUTION: Keep fill opening closed while the inductor is in use to avoid splashing as liquid enters the solution tank.

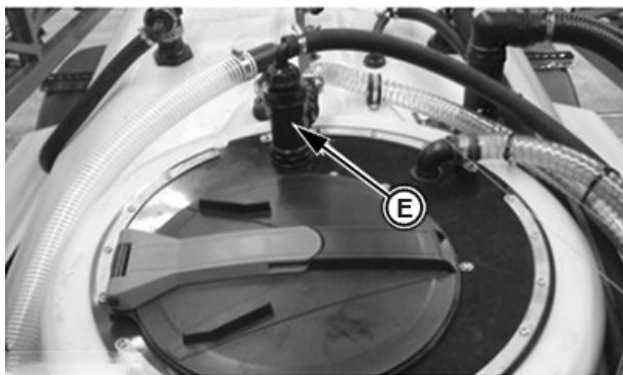
IMPORTANT: Clean and rinse the chemical inductor after every use.



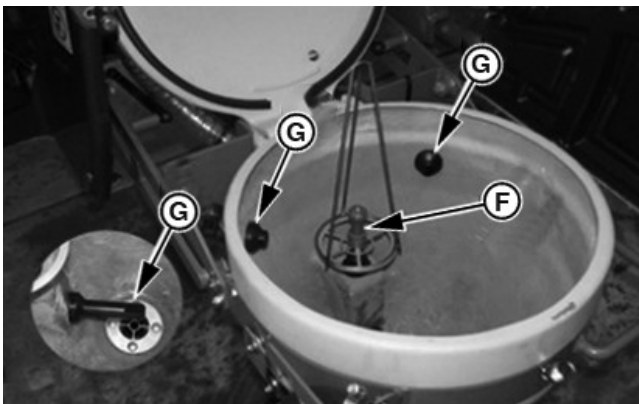
APY64255—UN—09JUL21



APY64252—UN—09JUL21



APY64253—UN—09JUL21



APY64254—UN—09JUL21

- A—Chemical Inductor with Lid
- B—Locking Device
- C—Inductor Rotating Rinse Nozzle (shutoff valve on the lid)
- D—Flushing Nozzle Shutoff Valve (closed position)
- E—Injector (venturi)
- F—Rinsing Head with Tenter Frame (if equipped)
- G—Flushing and Bridging Nozzle
- K—Inductor Solution Water Button
- L—Inductor Rinse Water Button
- M—Injector Button

This system can be operated from the ground and can be used for both liquid and powdered (solid) chemicals. The chemical inductor hopper is located in the center of the left side of the machine.

The inductor hopper is set to the working position by pushing the inductor slightly forward and unlocking the transport device by pressing down the locking device (B) while simultaneously pulling out the inductor hopper. The inductor hopper must be folded back into its transport position before commencing spraying work in order to avoid crop damage and damage to the inductor.

The chemical inductor with lid (A) comprises an inductor hopper and a lid with a capacity of approximately 50 liters. The hopper contains flushing and bridging nozzles (G), rotating head (F) of rinsing container with tenter frame. The tenter frame (optional available) is used for rinsing flexible containers such as bags and sacks and a sieve plate for preparing solutions from powdered (solid) chemicals. The injector (venturi) (E) allows the content of the hopper to enter the solution tank. Three buttons on the SCS panel are dedicated for the Inductor use:

1. Select inductor solution water button (K). Add chemicals to the machine.
2. Select the inductor rinse water button (L).
3. When switched on, injector (venturi) (E), transfers the contents of the chemical inductor to the solution tank.

Adding Chemicals to the Inductor

Push the inductor solution water button (K) to set solution tank as the source to add chemicals into the chemical inductor. Let the solution water go through the flushing and bridging nozzles (G) into the chemical inductor; open the flushing nozzle shutoff valve (closed position) (D). The crop protection dilutes in water to form

solution. Push the injector button (M) to transfer the inductor contents to solution tank.

The flushing and bridging nozzles (G) also rinse clean the chemical inductor walls.

Flush the Inductor

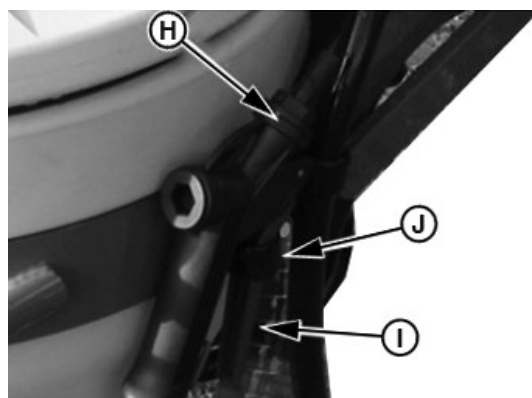
To flush inductor nozzles, set the inductor rinse water button (L). Open flushing nozzle shutoff valve (closed position) (D) in order to let water into the inductor via the flushing and bridging nozzles (G). The flushing and bridging nozzles (G) rinse the inductor walls. Close the inductor lid and open the shutoff valve (on inductor lid) for the inductor rotating rinse nozzle (shutoff valve on the lid) (C) to completely rinse the inductor. Close all shutoff valves when finished.

IMPORTANT: Operate only with the closed inductor lid and close all manual shutoff valves for flushing nozzles when finished.

The injector (venturi) (E) is fitted in the filling opening of the solution tank. The injector sucks up the dissolved chemicals from the inductor hopper and conveys them into the tank via the basket strainer.

A level indicator for the inductor is available as an option. When powders are used frequently, a stainless steel basket strainer with an additional rinse head available which prevents the sedimentation.

Spray Gun (If Equipped)



APY64258—UN—09JUL21

H—Spray Gun

I—Handle

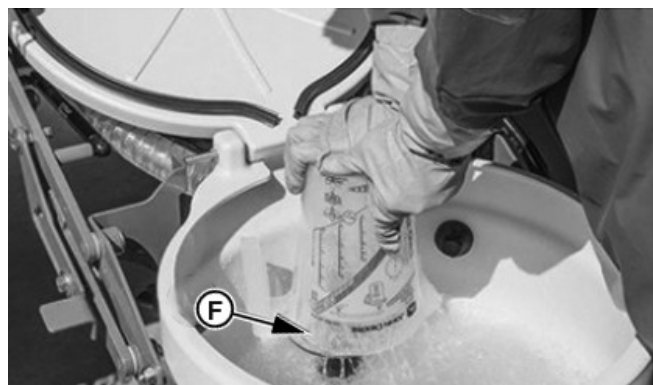
J—Mounting Bracket (hook)

- The spray gun (H) is used for rinsing the interior of the chemical inductor.
- Operate the spray gun when the chemical inductor is active with the rinse water tank source.
- To operate the spray gun, remove from the mounting bracket (hook) (J) and squeeze the handle (I).

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APY64255—UN—09JUL21



APY64257—UN—09JUL21

F—Eductor Container Rinsing Head

K—Eductor Solution Water Button

L—Eductor Rinse Water Button

NOTE: Rinse the container with clean water only.

1. To clean the container, select the eductor rinse water button (L) on the SCS panel.
2. Place the opening face down over the eductor container rinsing head (F) and push down until clean water flows.
3. Place the tenter over the rinsing head to clean the bag.
4. Place the bag over the optional tenter and ensure that rinsing head is enclosed.
5. Press enter down to rinse the bag. Rotate the container or bag while rinsing.
6. Rinse for at least 30 seconds.

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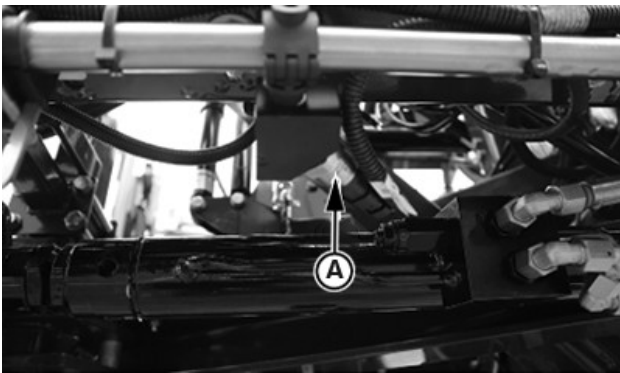
M—Injector Button

- A—Digital Pressure Sensor
B—Flow Sensor

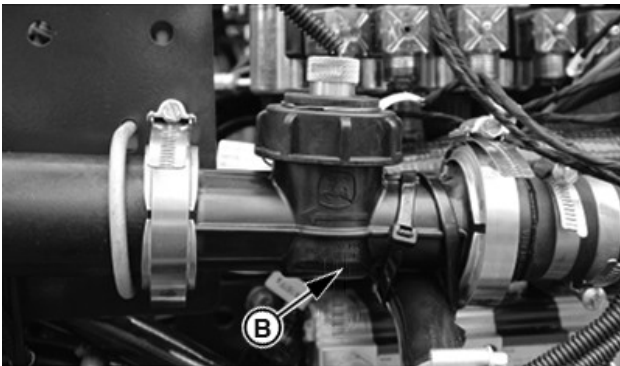
The spraying pressure is shown on the display in the cab. The machine has been fitted with a digital pressure sensor (A) and a flow sensor (B), both mounted to the rear center of the spray boom center frame. The spray rate control (SRC) unit uses these inputs to monitor and control the system to maintain the target application rate.

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Pressure and Flow Measurement

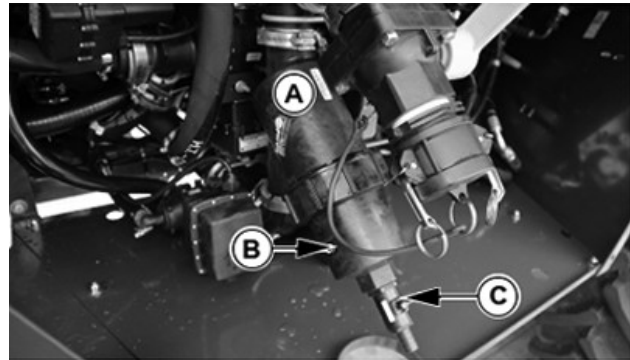


APY64259—UN—09JUL21



APY64260—UN—09JUL21

Pressure Filter



APY64261—UN—09JUL21

- A—Pressure Filter
B—Filter Cup
C—Drain

The pressure filter (A) is important to prevent blockages while spraying. It provides the last central filtering before the liquid is sprayed out through the nozzles.

Filter Screen Size	
Filter Size [Mesh] (the number of openings in 1 square inch of a filter screen)	Suitable for:
50 (~280 µm) Fitted as Standard on a Non-INC machine	Flat Fan Nozzles of the 02 Type (or comparable sizes) and Larger
80 (~180 µm) Fitted as Standard on an INC Machine	Fan Nozzles Smaller than Type 02 Flat Fan Nozzles (or comparable sizes)
	Individual Nozzle Control (INC) Nozzles

IMPORTANT: Clean the pressure filter daily.

NOTE: Regular cleaning and draining the filter with the drain valve prevents silting up, which could damage the filter.

The filter must be flushed and cleaned regularly after each use (see also the safety and rinsing guidelines from the chemical manufacturer). It can be done simply by unscrewing the filter cup (B) and removing the filter element out of the cup.

A drain valve or a self-cleaning pressure filter is available as an option.

IMPORTANT: To avoid spillage of chemicals while cleaning the filters, turn off the solution pump and do a power cycle. The power cycle ensures that the valves are set to the correct position.

NOTE: Refer to the recommendations on the chemical product label used for cleaning to ensure operator safety.

KWPZAG2,0000B21-19-06SEP21

Hand Washing Tank

⚠ CAUTION: Do NOT drink water from this tank, it is intended for washing only.

Fill the tank with clean water from the main water supply.



A—Hand Washing Tank
B—Cap (filling and opening)

There is a separate 15-liters hand washing tank (A) with drain tap (C) on the left-hand side of the machine for personal hygiene and hand washing.

Fill only with clean water from the main water supply through the cap (filling and opening) (B).

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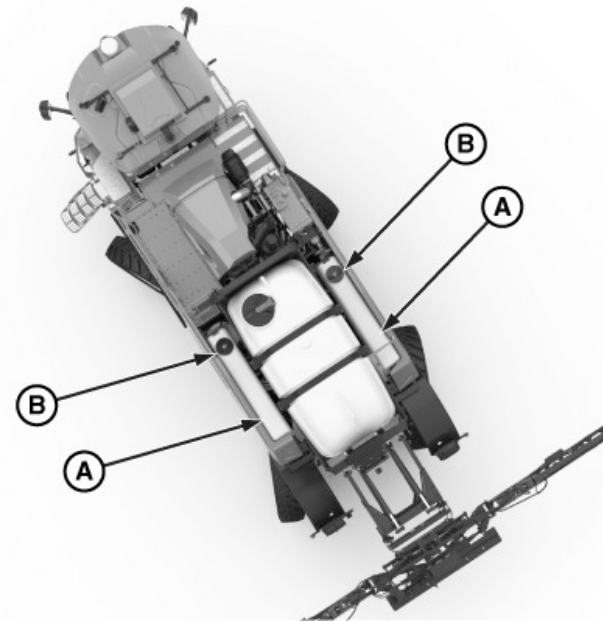
C—Drain Tap

Rinse Water Tank

IMPORTANT: The rinse water tank must always be filled with clean water.

IMPORTANT: The rinse tank opening/cover is not intended for filling it is only used for maintenance and function as breather

TG640342—UN—12JUL24



TG640343—UN—12JUL24

- A—Rinse Water Tank (260 or 520 liters)
- B—Rinse Tank Cover
- C—MSpray Solution Command Panel Position
- D—Rinse Water Tank Valve

Rinse the water tank (260 or 520 liters) (A) is located behind the upper panels. It provides supply of clean rinse water for infield cleaning. The rinse water tank valve (D) (located under the MSpray panel) must be opened during centrifugal pump operation so that the rinse tank will be filled.

If the rinse water tank valve (D) is in longitudinal position then it is open and if the rinse water tank valve (D) is in perpendicular position then it is closed.

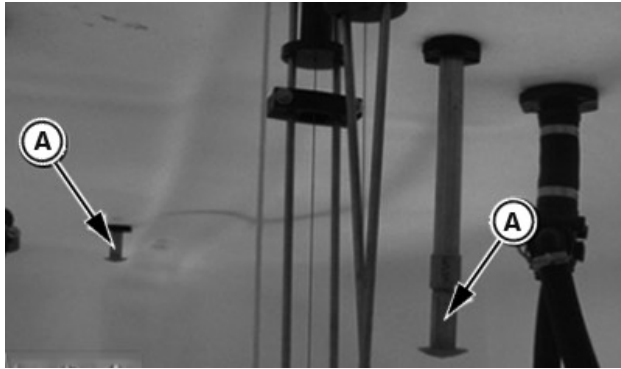
The rinse water tank must always be filled from the main water supply to avoid the contamination.



TG641932—UN—26JUL24

Machine Model	Rinse Water Tank Capacity
MAF 32	230 L
MAF 40	460 L

Solution Tank Rinsing Nozzles

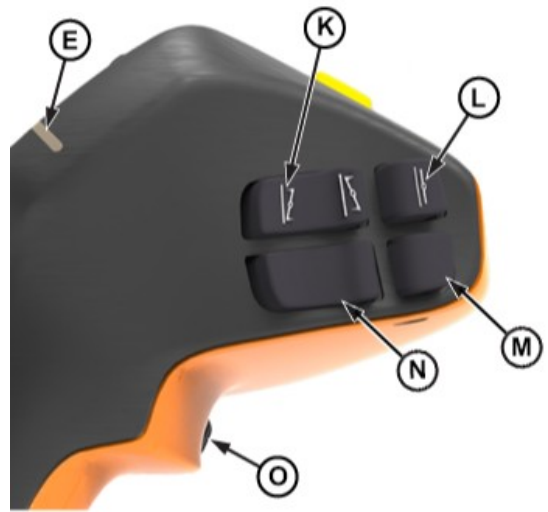


APY64264—UN—09JUL21

A—Tank Rinsing Nozzle

Three tank rinsing nozzles (A) have been fitted in the tank at two levels to clean the inside of the solution tank. It allows rinsing of the inside of the tank with clean water (from the rinse tank).

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TG640776—UN—12JUL24

Electrical Operation Group

The electrical operation group comprises a pressure regulator, main shutoff valve, boom section or nozzle body valves, multi-function lever with Gen5 display, and also several electric valves as part of the solution command system. The solution spray pump is controlled by the hydraulic system to ensure the required spray flow and agitation.

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MSpray Multi-Function Lever



WZ556891—UN—09DEC22

Button	Button Function Level-1	Button Function Level-2 ^a
A	All Sections Resume (IBS)	
B	Boom Section Indexing (IBS) Left/Right	Pendulum Lock On/Off
C	Quick Stop	Quick Stop
D	Right-Hand Variable Geometry (VG) Raise/Lower	Right-Hand Outer Boom Fold/Unfold
E	LED Indicator: • Off - Master Valve Off (not spraying) • On - Master Valve On (spraying)	LED Indicator: • Blinking: Level 2 Function Selected
F	Spray Master Valve On/Off	
G	Not Used	
H	AutoTrac™ Resume Button	
I	Left-Hand Variable Geometry (VG) Raise/Lower	Left-Hand Outer Boom Fold/Unfold
J	Spray Boom Raise/Lower	Pendulum Lock On/Off
K	Boom Roll Left/Right	
L	Boom Roll Centering	
M	Not Used	
N	Not Used	
O	Select Level-2	Select Level-1

AutoTrac is a trademark of Deere & Company

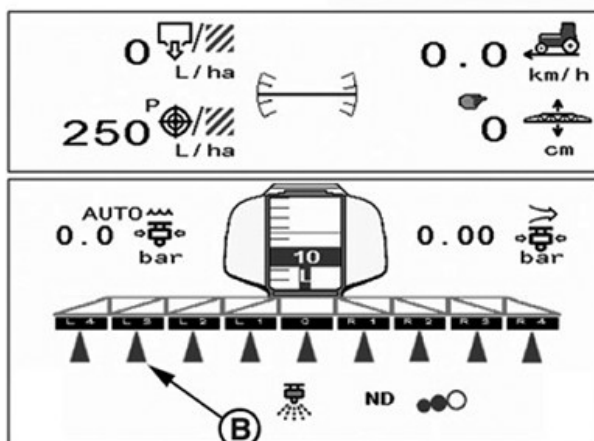
^aThe level-2 functions are described in this column. No description, then button function is not available.

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Spray System Master On—Off Switch



WZ556892—UN—09DEC22



APY65287—UN—29JUL21

- A—Spray Master Button (on/off)
- B—Boom Sections Spraying (blue cone)
- C—LED Indicator Spray Master

Push the spray master button (on/off) (A) to turn enabled boom sections ON; the LED indicator spray master (C) goes on. Push again to turn OFF; the LED indicator spray master (C) goes off.

Boom sections spraying (blue cone) (B) below the active section (dark background with lighter text) indicates that the section is spraying when the master valve is switched ON.

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Agitation, Working Lights, and F-Switch

For further information, see Operating the Machine section of this manual.

KWPZAG2,0000B29-19-06SEP21

Control Group



WZ556892—UN—09DEC22

A—Spray Master Button (on/off)
C—LED Indicator Spray Master

The control group comprises the pressure/flow controller:

- An electrically operated master/circulation valve
- A pressure sensor
- A pressure filter mounted on the left front side of the machine

Rate Controller

The rate controller controls the required spraying pressure and maintains the flow at a constant level. The rate control unit controls the solution pump via the hydraulic flow regulator.

Electrical Master/Circulation Valve

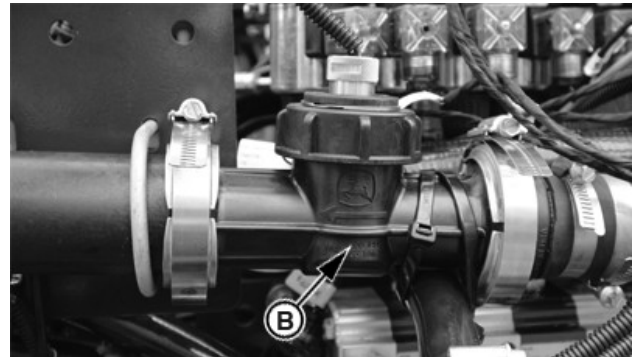
The multi-function control (MFC) in the cab controls the operation of the master/circulation valve. The Master/Circulation Valve is an electrically operated ball valve.

When the spray master button (A) on the **MFC** is activated, the LED is illuminated. The liquid is pumped at the required pressure via the pressure line filter to the boom section valves. When the spray master button on the **MFC** is deactivated, the LED is not illuminated. The liquid is circulated at the preset recirculation pressure and flows back to the tank.

Digital Pressure and Flow Measurement



APY64270—UN—09JUL21



APY64271—UN—09JUL21

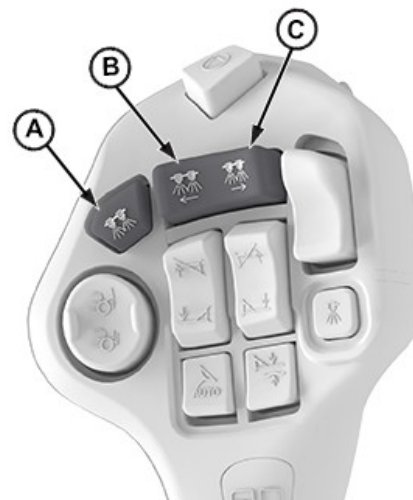
A—Digital Pressure Sensor
B—Flow Sensor

The spraying pressure is indicated digitally on the Gen4 display. For that purpose, the machine is fitted with a digital pressure sensor (A) which is mounted to the boom center at the rear of the machine.

The flow sensor (B) is also mounted on the boom center section.

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Operating IBS (Index Boom Sections)



WZ556893—UN—09DEC22

- A—Button IBS All Sections On
B—Button IBS Left-Hand
C—Button IBS Right-Hand

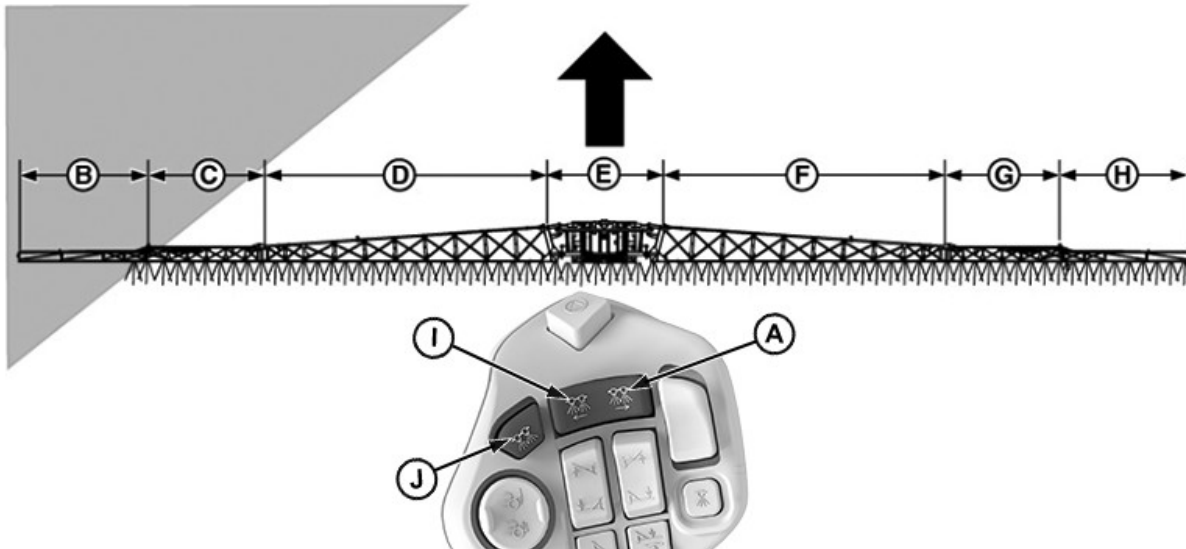
Fluid is transported to the left and right spray boom segments from the pressure filter using boom section valves. Between 4 and 15 sections can be operated, depending on the version.

The MFC can control up to 15 boom sections (L7- L6- L5-L4-L3-L2-L1-C-R1-R2-R3-R4-R5-R6-R7). The

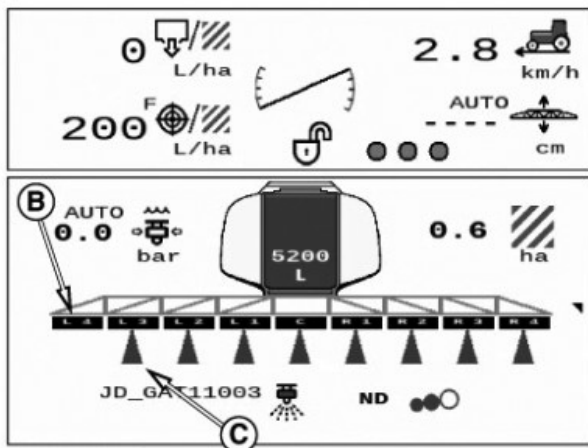
sections are shut on-off by electrically operated two-way valves integrated on the spray boom.

This machine is equipped with indexed boom section switching. This function enables the operator to shut off boom sections in sequence without removing hands from the MFC. This function is useful when working with point rows and close to water.

This function is operated by three buttons.



WZ556895—UN—09DEC22



APY64274—UN—09JUL21

- A—IBS Right-Hand Button
B—Left-Hand Breakaway Boom Section (L4 on display)
C—Left-Hand Boom Section (L3 on display)
D—Left-Hand Boom Section (L1-L2 on display)
E—Center Boom Section (C on Display)
F—Right-Hand Boom Section (R1-R2 on display)
G—Right-Hand Boom Section (R3 on display)
H—Right-Hand Breakaway Boom Section (R4 on display)
I—IBS Left-Hand Button
J—IBS All Sections On Button

EXAMPLE: If an angled boundary is being approached and sections are to be shut off in the sequence from left to right:

1. Push and release IBS right-hand button (A) once to shut off left-hand breakaway boom section (L4 on display) (B).

IMPORTANT: Continue to push and release IBS right-hand button (A) to shut off remaining sections across the entire boom.

2. Push and button IBS right-hand button (A) again to shut off left-hand boom section (L3 on display) (C).

IMPORTANT: All sections can be turned back on at once using IBS all sections on button (J).

3. Push and release IBS left-hand button (I) to turn on the left-hand boom section (C) (L3 on display) that has been shut off.
4. Push and release IBS left-hand button (I) to turn on left-hand breakaway boom section (L4 on display) (B).

Sections can be shut off from the right-to-left using the opposite buttons, first the IBS left-hand button (I) to shut off and the IBS left-hand button (I) to turn on again.

NOTE: The edge nozzles or off-center nozzles switch together with the outer section.

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Pressure Circulation System

The pressure circulation system is automatically available when the solution pump is running. While spraying, the pressure circulation is not available as both ends of the spray sections are being fed at the same time (the circulation valve allows spray solution to enter from the circulation side of the spray section).

The liquid is circulated past the nozzle through the spray lines pipe-work without spraying from the nozzles. A spring in the nozzle body holds nozzle closed until pneumatic pressure is delivered from the air valve manifold to open it for spraying.

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Filling Pump Pressure Filter



APY64275—UN—09JUL21

A—Filling Pump Pressure Filter
B—Drain Tap

Filters are used to help keep dirt and debris from entering and damaging the solution pump, nozzles, and other components. The filter elements need to be removed cleaned to maintain the optimum solution flow. To avoid spillage of chemicals while cleaning the filters, turn the solution pump and agitation off, and do a power cycle on the tractor. This procedure ensures that the electrical valves are set to the correct position. Drain off the liquid from the filter housing with the drain tap (B) use a bucket or container for the liquid. Unscrew the filter housing to remove the filter element.

KWPZAG2,0000B2D-19-06SEP21

Solution Tank Pump Off Connection

IMPORTANT: The maximum pump off pressure for the connection is set to 3 bar.

To pump contents of the solution tank for external storage, follow the procedure:



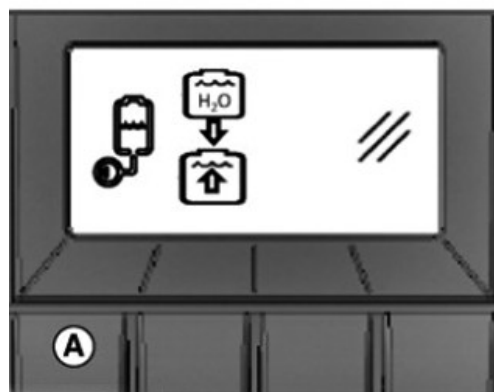
APY64276—UN—09JUL21

B—Shutoff Valve
C—Hose Connection Cap

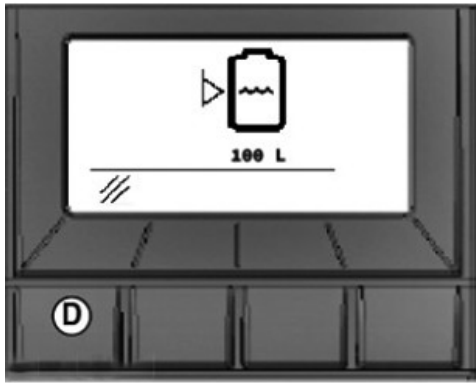
1. Ensure that the solution pump is off.
2. Remove hose connection cap (C).
3. Connect pump off hose.
4. Open shutoff valve (B). Pull lever down so it is in parallel connection.



APY64277—UN—09JUL21



APY64278—UN—09JUL21



APY64279—UN—09JUL21

- A—Tank Pump Off Button
C—Menu Button
D—Cancel Button

5. Push the menu button (C) on the keypad.

NOTE: The next page on the display shows the solution tank volume.

6. Push the tank pump off button (A) on the keypad. The electric valves are set to the required position, and the pump starts.
7. When the process has been completed, push the cancel button (D) on the keypad to stop the Pump Off.
8. Close the shutoff valve.
9. Remove the Pump Off hose, and rinse the hose and connector.
10. Reinstall the cap on the hose connection.

KWPZAG2,0000B2E-19-06SEP21

command system panel keyboard to start/stop the solution pump (C).

KWPZAG2,0000B2F-19-06SEP21

Solution Pump Recommendations

To ensure the longevity of the solution pump, follow these recommendations:

IMPORTANT: Chemicals and chemical residue left in the solution pump for an extended period can be damaging to pump components. Rinse pump interior with clean rinse water daily and do not let chemical solution remain in the pump overnight.

If it is necessary to retain chemical solution in the tank while rinsing the rest of the system, refer the Operator's Manual.

To rinse entire system including the solution tank, refer the Operator's Manual.

IMPORTANT: Do NOT engage centrifugal pump dry.

Operating the pump dry significantly reduces pump life.

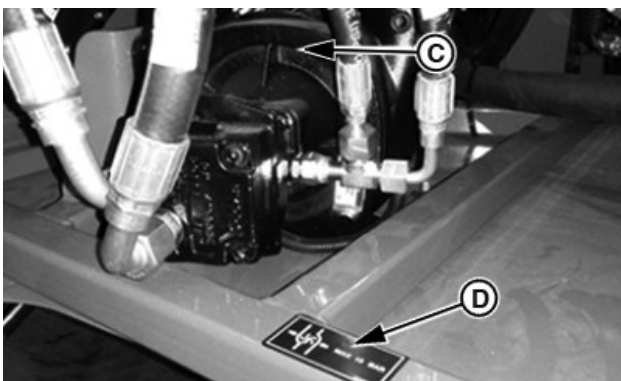
Winterize the pump properly.

Proper winterization of the solution system can increase solution the pump life.

See Storage section in this manual to clean, winterize, and store the machine for extended periods.

KWPZAG2,0000B30-19-06SEP21

Solution Pump



APY64280—UN—09JUL21

- C—Solution Pump
D—Maximum Operating Pressure

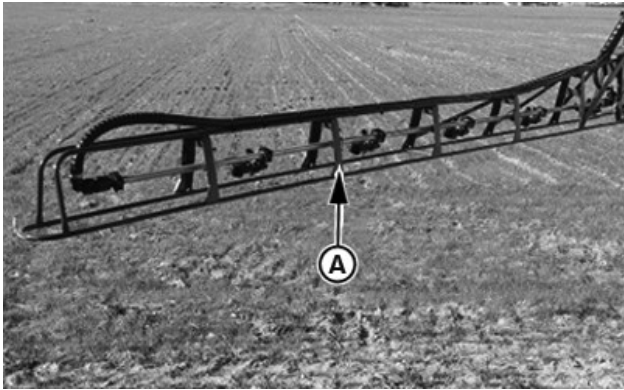
IMPORTANT: The solution system maximum operating pressure (D) is 10 bar.

Press the relevant function button on the solution

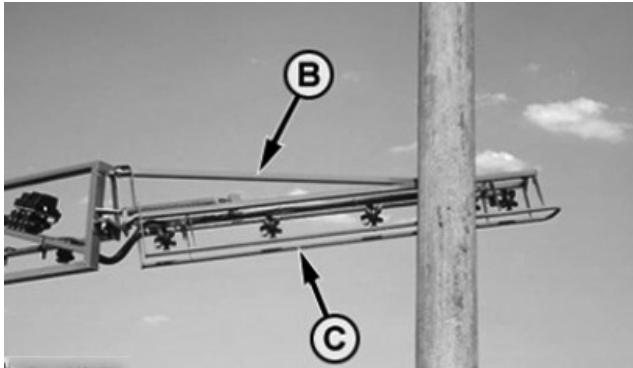
Boom Unfolding and Folding

CAUTION: Pay attention when unfolding or folding the 24 m or 28 m booms with independent opening configured with air sleeve system. Before unfolding the left or right arm completely, it is mandatory to slightly open the first and second arms.

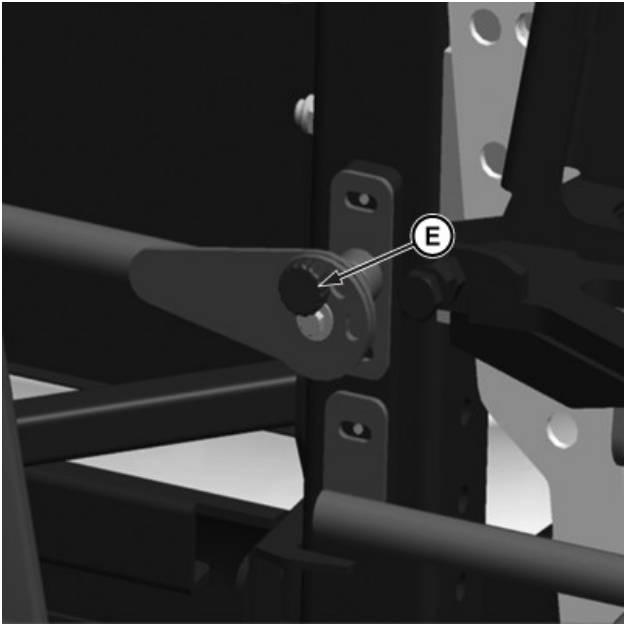
CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or near power lines.



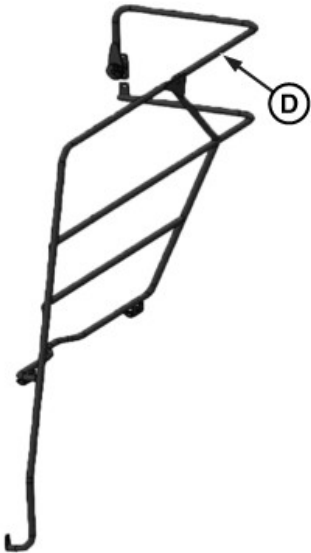
APY64281—UN—09JUL21



APY64282—UN—09JUL21



TG600697—UN—12NOV23



TG600696—UN—12NOV23



TG600698—UN—12NOV23



TG600699—UN—12NOV23

- A—Spray Boom
- B—Outer Spray Boom Section
- C—Protective Bracket for Nozzles
- D—Hand Rail in Close Position
- E—Knob
- F—Hand Rail Opening
- G—Hand Rail in Open Position

Two ranges of hydraulically operated spray booms (A) are offered:

- Double-folding booms: 24—30 m.
- Triple-folding booms: 24—36 m.

The functions are electro-hydraulically operated by means of the multi-function lever (MFC).

In the transport position, the spray booms are divided into two or three segments on each side of the machine.

The spray boom comprises rigid, self-bearing, and mutually hinging segments, connected to one another. These segments contain a total of 4 to 15 spray line sections, depending on the version.

The outer spray boom sections (B) are (partly) protected against obstacles. Upon contact with an obstacle, the segment in question deflects (backwards, forwards, or upwards) and can return to its original position once the obstacle has been passed. The spray lines and nozzle bodies are also protected along the whole boom width in order to avoid damage to the nozzles as they move forward during spraying.

Hand Rail Opening and Closing Procedure

IMPORTANT: Before unfold/folding the boom it is necessary to open the Hand Rail as shown (G) to avoid the damages to the boom.

1. Loosen the knob (E) located behind the engine cover.
2. Move the hand rail up as shown in (F).

3. Tighten the knob (E) once the handrail is in open position.
4. After the hand rail is completely lifted the final position should be as shown in (G).
5. To close the hand rail loosen the knob (E) and lower the hand rail.
6. Once it is lowered completely tighten the Knob (E). The closed position is shown in (D).

The machine can be offered with different booms combination. Every combination drives a different unfolding and folding sequence.

- PowrSpray multi-function lever: Can be configured with different booms (double-folding or triple-folding).
 - a. Outer arms: Independent
 - b. Inner arms: Simultaneous

If the machine falls into category 2 (as aforementioned), open the boom as indicated below:

1. Machine is on and operator is seated.
2. Activate the hand brake.
3. The hand rail in open position as shown (G).
4. Set the engine at 1900 rpm.
5. Lift up the parallelogram to the maximum height.
6. Make sure that the transport function is locked.
7. Open the outer arms for simultaneous boom opening, followed by inner arms; or, open left outer and inner arms followed by right outer and inner arms for independent opening.
8. Adjust the desired spraying boom height.
9. Utilize the variable geometry to align the booms with the ground level.
10. Lock the transport function before field spraying.

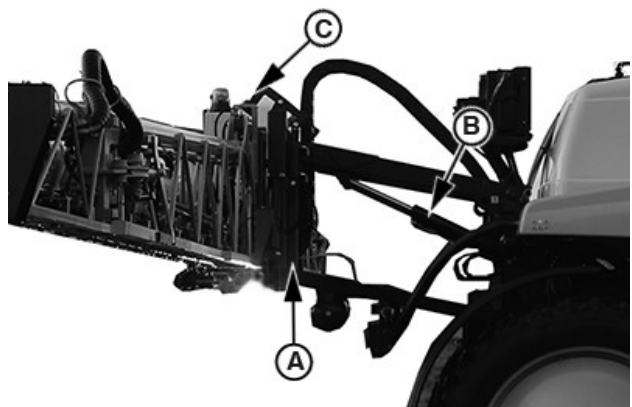
Closing the Booms

Basic steps to close the booms are:

1. The hand rail needs to be in open position as shown (G).
2. Lift up the parallelogram to the highest position.
3. Lift up the variable geometry on the left side, then on the right side.
4. Activate the pendulum transport lock function.
5. Close left and right booms, starting from outer arms.
6. Move down the parallelogram, assuring the booms are locked on the proper support.

Different combinations drive different unfolding/folding sequence.

Height Adjustment



TG528443—UN—11JAN22

- A—Parallelogram Linkage
- B—Hydraulic Cylinder (2 used)
- C—Transport Lock

Spray boom height can be adjusted with the use of parallelogram linkage (A) with hydraulic cylinders (B). Cylinders ensure height adjustment range of approximately 2 m. The hydraulic cylinders must regularly be completely slid in.

When the spray boom is raised with the boom folded in, the transport lock (C) and the mechanical locks of the outer spray boom segments are released. The spray boom can be folded out in the highest position.

When the boom is folded out, the parallelogram linkage (height adjustment) can be lowered to the desired spraying height. If the spray boom is folded in at the highest position, the transport hooks are pushed forward again. The spray boom can be lowered and the parallelogram linkage (height adjustment) is locked by the transport hooks. Also the outer boom segments are locked if the folded boom is lowered.

Folding and Unfolding with Double-Folding Booms

CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or near power lines.

IMPORTANT: Never drive with the unfolded spray boom and the pendulum system locked, since serious damage could be caused to the spray boom and suspension.

IMPORTANT: To avoid damage to the locking mechanism and the machine, always raise the boom to its highest position before folding or unfolding.

IMPORTANT: Unfolding and folding the boom must be done with the spray boom in its highest position, or else the boom and the vehicle could get damaged.

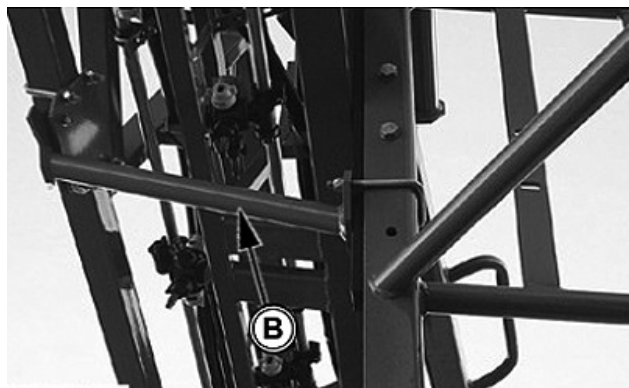
IMPORTANT: Before folding in booms, the boom roll correction should have no bias set; the boom should be level to the vehicle.

IMPORTANT: Only the outer sections of this boom should be unfolded or folded individually.

IMPORTANT: Prior to driving the machine, make sure that the boom is open. Driving with boom partially open could result in structural damages not covered in warranty.



APY64284—UN—09JUL21



APY64285—UN—09JUL21

- A—Connecting Rod
- B—Boom Locking Device (for outer boom segments)

The spray boom is folded and unfolded hydraulically by means of two double-acting cylinders for each spray boom arm. Both spray boom arms are folded and unfolded simultaneously. A connecting rod (A) between both spray boom arms (left and right) ensures simultaneous folding, also when the sprayer is folded/unfolded on hills. The folding and unfolding speed is set with restrictors mounted on the cylinders.

NOTE: After the boom is folded in and lowered to the transport position, a boom lock device ensures that the outer boom segments are secured during road transport. For sprayers not equipped with drop hoses, the boom locking device (for outer boom segments) (B) mechanism consists of a fixed support bracket underneath the boom.

Folding and Unfolding with Triple-Folding Boom

CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or near power lines.

IMPORTANT: Never drive with the unfolded spray boom and the pendulum system locked, since serious damage may be caused to the spray boom and suspension.

IMPORTANT: To avoid damage to locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.



APY65288—UN—29JUL21



A—Connecting Rod
C—Boom Locking Device (for outer boom segments)

The spray boom is folded and unfolded hydraulically by means of three double-acting cylinders for each spray boom arm. The first and second spray boom arms are folded and unfolded simultaneously.

A connecting rod (A) between both spray boom inner arms (left and right) ensures simultaneous folding and unfolding, also when the sprayer is folded/unfolded on hills. The outer spray boom arms can be folded independently from each other. The folding and unfolding speed is set with restrictors mounted on the cylinders.

NOTE: After the boom is folded in and lowered to the transport position, a boom locking device (for outer boom segments) (C) ensures that the inner and outer boom segments are secured during road transport.

Boom Unfolding/Folding

CAUTION: Never fold or unfold the spray boom when driving, near obstacles, or near power lines.



TG598835—UN—23OCT23

A—Control Valve Block

The folding and unfolding of the boom is operated by the multi-function lever (MFC).

The electrohydraulic control valve block (A) is fitted on the rear of the parallelogram height adjustment, underneath a protective cover.

The hydraulic hoses for the electrohydraulic control must be connected to a single or double-acting selective control valve and a pressure-free return line.

The appropriate control valve must be activated constantly to supply the electrohydraulic control valve block with oil.

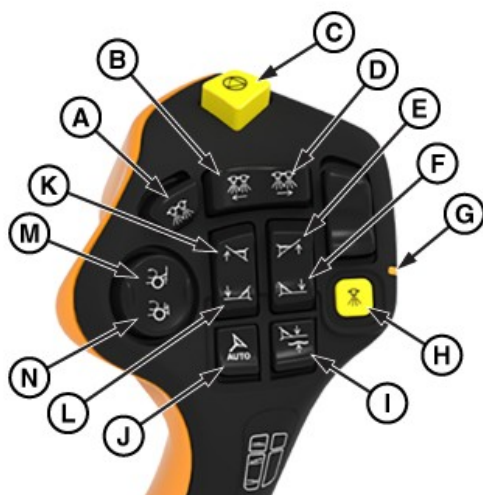
IMPORTANT: Unfolding and folding the boom must be done with the spray boom in its highest position, or else the boom and the vehicle will get damaged.

IMPORTANT: Before folding in booms, the boom roll correction should have no bias set; the boom should be level to the vehicle. See Operating the Machine section.

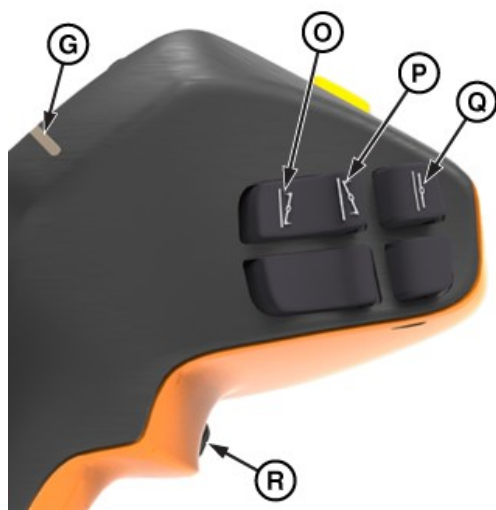
IMPORTANT: Only the outer sections of this boom should be unfolded or folded individually.

Boom Unfolding/Folding (MK Boom)

CAUTION: Never unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.



TG609202—UN—15JAN24



TG609203—UN—15JAN24

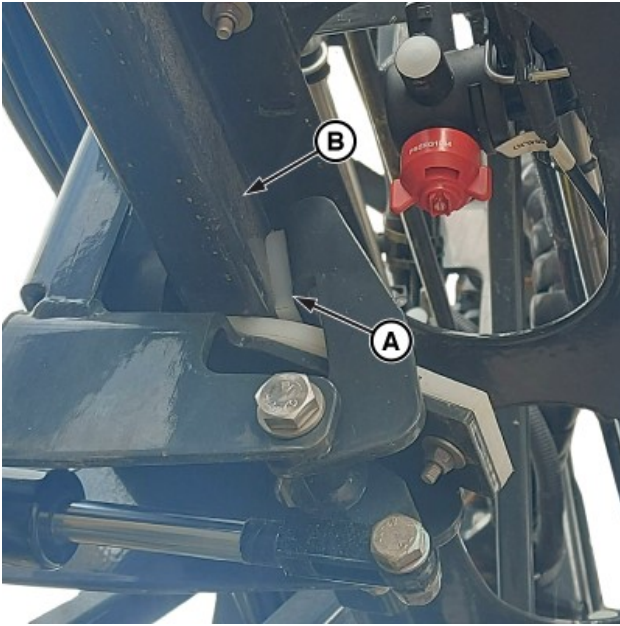
- A—All Sections Resume (IBS)
- B—Boom Section Indexing (IBS) Left (Level 1) / Pendulum Lock ON (Level 2)
- C—Quick Stop
- D—Boom Section Indexing (IBS) Right (Level 1) / Pendulum Lock OFF
- E—Right-hand Variable Geomatrix (VG) Raise (Level 1) / Right-hand Outer Boom Fold (Level 2)
- F—Right-hand Variable Geomatrix (VG) Lower (Level 1) / Right-hand Outer Boom Unfold (Level 2)
- G—LED Indicator
- H—Spray Master Valve ON/OFF
- I—John Deere Terrain Command Control/Command™ Pro ON/OFF
- J—AutoTrac Resume Button
- K—Left-hand Variable Geomatrix (VG) Raise (Level 1) / Left-hand Outer Boom Fold (Level 2)
- L—Left-hand Variable Geomatrix (VG) Lower (Level 1) / Left-hand Outer Boom Unfold (Level 2)
- M—Spray Boom Raise (Level 1) / Inner Boom Fold (Level 2)
- N—Spray Boom Lower (Level 1) / Inner Boom Unfold (level 2)
- O—Boom Roll Right
- P—Boom Roll Left
- Q—Boom Roll Centre
- R—Select Level 2 / Level 1

Boom Unfolding

1. Raise spray boom parallelogram lifter all the way up with button (M) in boom function 1 (F1).
2. Press button (R) to shift from boom function 1 (F1) to boom function 2 (F2).
3. Press button (N) to unfold the left and right booms inner arms (1st and 2nd) in boom function 2 (F2).
4. Press buttons (L) and (F) to unfold the left and right booms outer (tips) in boom function 2 (F2).
5. Unlock the pendulum by using button (D) in boom function 2 (F2).
6. Turn ON the NORAC system with button (I) to perform boom operations.

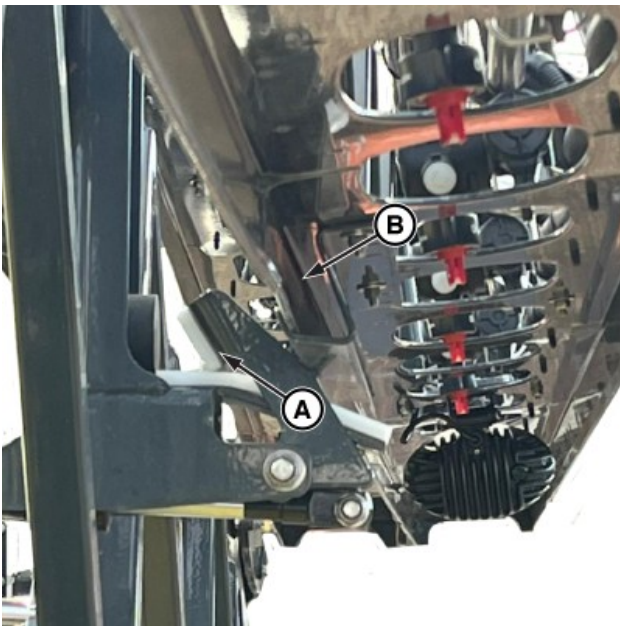
Boom Folding

1. Raise spray boom parallelogram lifter all the way up with button (M) in boom function 1 (F1).
2. Press button (R) to shift from boom function level 1 (F1) to boom function 2 (F2).
3. Press button (Q) to center boom roll.
4. Lock the pendulum with button (B) in boom function 2 (F2).
5. Simultaneously press button (K) and (E) to fold the outer booms in boom function 2 (F2).
6. Press button (M) to fold inner boom arms (1st and 2nd) in boom function 2 (F2).
7. When the boom approaches close to the machine lateral covers and the folding stops, press the (R) button to switch to boom function 1 (F1).
8. Raise left and right VG all the way up with buttons (K) and (E) in boom function 1 (F1).
9. Press button (R) to again shift from boom function level 1 (F1) to boom function 2 (F2).
10. Fold inner boom arms (1st and 2nd) with button (M) in boom function 2 (F2).
11. Press and hold button (M) in boom function 2 (F2) for at least 3 seconds. Ensure that the safety boom locks are in the proper position.



TG681400—UN—06AUG25

Boom lock is engaged correctly



TG681401—UN—06AUG25

Boom lock is not engaged correctly

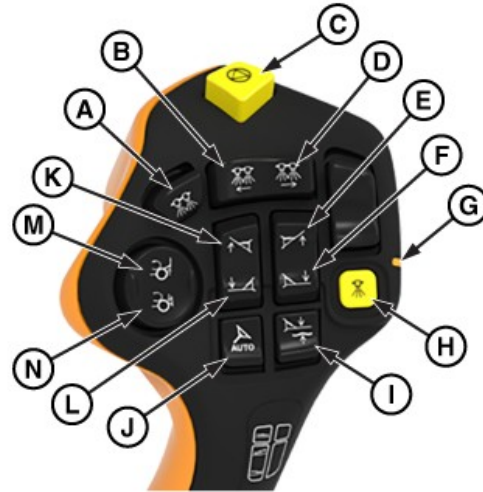
A—Boom Lock
B—Boom

CAUTION: Never drive the machine with the safety boom lock disengaged.

12. Press button (R) to again shift from boom function level 2 (F2) to boom function 1 (F1).
13. Lower spray boom parallelogram with button (N) in boom function 1 (F1).
14. Press buttons (L) and (F) to lower down the VG in boom function 1 (F1).

Boom Unfolding/Folding (Ti-M Boom)

CAUTION: Never unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.



TG609202—UN—15JAN24



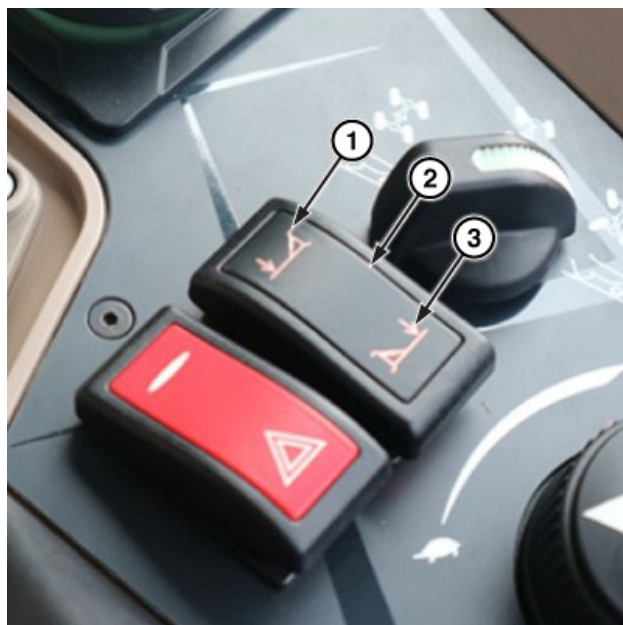
TG609203—UN—15JAN24

- A—All Sections Resume (IBS)
- B—Boom Section Indexing (IBS) Left (Level 1) / Pendulum Lock ON (Level 2)
- C—Quick Stop
- D—Boom Section Indexing (IBS) Right (Level 1) / Pendulum Lock OFF
- E—Right-hand Variable Geometry (VG) Raise (Level 1) / Right-hand Outer Boom Fold (Level 2)
- F—Right-hand Variable Geometry (VG) Lower (Level 1) / Right-hand Outer Boom Unfold (Level 2)
- G—LED Indicator
- H—Spray Master Valve ON/OFF
- I—John Deere Terrain Command Control/Command™ Pro ON/OFF
- J—AutoTrac Resume Button
- K—Left-hand Variable Geometry (VG) Raise (Level 1) / Left-hand Outer Boom Fold (Level 2)
- L—Left-hand Variable Geometry (VG) Lower (Level 1) / Left-hand Outer Boom Unfold (Level 2)
- M—Spray Boom Raise (Level 1) / Inner Boom Fold (Level 2)
- N—Spray Boom Lower (Level 1) / Inner Boom Unfold (Level 2)
- O—Quick Stop
- P—Right-hand Variable Geometry (VG) Raise (Level 1) / Right-hand Outer Boom Fold (Level 2)
- Q—Right-hand Variable Geometry (VG) Lower (Level 1) / Right-hand Outer Boom Unfold (Level 2)
- R—Shift from boom function level 2 (F2) to boom function 1 (F1)

O—Air Sleeve Angle - Increase Inclination to Vertical Position
P—Air Sleeve Angle - Reduce Inclination to Vertical Position
Q—Boom Roll Centre
R—Select Level 2 / Level 1

IMPORTANT: To avoid possible damages to the air sleeve, the complete boom folding procedure of the boom (simultaneously or right/left independent) should start always with inner and outer boom sections completely unfolded. Starting the inner boom folding with the outer boom already folded or partially folded could snag and tear the tarpaulin.

Boom Unfolding



TG640738—UN—12JUL24

Position 1—Left Arm Opening
Position 2—Concurrent Opening and Closing Mode
Position 3—Right Arm Opening

1. Select one of the positions from the command arm switch, positions (1, 2, and 3) to unfold the left or right or simultaneous booms outer tips (according the option selected).
2. Raise spray boom parallelogram lifter all the way up with button (M) in boom function 1 (F1).
3. Press button (R) to shift from boom function 1 (F1) to boom function 2 (F2).

4. Press button (N) to unfold the inner booms selected - according to the option selected on the step 1 (left, right or simultaneous opening).
5. Press buttons (L) and (F) to unfold the left and right booms outer (tips) in boom function 2 (F2).
6. Unlock the pendulum by using button (D) in boom function 2 (F2).
7. Turn ON the NORAC system with button (I) to perform boom operations.

Boom Folding

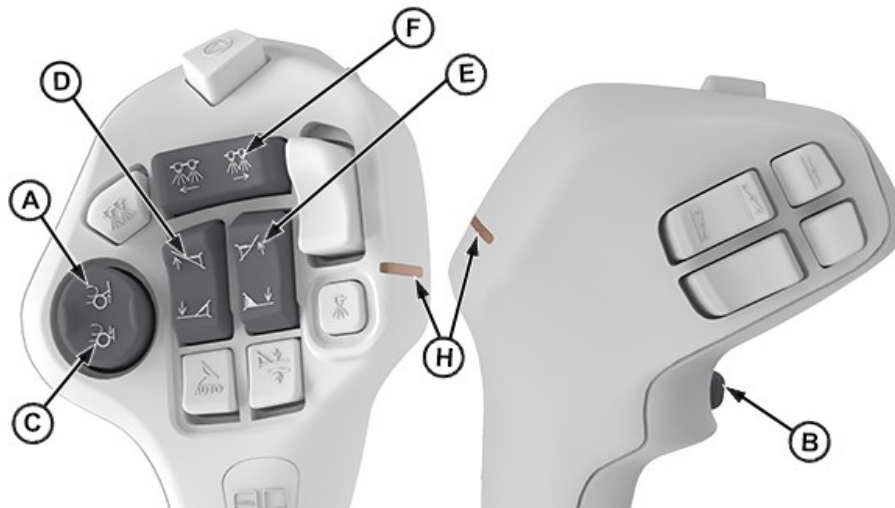
1. Raise spray boom parallelogram lifter all the way up with button (M) in boom function 1 (F1).
2. Raise left and right VG all the way up with buttons (K) and (E) in boom function 1 (F1).
3. Press button (R) to shift from boom function level 1 (F1) to boom function 2 (F2).
4. Press button (Q) to centre boom roll (simulation).
5. Lock the pendulum with button (B) in boom function 2 (F2).
6. Simultaneously press button (K), (E) and (M) to fold the outer booms and inner boom in boom function 2 (F2).
7. Press button (R) to again shift from boom function level 2 (F2) to boom function 1 (F1).
8. Lower spray boom parallelogram with button (N) in boom function 1 (F1).
9. Press buttons (L) and (F) to lower down the VG in boom function 1 (F1).

Unfold Booms Completely

CAUTION: Never unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.

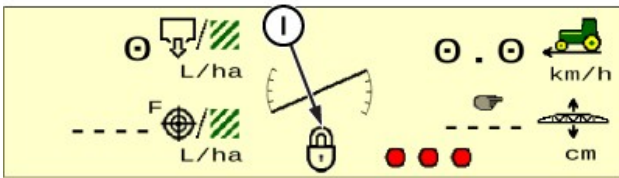
IMPORTANT: Unfolding the boom must be done with the spray boom in its highest position. Damage to the boom and the vehicle results when this is not carried out.

IMPORTANT: Only the outer sections of this boom should be unfolded.

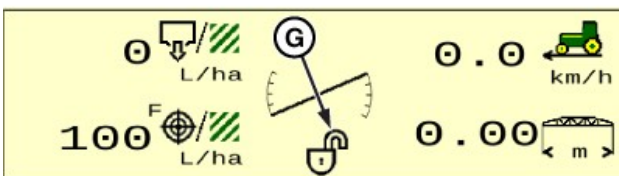


WZ556894—UN—09DEC22

- A—Boom Up (level-1)/Unfold Inner Boom (level-2) Button
- B—Level-1/Level-2 Button
- C—Boom Down Button
- D—VG Left-Hand Boom/Unfold Outer Left-Hand Boom (level-2) Button
- E—VG Right-Hand Boom/Unfold Outer Right-Hand Boom (level-2) Button
- F—Pendulum Lock (level-2) Button
- G—Pendulum - Unlocked
- H—LED Indicator Level-2
- I—Pendulum - Locked



TG597428—UN—13OCT23



TG597429—UN—13OCT23

1. Push the boom up (level-1)/unfold inner boom (level-2) button (A), and raise the boom to the highest position.
2. If the pendulum is not locked:
 - a. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED indicator level-2 (H) starts flashing.
 - b. Push the left part of the pendulum lock (level-2) button (F) until the pendulum is locked. The pendulum - locked (I) display shows that the pendulum is locked.

3. To unfold the boom:

- a. While level-2 is active, push the boom down button (C) until the inner booms are fully unfolded.

NOTE: Next two steps can be executed simultaneously.

- b. Push the VG right-hand boom/unfold outer right-hand boom (level-2) button (E) until the right-hand outer boom is fully unfolded.
- c. Push the VG left-hand boom/unfold outer left-hand boom (level-2) button (D) until the left-hand outer boom is fully unfolded.

4. Push the level-1/level-2 button (B) shortly until the LED (H) stops flashing.
5. Push the boom down button (C) to lower boom to position nozzles at desired working height.
6. To unlock the pendulum:
 - a. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED (H) starts flashing.
 - b. Push the right part of the pendulum lock (level-2) button until the pendulum unlocks. The pendulum - unlocked (G) display shows that the pendulum is unlocked.
7. Push the level-1/level-2 button (B) shortly, the LED stops flashing.

Unfold Inner Boom Only

CAUTION: Never unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.

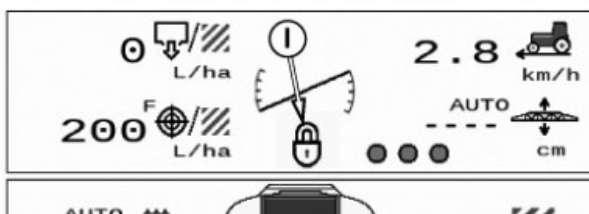
IMPORTANT: Unfolding the boom must be done with the spray boom in its highest position. Damage to the boom and the vehicle results when this is not carried out.

The sprayer is fitted with independent folding and unfolding of the outer boom segments, which enables spraying with a reduced working width spray boom.

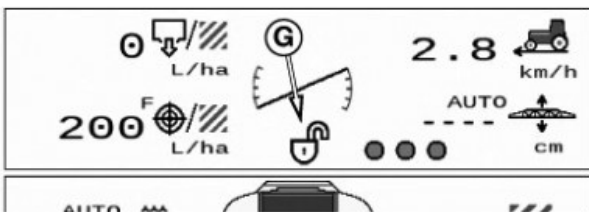
NOTE: Make sure that there is no boom roll bias on the boom, and make sure that the pendulum is unlocked.



WZ556894—UN—09DEC22



APY64290—UN—09JUL21



APY64291—UN—09JUL21

- A—Boom Up Button
- B—Level-1/Level-2 Button
- C—Boom Down Button
- D—VG Left-Hand Boom Button
- E—VG Right-Hand Boom Button
- F—Pendulum Lock (level-1)/Boom Fold/Unfold (level-2) Button
- G—Pendulum - Unlocked
- H—LED Indicator Level-2
- I—Pendulum - Locked

1. Push the boom up button (A), and raise the boom to the highest position.

2. If the pendulum is not locked:

- a. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED (H) starts flashing.

- b. Push the right part of the pendulum lock (level-1)/ boom fold/unfold (level-2) button (F) until the pendulum locks. The pendulum - locked (I) shows that the pendulum is locked.
3. While level-2 is active, push the boom down button (C) until the inner booms are fully unfolded.
4. Push the level-1/level-2 button (B) shortly until the LED indicator level-2 (H) stops flashing.
5. Push the boom down button (C) to lower boom to position nozzles at desired working height.
6. To unlock the pendulum:
 - a. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED indicator level-2 (H) starts flashing.
 - b. Push the right part of the pendulum lock (level-1)/ boom fold/unfold (level-2) button (F) until the pendulum unlocks. The pendulum - unlocked (G) display shows that the pendulum is unlocked.
7. Push the button level-1/level-2 button (B) shortly until the LED stops flashing.

A—Spray Boom (with independent outer boom folding)

IMPORTANT: Spraying and driving with one outer boom segment folded in must be done with the greatest caution since the pendulum system is blocked. Drive slowly and avoid rough tracks or spray boom and suspension could be seriously damaged.

The sprayer with electrohydraulic control is fitted with independent folding and unfolding of the outer boom segments left/right which enables spraying along obstacles in the field.

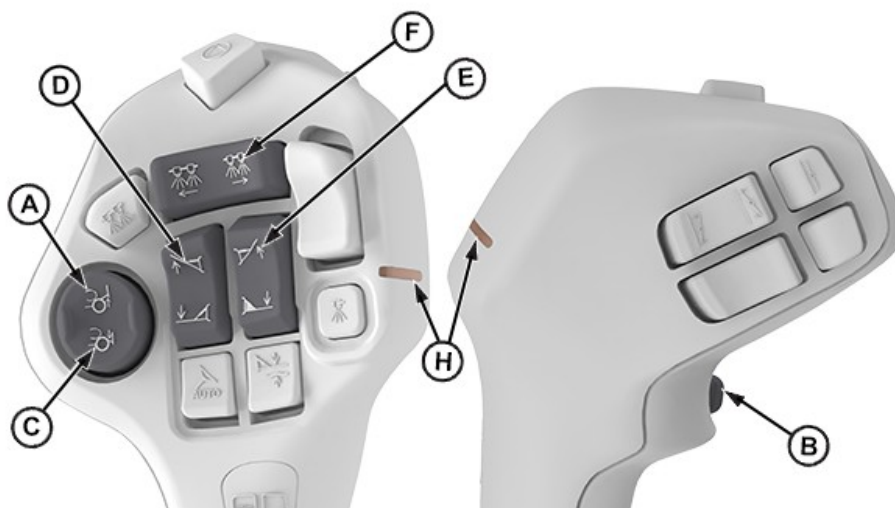
NOTE: Make sure that there is no boom roll bias on the boom, and make sure that the pendulum is locked.

Unfold Booms with Independent Outer Boom Folding

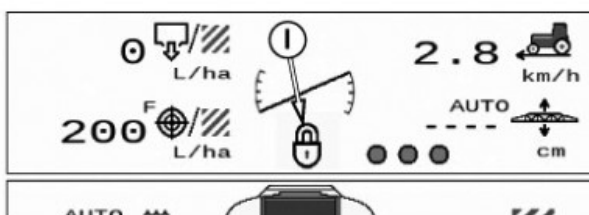
CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.



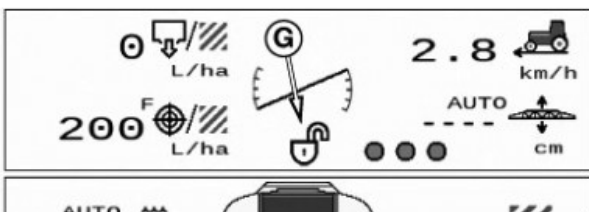
TG598834—UN—23OCT23



WZ556894—UN—09DEC22



APY64290—UN—09JUL21



APY64291—UN—09JUL21

- A—Boom Up Button
- B—Level-1/Level-2 Button
- C—Boom Down Button
- D—VG Left-Hand Boom Button
- E—VG Right-Hand Boom Button
- F—Pendulum Lock (Level-1)/Boom Fold/Unfold (level-2) Button
- H—LED Indicator Level-2
- I—Pendulum - Locked

1. Push the boom up button (A), and raise the boom to the highest position.
2. If the pendulum is not locked:
 - a. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED indicator level-2 (H) starts flashing.
 - b. Push the left part of the pendulum lock (level-1)/boom fold/unfold (level-2) button (F) until the pendulum locks. The pendulum - locked (I) display shows that the pendulum is locked.
3. To unfold the boom:
 - a. While the level-2 is active, push the boom down button (C) until the inner booms are fully unfolded.
 - b. To unfold the required outer boom:

Push the VG right-hand boom button (E) until the right-hand outer boom is fully unfolded.

Push the VG left-hand boom button (D) until the left-hand outer boom is fully unfolded.

4. Push the level-1/level-2 button (B) shortly until the LED indicator level-2 (H) stops flashing.

Push the boom down button (C) to lower boom to position nozzles at desired working height.

Fold the Boom

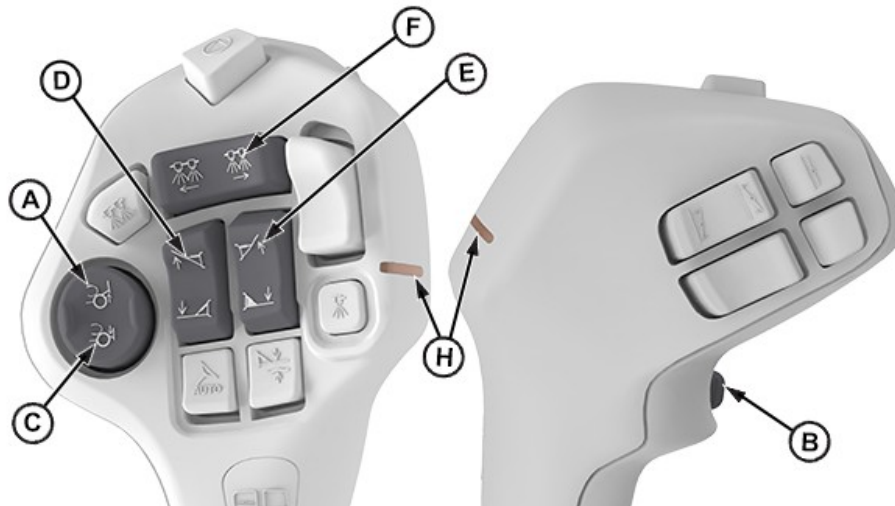
CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.

IMPORTANT: Never drive with the unfolded spray boom and the pendulum system locked, or spray boom and suspension could be seriously damaged.

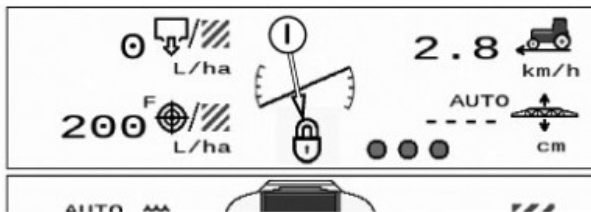
IMPORTANT: To avoid damage to the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.

IMPORTANT: Before folding in booms, the boom roll correction should have no bias set; the boom should be level to the vehicle. See Boom Roll Correction in this section.

IMPORTANT: Only the outer sections of this boom could be unfolded or folded individually.



WZ556894—UN—09DEC22



APY64290—UN—09JUL21

- A—Boom Up (level-1)/Unfold Inner Booms (level-2) Button
- B—Level-1/Level-2 Button
- C—Boom Down Button
- D—VG Left-Hand Boom/Unfold Outer Left-Hand Boom (level-2) Button
- E—VG Right-Hand Boom/Unfold Outer Right-Hand Boom (level-2) Button
- F—Pendulum Lock (level-2) Button
- H—LED Indicator Level-2
- I—Pendulum - Locked

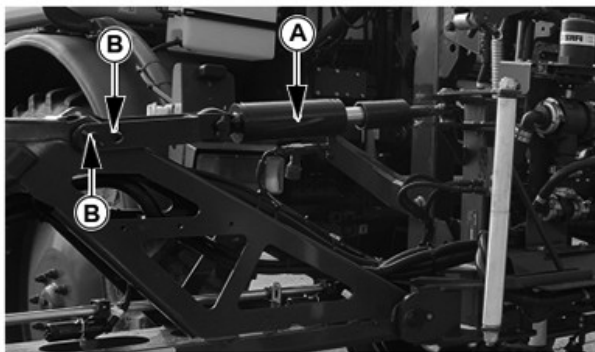
1. Push the boom up (level-1)/unfold inner booms (level-2) button (A), and raise the boom to the highest position.
2. To lock the pendulum:
 - a. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED indicator level-2 (H) starts flashing.
 - b. Push the left part of the pendulum lock (level-2) button (F) until the pendulum locks. The pendulum - locked (I) display shows that the pendulum is locked.
3. Push and hold the level-1/level-2 button (B) for at least 1 second until the LED indicator level-2 (H) starts flashing.
4. If outer boom needs to be folded:
 - a. Push the VG right-hand boom/unfold outer right-hand boom (level-2) button (E) until the right-hand outer boom is fully folded.
 - b. Push the VG left-hand boom/unfold outer left-hand boom (level-2) Button (D) until the left-hand outer boom is fully folded.
5. Push the boom up (level-1)/unfold inner booms

(level-2) button (A) until the inner booms are fully folded.

6. Push the level-1/level-2 button (B) button shortly until the LED stops flashing.
7. Push the boom down button (C) to lower booms to position them on cradles.

Variable Geometry

CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.



APY64300—UN—09JUL21



TG598837—UN—23OCT23



TG598838—UN—23OCT23

- A—Cylinder Variable Geometry**
B—Cylinder Connection Slot
C—Spray Boom with Positive Correction
E—Spray Boom with Independent Correction Left and Right
F—Left-Hand VG Up-Down Button
G—Right-Hand VG Up-Down Button

Sprayers with electrohydraulic control can be fitted with independent raising and lowering of the spray boom arms left/right (variable geometry). This can be used to adjust the height of nozzles when spraying on sloping and irregular fields.

Two hydraulic cylinders are installed between the center frame and left and right inner boom segments. The cylinders can be set in two different positions (to the adjustable cylinder connection slot (B)).

If the bottom of the cylinders is connected to the rear slots, the boom arms can only be raised (up to 19°) and will not be lowered below horizontal position. If the cylinder is out, the spray boom is level when folded out.

NOTE: This is the preferred position if negative correction is not necessary.

If the bottom of the cylinders is connected to the first slots, the boom arms can be raised (up to 12.5°) and lowered (up to 6.5°). In the middle stroke position of the cylinders, the spray boom is level when unfolded.

When the spray boom is folded out fully, the left and right spray booms can be raised or lowered.

Push the following buttons on the multi-function lever (MFC):

- The **left-hand VG up-down** button (F) to lower or raise the left-left-hand boom.
- The **right-hand VG up-down** button (G) to lower or raise the right-hand boom.

IMPORTANT: Before folding in the spray boom, the left and right spray boom arms always have to be level.

CF4BIPJ,1770205555505-19-04FEB26

Automatic Boom Unfolding and Folding—MK Boom



TG693827—UN—18NOV25



TG693828—UN—18NOV25



TG695473—UN—11DEC25



TG693829—UN—18NOV25

A—Tera 10 Display Button

B—Select Level 1 / Level 2

C—Spray Boom Lower (Level 1) / Inner Boom Unfold (level 2)

D—Spray Boom Raise (Level 1) / Inner Boom Fold (Level 2)

E—Boom Section Indexing (IBS) Right (Level 1) / Pendulum Lock OFF (Level 2)

F—John Deere Terrain Command Control/Command™ Pro ON/OFF

G—Boom Section Indexing (IBS) Left (Level 1) / Pendulum Lock ON (Level 2)

H—Boom Roll Centre

Boom Unfolding :

1. On the machine main page of the Tera 10 display, tap on the Tera 10 display button (A) to choose the auto and manual boom folding and unfolding option.

IMPORTANT: The green color indicates that automatic mode is active. The red color indicates that manual mode is active.

2. Press select level 1 / level 2 (B) button to switch from level 1 to level 2.
3. After shifting to level 2, press and hold inner boom unfold (C) button until the booms are completely unfolded.

NOTE: Press and hold inner boom unfold (C) button until the message pops up on the Tera 10 display indicating that the boom is fully unfolded.

4. Unlock the pendulum lock by using pendulum lock off (E) button in level 2.
5. Press select level 1 / level 2 (B) button to switch from level 2 to level 1.
6. Turn ON the NORAC system with John Deere terrain command control (F) button to perform boom operation.

Boom Folding :

1. Press select level 1 / level 2 (B) button to switch from level 1 to level 2.
2. Press boom roll center button (H) to center boom roll.

NOTE: If the pendulum is not centered, the system does not allow the operator to lock it.

3. Lock the pendulum with pendulum lock on (G) button in level 2.

4. Press and hold inner boom fold (D) button until the booms are completely folded.

NOTE: Press and hold inner boom fold (D) button until the message pops up on the Tera 10 display indicating that the boom is fully folded.

5. Press select level 1 / level 2 (B) button to switch from level 2 to level 1.

CF4BIPJ,1770205553615-19-04FEB26

Independent Boom Unfolding (Ti-M Boom)

Independent Boom Unfolding—Left Side



TG693827—UN—18NOV25



TG695474—UN—22DEC25



TG695475—UN—22DEC25



TG695476—UN—22DEC25

A—Tera 10 Display Button

B—Switch

C—Select Level 1 / Level 2

D—Spray Boom Lower (Level 1) / Inner Boom Unfold (level 2)

Position 1—Left-Hand Boom Section

1. On the machine main page of the Tera 10 display, tap on the Tera 10 display button (A) to choose the auto and manual boom folding and unfolding option.

IMPORTANT: The green color indicates that automatic mode is active. The red color indicates that manual mode is active.

2. Select left-hand boom section (Position 1) of switch (B), as shown on the CommandARM, to select the left-hand side of the boom.

3. Press select level 1 / level 2 (C) button to switch from level 1 to level 2.
4. After shifting to level 2, press and hold inner boom unfold (D) button until the left wing is completely unfolded.

NOTE: Press and hold inner boom unfold (D) button until the message pops up on the Tera 10 display indicating that the boom is fully unfolded.

Independent Boom Unfolding—Right Side



TG693827—UN—18NOV25



TG695475—UN—22DEC25



TG695477—UN—22DEC25



TG695476—UN—22DEC25

command control (F) button to perform boom operation

CF4BIPJ,1770205551312-19-04FEB26



TG695478—UN—22DEC25

Automatic Boom Unfolding and Folding—Ti-M Boom



TG693827—UN—18NOV25

- A—Tera 10 Display Button
 - B—Switch
 - C—Select Level 1 / Level 2
 - D—Spray Boom Lower (Level 1) / Inner Boom Unfold (level 2)
 - E—Boom Section Indexing (IBS) Right (Level 1) / Pendulum Lock OFF (Level 2)
 - F—John Deere Terrain Command Control/Command™ Pro ON/OFF
- Position 2—Right-Hand Boom Section

1. On the machine main page of the Tera 10 display, tap on the Tera 10 display button (A) to choose the auto and manual boom folding and unfolding option.

IMPORTANT: The green color indicates that automatic mode is active. The red color indicates that manual mode is active.

2. Select right-hand boom section (Position 2) of switch (B), as shown on the CommandARM, to select the right-hand side of the boom.
3. Press select level 1 / level 2 (C) button to switch from level 1 to level 2.
4. After shifting to level 2, press and hold inner boom unfold (D) button until the right wing is completely unfolded.

NOTE: Press and hold inner boom unfold (D) button until the message pops up on the Tera 10 display indicating that the boom is fully unfolded.

5. Unlock the pendulum lock by using pendulum lock off (E) button in level 2.
6. Press select level 1 / level 2 (C) button to switch from level 2 to level 1.
7. Turn ON the NORAC system with John Deere terrain



TG640738—UN—12JUL24



TG693828—UN—18NOV25



TG695473—UN—11DEC25



TG693829—UN—18NOV25

- A—Tera 10 Display Button
- B—Select Level 1 / Level 2
- C—Spray Boom Lower (Level 1) / Inner Boom Unfold (level 2)
- D—Spray Boom Raise (Level 1) / Inner Boom Fold (Level 2)
- E—Boom Section Indexing (IBS) Right (Level 1) / Pendulum Lock OFF (Level 2)
- F—John Deere Terrain Command Control/Command™ Pro ON/OFF
- G—Boom Section Indexing (IBS) Left (Level 1) / Pendulum Lock ON (Level 2)
- H—Boom Roll Centre
Position 1—Left Arm Opening
Position 2—Concurrent Opening and Closing Mode
Position 3—Right Arm Opening

Boom Unfolding :

1. On the machine main page of the Tera 10 display, tap on the Tera 10 display button (A) to choose the auto and manual boom folding and unfolding option.

IMPORTANT: The green color indicates that automatic mode is active. The red color indicates that manual mode is active.

2. Select concurrent opening and closing mode (Position 2) of switch, as shown on the CommandARM, to simultaneously unfold the spray boom.
3. Press and hold select level 1 / level 2 (B) button to switch from level 1 to level 2.
4. After shifting to level 2, press and hold inner boom unfold (C) button until the booms are completely unfolded.

NOTE: Press and hold inner boom unfold (C) button until the message pops up on the Tera 10 display indicating that the boom is fully unfolded.

5. Unlock the pendulum lock by using pendulum lock off (E) button in level 2.
6. Press select level 1 / level 2 (B) button to switch from level 2 to level 1.
7. Turn ON the NORAC system with John Deere terrain

command control (F) button to perform boom operation.

Boom Folding :

1. Select concurrent opening and closing mode (Position 2) of switch, as shown on the CommandARM, to simultaneously fold the spray boom.
2. Press and hold select level 1 / level 2 (B) button to switch from level 1 to level 2.
3. Press boom roll center button (H) to center boom roll.

NOTE: If the pendulum is not centered, the system does not allow the operator to lock it.

4. Lock the pendulum with pendulum lock on (G) button in level 2.
5. Press and hold inner boom fold (D) button until the booms are completely folded.

NOTE: Press and hold inner boom fold (D) button until the message pops up on the Tera 10 display indicating that the boom is fully folded.

6. Press select level 1 / level 2 (B) button to switch from level 2 to level 1.

CF4BIPJ,1770205549332-19-04FEB26



TG695474—UN—22DEC25

A—Tera 10 Display Button
B—Switch
Position 1—Left-Hand Boom Section

1. On the machine main page of the Tera 10 display, tap on the Tera 10 display button (A) to choose the auto and manual boom folding and unfolding option.

IMPORTANT: The green color indicates that automatic mode is active. The red color indicates that manual mode is active.

2. Select left-hand boom section (Position 1) of switch (B), as shown on the CommandARM, to select the left-hand side of the boom.

Independent Boom Folding (Ti-M Boom)

Independent Boom Folding—Left Side



TG693827—UN—18NOV25



TG695475—UN—22DEC25



TG695479—UN—23DEC25

C—Select Level 1 / Level 2
D—Boom Roll Center

3. Press select level 1 / level 2 (C) button to switch from level 1 to level 2.
4. Press boom roll center button (D) to center boom roll.

NOTE: If the pendulum is not centered, the system does not allow the operator to lock it.



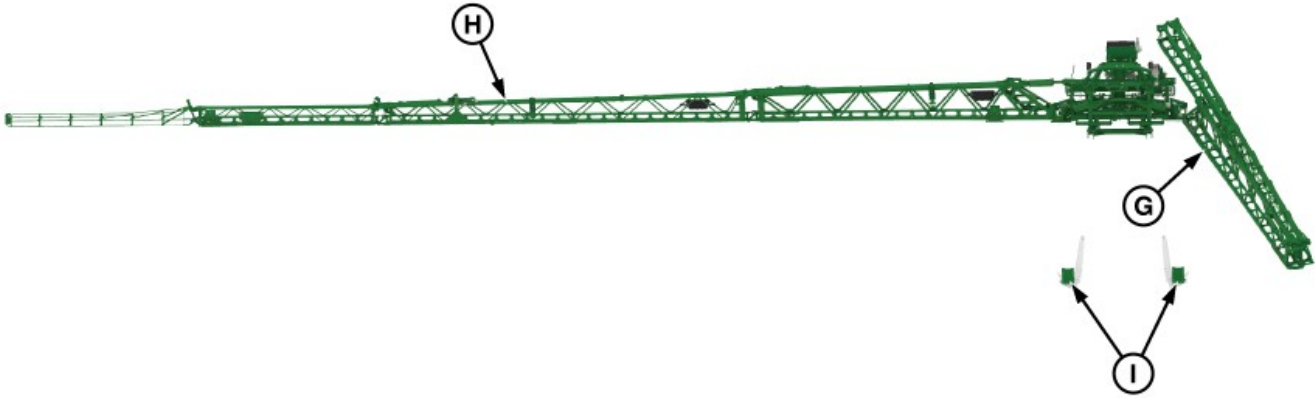
TG695482—UN—22DEC25

E—Boom Section Indexing (IBS) Left (Level 1) / Pendulum Lock ON (Level 2)
F—Spray Boom Raise (Level 1) / Inner Boom Fold (Level 2)

5. Lock the pendulum with pendulum lock on (E) button in level 2.
6. After shifting to level 2, press and hold inner boom fold (F) button until the left wing is partially folded or continue to hold button to completely fold it on boom cradle (I) until the message pops up on the Tera 10 display indicating that left wing is fully folded.

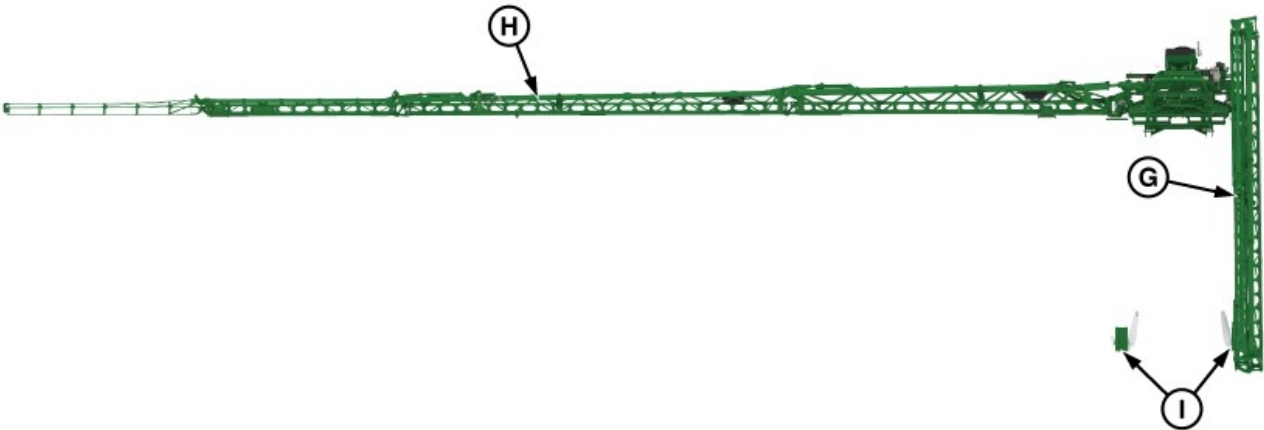


TG695480—UN—08JAN26



Left Wing Partially Folded

TG695481—UN—23DEC25



Left Wing Completely Folded

TG695483—UN—23DEC25

G—Left-Hand Side Boom
H—Right-Hand Side Boom

I—Boom Cradle

Independent Boom Folding—Right Side (Ti-M Boom)



TG693827—UN—18NOV25



TG695475—UN—22DEC25



TG695477—UN—22DEC25

A—Tera 10 Display Button

B—Switch

Position 2—Right-Hand Boom Section

1. On the machine main page of the Tera 10 display, tap on the Tera 10 display button (A) to choose the auto and manual boom folding and unfolding option.

IMPORTANT: The green color indicates that automatic mode is active. The red color indicates that manual mode is active.

2. Select right-hand boom section (Position 2) of switch (B), as shown on the CommandARM, to select the right-hand side of the boom.



TG695479—UN—23DEC25

C—Select Level 1 / Level 2

D—Boom Roll Center

3. Press select level 1 / level 2 (C) button to switch from level 1 to level 2.
4. Press boom roll center button (D) to center boom roll.

NOTE: If the pendulum is not centered, the system does not allow the operator to lock it.

E—Boom Section Indexing (IBS) Left (Level 1) / Pendulum Lock ON (Level 2)

F—Spray Boom Raise (Level 1) / Inner Boom Fold (Level 2)

5. Lock the pendulum with pendulum lock on (E) button in level 2.

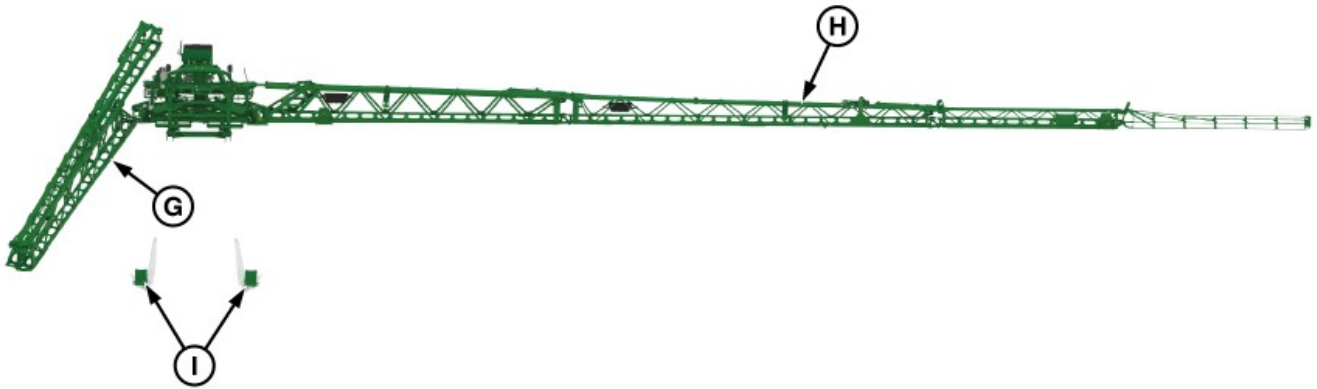
6. After shifting to level 2, press and hold inner boom fold (F) button until the right wing is partially folded or continue to hold button to completely fold it on boom cradle (I) until the message pops up on the Tera 10 display indicating that left wing is fully folded.



TG695480—UN—08JAN26

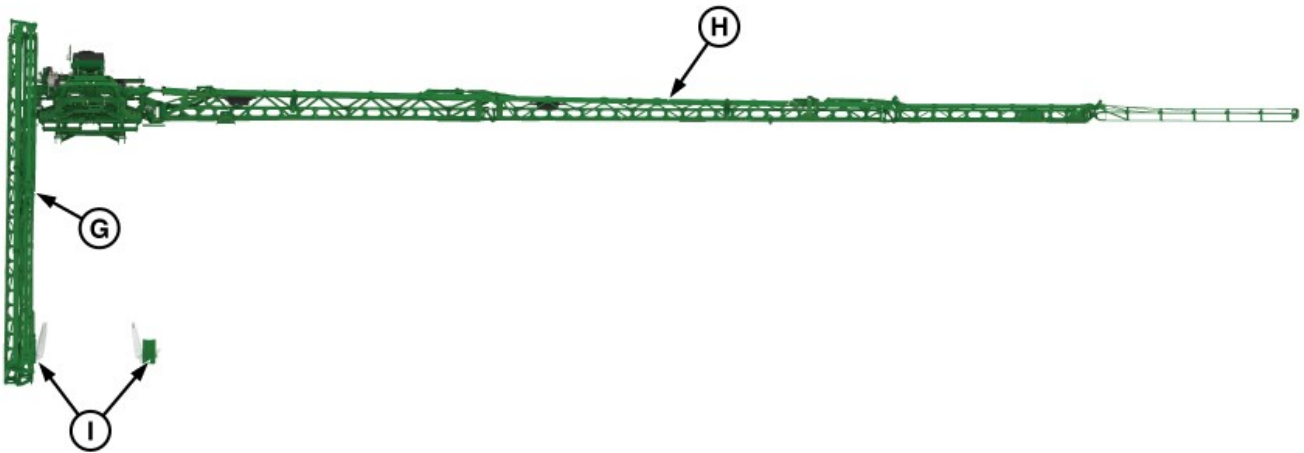


TG695482—UN—22DEC25



Right Wing Partially Folded

TG695484—UN—23DEC25



Right Wing Completely Folded

TG695485—UN—23DEC25

G—Right-Hand Side Boom
H—Left-Hand Side Boom

I—Boom Cradle

CF4BIPJ,1770205547096-19-04FEB26

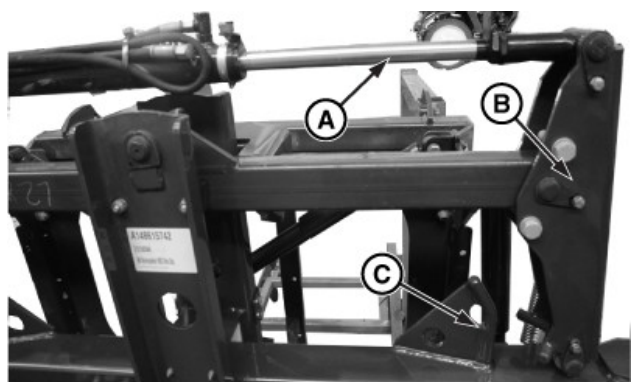
Central Boom Locking Mechanism

CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or near power lines.

NOTE: Boom locking function is operated by MSpray multi-function lever. Refer to the MSpray Multi-Function Lever section in this operator manual for controls information.

NOTE: Central Boom locking mechanism is different based on the boom type available on the machine. Refer relevant boom lock instruction.

MK Boom - 24 m



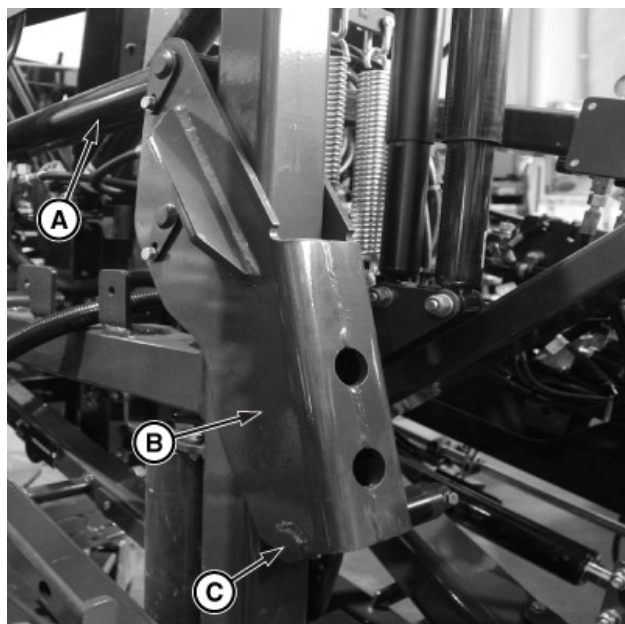
TG600028—UN—02NOV23

24 m MK Boom

A—Double Acting Hydraulic Cylinder
B—Hydraulic Locking lever
C—Locking Plate

During the transport of the machine, the boom pendulum movement must be locked. Engage the double acting cylinder (A) to lock the hydraulic locking lever (B) on the locking plate (C). Once the hydraulic locking lever (B) is locked by means of locking plate (C) it restricts the pendulum movement. To unlock the pendulum disengage the double acting hydraulic cylinder (A) so that hydraulic locking lever (B) is free from locking plate (C).

MK Boom - 28 m, 30/24 m, 32/28 m, 33/24 m, 36/24 m

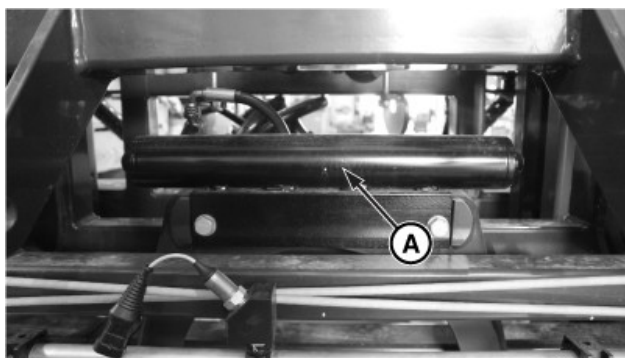


TG600029—UN—02NOV23

A—Double Acting Cylinder
B—Locking Plate
C—Pivot Pin

During the transport of the machine, the boom pendulum movement must be locked. Engage the double acting cylinder (A) which will pull the locking plate (B) across the support and the pendulum movement is locked. The locking plate (B) is pivot across the pivot pin (C) which ensure the locking mechanism. To unlock the pendulum the disengage the double acting cylinder (A) so that it extracts and moves the locking plate (B) away from support.

Ti-M Boom



TG600030—UN—02NOV23

A—Pendulum Lock Cylinder

During the transport of the machine, the boom pendulum movement must be locked. The pendulum movement is restricted by means of the pendulum lock cylinder (A). When the cylinder is in extracted position it restricts the pendulum movement as it locks against the central frame. To unlock the pendulum movement,

pendulum lock cylinder (A) needs to be returned to its original position.

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Boom Roll Correction

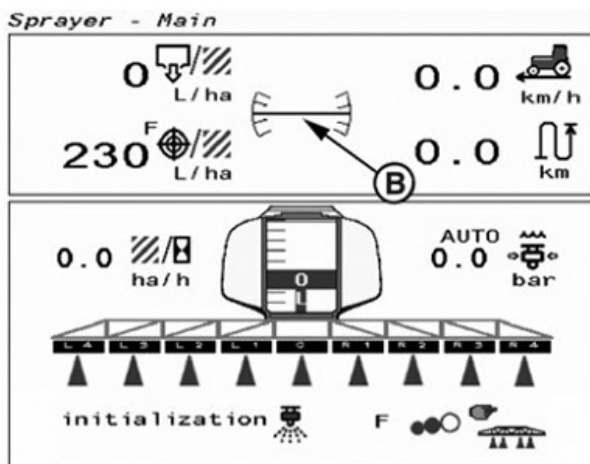
CAUTION: Never adjust the spray boom roll near obstacles or power lines.

IMPORTANT: Before folding in the boom, ensure that the boom is level and that there is no boom roll.

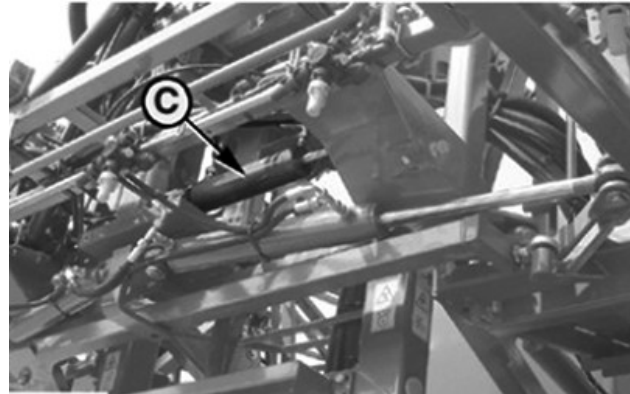
Boom roll correction allows the operator to roll the entire boom to suit the ground contour. This function is mostly used for hilly terrain.



TG598843—UN—23OCT23



APY64306—UN—09JUL21



APY64307—UN—09JUL21



TG641930—UN—26JUL24

- A—Boom Roll Button
- B—Boom Roll Indication
- C—Hydraulic Boom Roll Cylinder
- D—Boom Roll Center Button

When the spray boom is folded out fully, the spray boom can be rolled by operating the boom roll button (A) at the right-hand side of the boom.

Pushing the rear side of boom roll button (A) lowers the left boom end and raises the right boom end. Pushing the front side of boom roll button (A) lowers the right boom end and raises the left boom end.

Hold the boom roll button until the desired roll has been achieved. Boom roll indication (B) can be found on the display to monitor the boom position on sprayer main page.

To level the boom, push the boom roll center button (D). This operation levels the boom in relation to the vehicle automatically. The boom roll centering is a useful function to perform before folding in the spray boom.

NOTE: The boom roll indication shows both the desired and the actual position of the boom.

awqniwx,1720679867180-19-24JUL24

Spray Line and Nozzle Holders



APY64309—UN—09JUL21



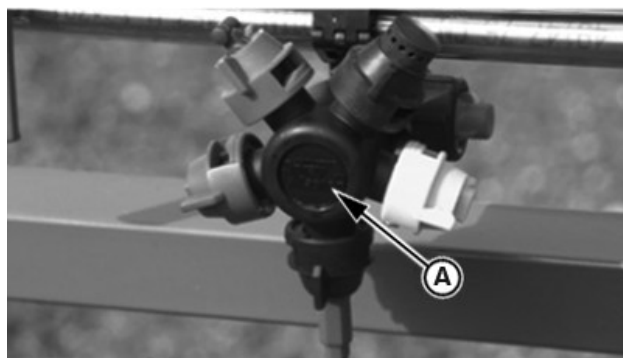
APY64310—UN—09JUL21

- A—End Stop
- B—Blind Cap

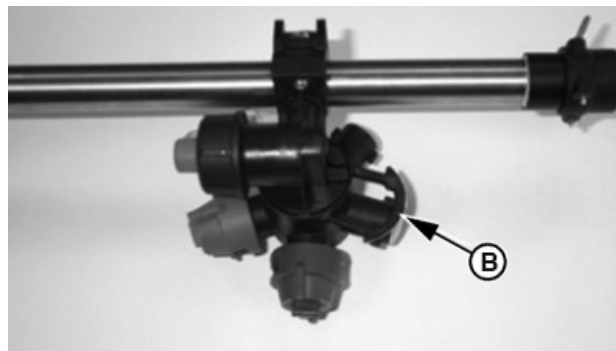
Spray booms are fitted with a stainless steel spray line with an internal diameter of 18 mm. The ends of the spray lines have removable end stops (A), which allow for easy cleaning of the lines. The spray boom is always fitted with two connections (left and right), prepared to retrofit edge nozzles. At the end of the spray boom a single nozzle holder with blind cap (B) is fitted.

Nozzle Holders

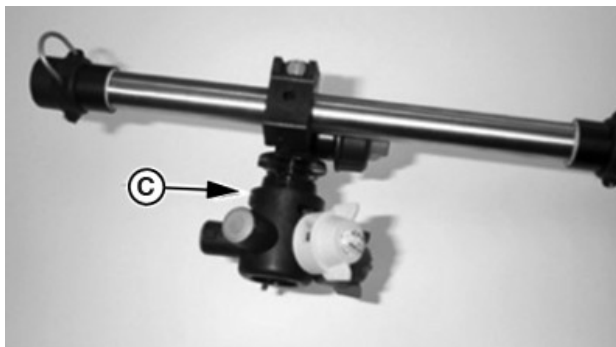
The nozzle holders are spaced at a distance of 50 cm. The nozzle holders have bayonet caps and are either single nozzle holders or revolving nozzle holders.



APY64311—UN—09JUL21



APY64312—UN—09JUL21



APY64313—UN—09JUL21

- A—Revolving Nozzle Holder
- B—Spring Clip
- C—Plug

The nozzle holders are fitted with a diaphragm valve, which prevents the nozzles from dripping after the sections have been closed off. The diaphragm is enclosed in a screw cap to allow for quick and easy cleaning, checking, or defogging.

NOTE: Stiff, damaged, or encrusted diaphragms or worn springs are usually the causes of dripping after use. The opening pressure of the diaphragm valve is approximately 0.7 bar.

Revolving Nozzle Holder

IMPORTANT: Do NOT move the carousel while spraying.

Revolving nozzle holders can be fitted to the machine as an alternative. With such a revolving nozzle holder (A), the carousel can be rotated to choose a different nozzle. The carousel could only be turned when it is not under pressure.

The revolving nozzle holders have five nozzle connections.

The nozzle pointing downwards is the one is the active one. There is a blind position between each spraying position.

The carousel can easily be removed from the nozzle holder once the spring clip (B) has been removed.

Plug (C) can then also be removed from the front of the

nozzle holder. This allows for simple cleaning of the nozzle holder.

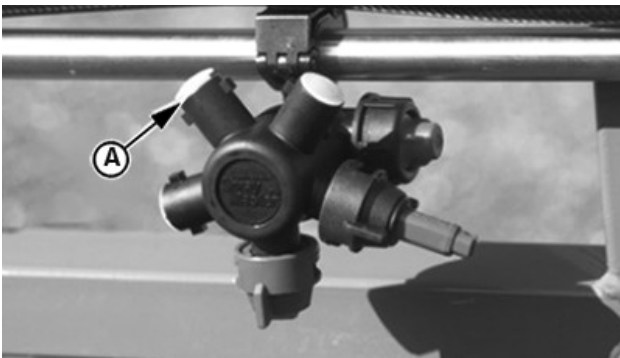
The caps fitted to the revolving nozzle holder have a bayonet connection. The correct angle of the nozzle in relation to the spray line is preset in the bayonet cap, so that the nozzle automatically points in the right direction in relation to the spray line when the bayonet cap is attached to the nozzle holder, thus avoiding interference of the individual nozzle spray patterns.

NOTE: Make sure that the bayonet has the right seal and that the seal is correctly positioned in the cap.

There are various types of bayonet caps with specific seals intended for various types of nozzles.

Position Bayonet Caps on Nozzle Holders

IMPORTANT: Do NOT use the protective cap placed in the nozzle body as "blind" position; the cap is pushed out of the nozzle body. Crop damage may occur.



APY64314—UN—09JUL21

A—Protective Cap

Multiple nozzle holders are equipped with protective caps (A) to prevent dirt entering the nozzle body. Protective caps are placed in the nozzle body if not all positions are fitted with caps and nozzles. If the nozzle body is afterwards equipped with an additional nozzle,

seal and nozzle cap, the protective cover has to be removed with a small screwdriver, for example.

Bayonet Caps for the Nozzle Holders

Bayonets are required for the use of other types of nozzles, such as air induction (venturi) nozzles, deflector nozzles, hollow cone nozzles, twin orifice flat fan nozzles, and so on.

For more information, see your John Deere dealer or other service provider.

AWQNIWX,1754893881976-19-18AUG25

Replacing Nozzles

IMPORTANT: Nozzles should be replaced when flow rate has increased by 10% from the desired rate at a given pressure.

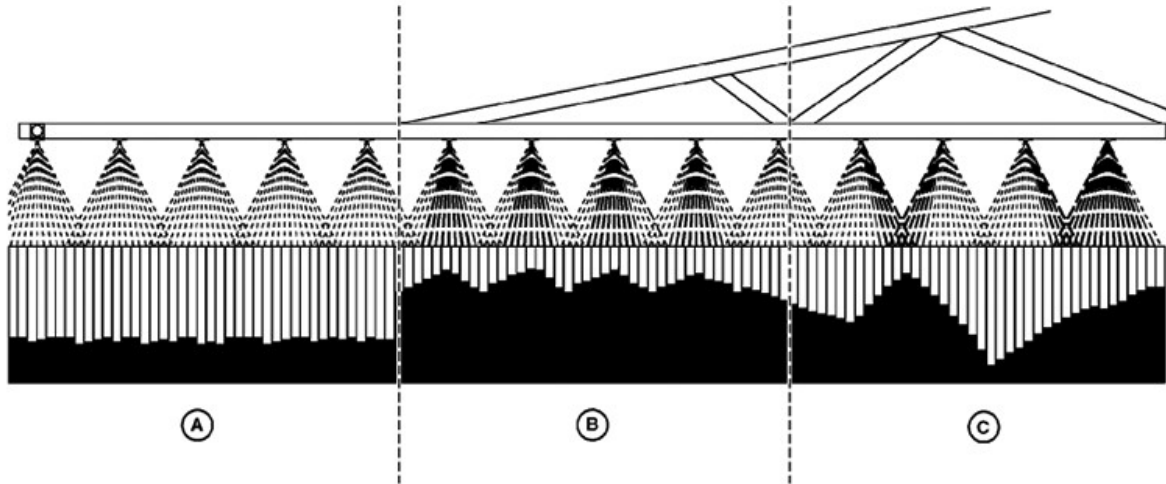
Nozzles are the most important part of the sprayer. No matter how well-engineered the rest of the machine is, if the nozzles are bad it is impossible to obtain good spray coverage. It is important to carefully choose the type and size of nozzles as well as maintain or replace them when needed.

As nozzles wear, their orifices increase in size. The spray control system compensates for this by reducing the pressure to maintain the desired application rate. As nozzles wear, they begin to lose their overlap and may apply almost twice as much chemical or pesticide under the nozzles as they do between the nozzles.

Inaccurate spray pattern can cause chemical or pesticide to be ineffective in controlling weeds, pests, and diseases. Another spraying may be required, which implies the use of more chemicals or pesticide, extra fuel and labor costs. Expenses incurred as a result are much higher than the cost of nozzle replacement.

awqniwx,1728551138164-19-10OCT24

Check and Replace Worn Nozzles



APY64315—UN—09JUL21

A—New Spray Nozzle
B—Worn Spray Nozzle

New spray nozzles (A) produce a uniform distribution when properly overlapped.

Worn spray nozzles (B) have a higher output with more spray concentrated under each tip.

Damaged spray nozzles (C) have a erratic output—over applying and under applying.

Nozzle wear is a major cause of improper spray application. Maintenance and timely inspection helps to identify worn nozzles and extend service life.

Over-application may cause:

- Crop damage
- Chemical carry-over, affecting future crops
- Ground water contamination

Under-application may:

- Require additional field passes.
- Cause inadequate weed, parasite, or disease control, all of which impacts on crop yields.

C—Damaged Spray Nozzle

determined using mathematical formulas, it is recommended to check if spraying performance has been affected by:

- Wear and tear (especially on nozzles)
- Damaged or malfunctioning parts (such as pressure gauges)
- Plugged or restricted passages (such as strainers and hoses)

Obviously, pre-season visual checks are not sufficient to ensure adequate application, nor is the fact that equipment and nozzle tips are new. Also, manufacturer's catalogs are only guidelines; fine-tuning a sprayer is the operator's responsibility.

A spraying performance output should be checked:

- After any adjustments.
- When switching to a new chemical or application rate.
- After a week of continuous use under the same circumstances.

NOTE: Verifying the results of an adjustment is a standard procedure for all John Deere products. Never make adjustments to a sprayer without the verifying the output from the nozzles.

awqniwx,1728551204700-19-10OCT24

Calibrating Nozzles

Frequency of Calibration

Even though a sprayer's operation can be theoretically

Cost	Resulting In:
Wasted Resources	Over-or-Under-Application of Expensive Chemicals
Reduced Yield/Quality	Chemical Stress, Parasite Pressure Remaining
Effect on Future Crops	Chemical Carry-Over

Filling Solution Tank Directly

CAUTION: Read carefully the directions printed on the chemical manufacturer's labels before handling chemicals or you may be exposed to hazardous materials, which could affect your health

CAUTION: Keep spray material away from skin. If spray material comes into contact with the body, wash it off immediately with clean water and detergent.

IMPORTANT: Do NOT add chemical to the solution tank until just before field use. Follow the chemical manufacturer's instructions for mixing the spray solution to obtain the desired application rate and effect.

IMPORTANT: Use a strainer on filling hoses ensuring the water entering the solution tank is free from debris and slit. The strainer helps to protect the inner workings and pumps of the machine.

Read and strictly follow the instructions on the container label regarding mixing proportions. Do not pour the concentrate into an empty solution tank.

Use the following procedure for filling the solution tank through the filling opening:

1. Open the solution tank lid.
2. Fill the solution tank to about half full with clean water.
3. Add the chemical concentrate.
4. Finish filling the solution tank with the clean water.

NOTE: Rinse the empty chemical container with clean water.

KWPZAG2,0000B37-19-06SEP21

Filling Solution Tank with Sprayer Filling Pump

CAUTION: Read carefully the directions printed on the chemical label before handling, chemicals could be hazardous to personal health.

CAUTION: Filling valve of the solution tank fill connection cap (A) can contain chemical solution which could be hazardous to personal health. Care should be used when removing the fill connection cap (A).

CAUTION: Observe the tank level carefully to avoid overfilling, and the possibility the tank contents (with chemicals) run through the solution tank overflow.

IMPORTANT: Do not add chemical to the solution tank until just before field use. Follow the chemical manufacturer's instructions for mixing the spray solution to obtain the desired application rate and effect.

IMPORTANT: Use a strainer on filling hoses ensuring the water entering the solution tank is free from debris and slit. The strainer helps to protect the inner workings and pumps of the machine.



APY64316—UN—09JUL21

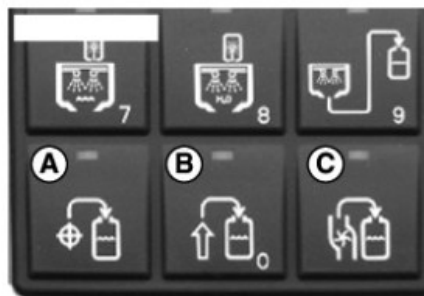
A—Fill Connection Cap

1. Set the tractor engine between 1200 rpm to 1800 rpm.

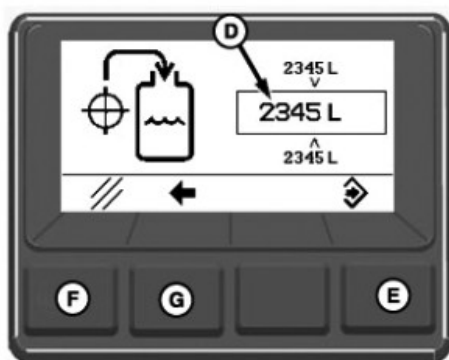
NOTE: The tractor hydraulic performance determines the filling performance.

NOTE: Higher rpm improves the sprayer performance for filling, as more oil becomes available for the filling pump.

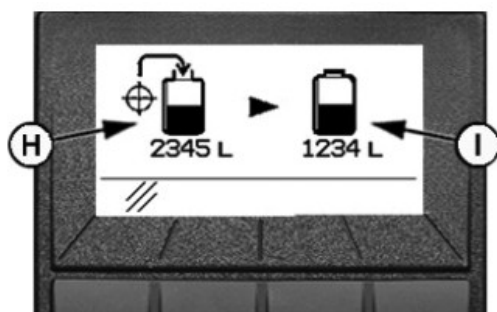
2. Remove fill connection cap (A).
3. Connect the external fill hose to filling adapter.



APY64317—UN—09JUL21



APY64318—UN—09JUL21



APY64319—UN—09JUL21

A—Auto Fill Button
B—External Pump Filling Button
C—Filling Pump Button
D—Auto Fill Volume
E—Enter Button
F—Cancel Button
G—Back Space Button
H—Target Filling Level
I—Current Solution Tank Level

4. Open the manual shutoff valve on the fill connection.
5. Push the auto fill button (A).

NOTE: The target volume can be set on the display in the cab and on the SCS panel via the numbers on the keypad buttons.

6. Set the desired target with auto fill volume (D). If using the SCS panel:
 - Use the keypad buttons (the number is on the button).
 - Use the back space button (G) to remove the last selected number.
7. Push the enter button (E) to confirm the target volume.

NOTE: The LEDs of external pump filling button (B) and filling pump button (C) flash until filling method has been selected.

NOTE: Push the cancel button (F) to stop and exit the auto fill procedure.

8. Push the filling pump button (C) and the fill

procedure starts and stops when the target volume level is reached.

9. Close the manual shutoff valve on the fill connection.
10. Open the lock levers and carefully disconnect external fill hose from filling the adapter.
11. Refit fill connection cap and close lock levers.

To add chemicals to the solution tank via the inductor, refer to Operating the Machine section.

KWPZAG2,0000B38-19-06SEP21

Filling Solution Tank with External Pump

CAUTION: Read carefully the directions printed on the chemical label before handling, chemicals may be hazardous to personal health.

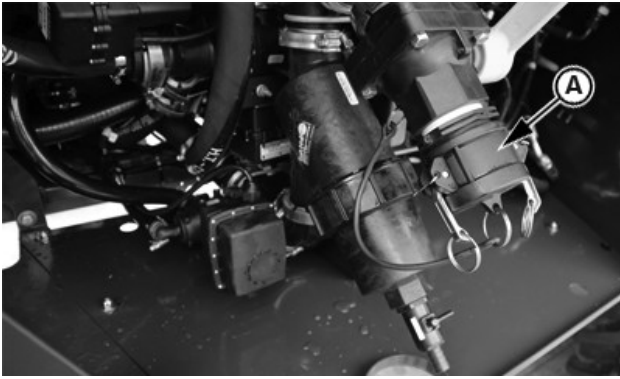
CAUTION: Filling valve of the solution tank fill connection cap (A) can contain chemical solution which may be hazardous to personal health. Care should be used when removing the fill connection cap (A).

CAUTION: Observe the tank level carefully to avoid overfilling, and the possibility the tank contents (with chemicals) run through the solution tank overflow.

IMPORTANT: Add the chemical just before field use and NOT earlier. Follow the chemical manufacturer's instructions for mixing the spray solution for the desired application rate and effect.

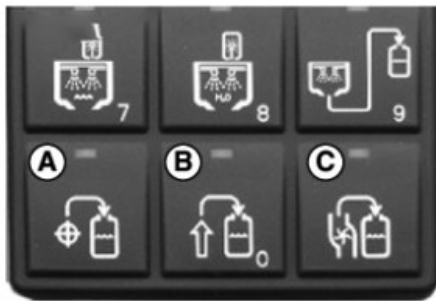
IMPORTANT: Use a strainer on filling hoses ensuring the water entering the solution tank is free from debris and slit. The strainer helps to protect the inner workings and pumps of the machine.

IMPORTANT: Do NOT over-pressurize the sprayer. The maximum allowed external pump stand-by pressure is 4 bar (for higher pressure a field bundle is available).

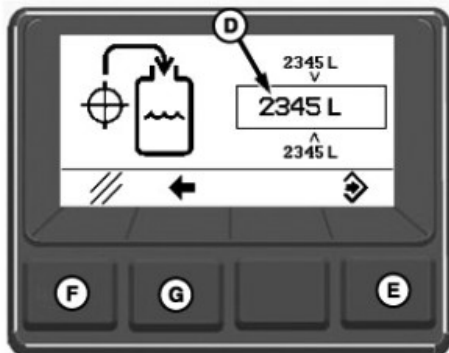


A—Fill Connection Cap

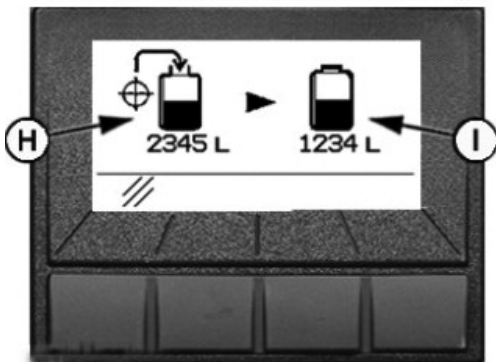
1. Operate the tractor engine at low idle.
2. Remove fill connection cap (A).
3. Connect external fill hose to filling adapter.



APY64321—UN—09JUL21



APY64322—UN—09JUL21



APY64323—UN—09JUL21

- A—Auto Fill Button
B—External Pump Filling Button
C—Filling Pump Button

- D—Auto Fill Volume
E—Enter Button
F—Cancel Button
G—Back Space Button
H—Target Filling Level
I—Current Solution Tank Level

4. Open the manual shutoff valve on the fill connection.
5. Push the auto fill button (A).

NOTE: The target volume can be set on the display in the cab and on the SCS panel via the numbers on the keypad buttons.

6. Set the desired target auto fill volume (D). If using the SCS panel:
 - Use the keypad buttons (the number is on the button).
 - Use the back space button (G) to remove the last selected number.
7. Push the enter button (E) to confirm the target volume.

NOTE: The LEDs external pump filling button (B) and filling pump button (C) flash until filling method has been selected.

NOTE: Push the cancel button (F) to stop and exit the auto fill procedure. Pushing the back button (G) returns to the previous screen view.

8. Push the external pump filling button (B) and the fill procedure starts and stops when the target volume level is reached.
9. Start the external pump.
10. After the solution tank has been filled to the preset level, stop the external pump.
11. Close the manual shutoff valve on the fill connection.
12. Open the lock levers and carefully disconnect external fill hose from filling the adapter.
13. Refit fill connection cap and close lock levers.

To add chemicals to the solution tank via the inductor, refer to Operating the Machine section.

KWPZAG2,0000B39-19-06SEP21

Filling Solution Tank from Rinse Tank

CAUTION: Read carefully the directions printed on the chemical label before handling, chemicals may be hazardous to personal health.

CAUTION: Observe the tank level carefully to avoid overfilling, and the possibility the tank contents (with chemicals) runs out through the solution tank overflow.

CAUTION: Observe the rinse tank level carefully to avoid dry run of the sprayer pump.

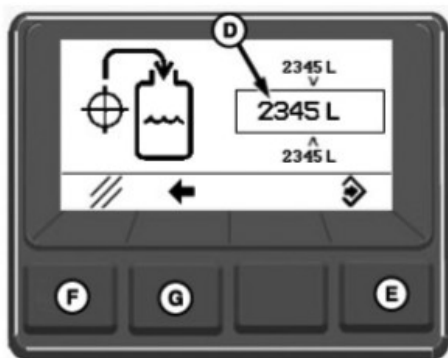
IMPORTANT: Add the chemical just before field use and NOT earlier. Follow the chemical manufacturer's instructions for mixing the spray solution to obtain the desired application rate and effect.



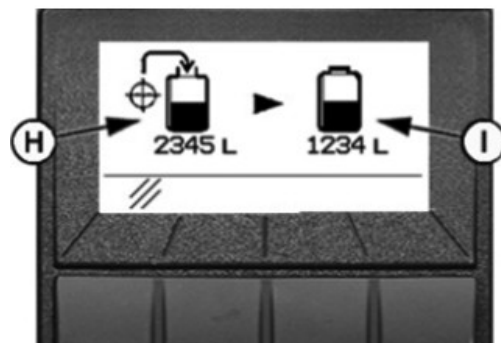
APY64324—UN—09JUL21



APY64325—UN—09JUL21



APY64326—UN—09JUL21



APY64327—UN—09JUL21

- A—Rinse Tank Button
- C—Menu Button
- D—Auto Fill Volume
- E—Enter Button
- F—Cancel Button
- G—Go Back to Previous Target Rate
- H—Target Filling Level
- I—Current Solution Tank Level

1. Operate tractor engine at low idle.
2. Push the menu button (C).
3. Push the rinse tank button (A).

NOTE: The target volume can be set on the display in the cab and on the SCS panel via the numbers on the keypad buttons.

NOTE: The maximum target volume is actual volume + rinse tank volume.

4. Set the desired target auto fill volume (D). If using the SCS panel:
 - Use the keypad buttons (the number is on the button).
 - Use the back space button (G) to remove the last selected number.
5. Push the enter button (E) to confirm that the fill procedure is to be started.

NOTE: Push the cancel button (F) to stop and exit the auto fill procedure. Pushing the back button (G) returns to the previous screen view.

6. After the solution tank has been filled to the preset level, the fill procedure stops.

To add chemicals to the solution tank via the inductor, refer to the Operating the Machine section.

Agitation of Solution Tank Contents



APY64328—UN—09JUL21

A—Agitation Button

NOTE: The agitation can be enabled/disabled on the display in the cab.

NOTE: Use the display in the cab to set the agitation parameters.

To enable/disable agitation of the solution tank contents, push agitation button (A). The LEDs on this button show the agitation settings.

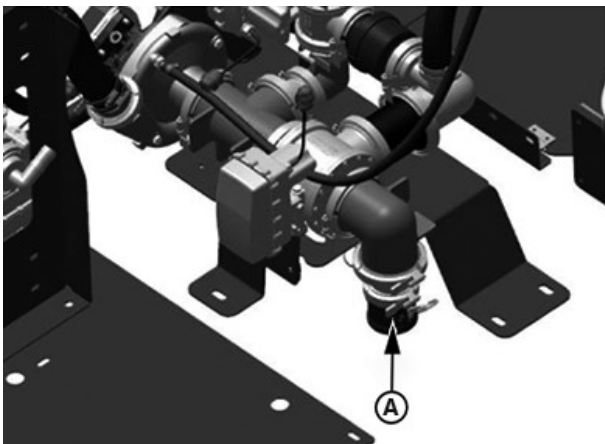
KWPZAG2,0000B3B-19-06SEP21

Electrical Drain

CAUTION: Drain the solution tank in a proper area to avoid personal and environmental contamination. Wear personal protective equipment for this procedure.

CAUTION: Ensure that the vehicle is correctly parked on a level ground and the engine is turned off before entering under the vehicle.

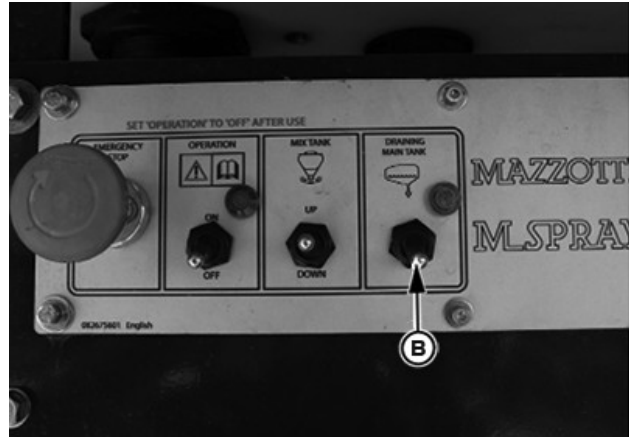
This procedure intends to show how to drain the main spray tank.



APY64329—UN—09JUL21

A—Draining Cap

1. Remove the draining cap (A) from the drain.
2. Make sure the spraying centrifugal pump (CF) is turned off by deactivating auto fill button, cancel button, and target filling button on the external keypad.



APY64330—UN—09JUL21

B—Draining Main Tank Button

3. Activate the draining main tank button (B) in the outside panel.
4. When the operation is complete, deactivate the draining main tank button (B) and close the draining cap (A).

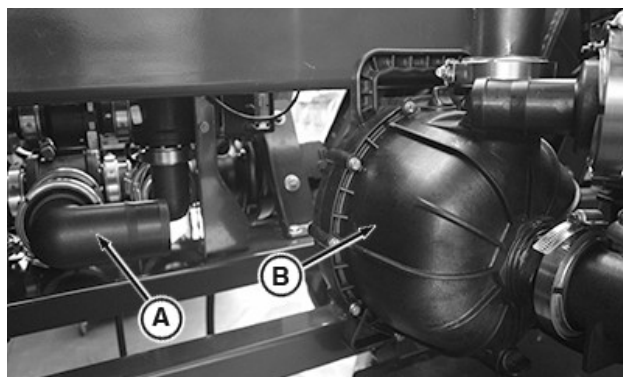
KWPZAG2,0000B3C-19-06SEP21

System Rinse

System Rinse is a factory-installed option that can be fitted to the MAF 32/MAF 40 series sprayers. The system can fully execute a dilution or rinse and spray procedure from the cab with the most efficient use of the rinse tank content to minimize chemical pollution.

NOTE: Consult the dead volume chart for the respective machine. The rinse water tank may must be filled a number of times depending on the volumes specified for the respective machine.

System Composition



APY65294—UN—13AUG21

A—Solution Pump
B—Filling Pump

A hydraulically driven centrifugal filling pump (B) provides clean water from the rinse water tank to the solution tank rinsing nozzles to dilute the solution tank content. Clean water to be used for rinsing the boom or the system is drawn from the rinse water tank by the solution pump (A) and the filling pump (B) from the rinse water tank. Electrically controlled valves are configured by each program where required for the process.

The diluted tank content is circulated through the complete sprayer plumbing including spray boom (up to section valves and up to the nozzles with pressure circulation) using the centrifugal filling and solution pumps without spraying from the nozzles.

For rinsing the spray boom only (without diluting the tank content) the liquid flow can be directed to the suction side of the pump using the electrically operated rinse water tank valve (without leaving the cab).

System rinse works similarly to the spray boom rinse. The main difference is that the solution tank content is diluted as the return line from the center frame is rinsed and when the solution tank rinse nozzles are used. The agitation system can also be rinsed during this program.

The Auto Dilute calculator takes into account:

- Operator's input on the GreenStar™ display
- The dead volume of the entire sprayer
- The dead volume of the boom
- The actual tank content
- The amount of rinse water available for use
- The clean water required for proper dilution, calculating the number of cycles to ensure a dilution factor X (depending on country-specific legislation and chemicals used)

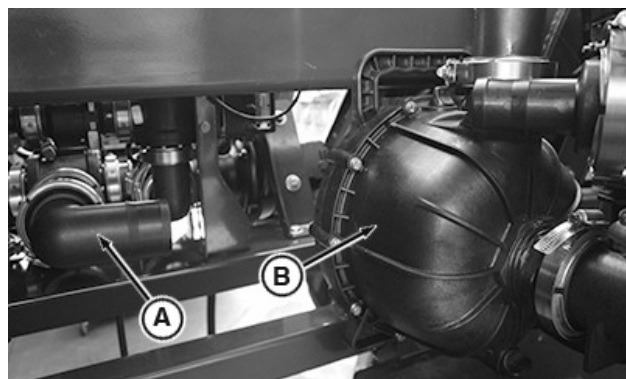
NOTE: Contents of rinse water tank. When the rinse water tank becomes empty, the centrifugal pump stops to prevent damage and running dry.

System Rinse Components

CAUTION: Refer to the label of chemical product used for recommendation on cleaning and operator safety.

CAUTION: Some countries have enforced laws which govern the dilution factor and the amounts of chemical residue that can be sprayed out on the fields.

IMPORTANT: Pay attention to the following points:



APY65294—UN—13AUG21

A—Solution Pump
B—Filling Pump

- Crop protection chemicals and spray solutions, which adhere to the tank walls, hoses, and spray lines must be cleaned more intensively with cleaning agents and require longer rinsing.
- Cleaning agents could be added to the rinse tank at the beginning of the cleaning procedure.
- The more rinse water is used, the more efficient the dilution.
- It is recommended to perform the cleaning procedure twice if the machine is highly polluted.
- In order to avoid draining undiluted residue, the residual liquid must be diluted with water from the rinse tank and then sprayed onto the field. Observe the regulations for residual liquids for the country the machine is operated in.

Hydraulically driven solution pump: on machines equipped with hydraulically driven solution pump (A) supplies the various functions to rinse and flush the solution system, spray lines and, boom.

Hydraulically driven filling pump: The hydraulically driven filling pump (B) is situated behind the drawbar and under the sprayer platform. The pump has a connection to the rinse water tank and is used for rinsing and flushing the eductor, and supplying rinse water to the solution tank rinsing nozzles.

System Rinse uses the two centrifugal pumps in combination to achieve the required results for the program selected from the menu.

Agitation can be deactivated automatically or manually by pressing the agitation on-off button on the sprayer - main page.

The important information about dilution of the residual spraying liquid and cleaning of the sprayer is as below:

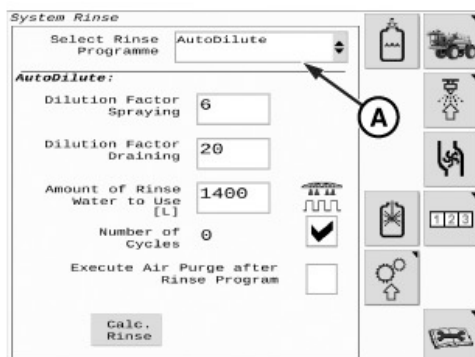
- Steps which should be followed to rinse all the different hoses and spray lines properly.
- Most effective way to dilute and spray out the residual spray liquid.
- Most efficient use of water available in the rinse water tank for the purpose of cleaning the sprayer

System Rinse

NOTE: Ensure that all boom sections are enabled (appear black on the display).

John Deere Section Control is turned Off.

The Spray Master valve is closed.



TG645219—UN—28AUG24



APY64332—UN—09JUL21

- A—Auto Dilute
B—Continuous Dilution
C—Boom Rinse
D—Solution System Rinse
E—Rinse Cycle

To select rinse program options on the GreenStar™

display, use the softkeys job settings and Solution System Rinse (D).

In the field Select Rinse Program on the System Rinse screen there are four different operations to select from:

- Auto Dilute (A) system fully executes a sequential dilution and spray procedure from the cab. The operator has full control of the dilution factor, which is implemented throughout the machine in controlled steps.
- Continuous Dilution (B) with dilution factor set to 0 or 1: The system immediately starts spraying out the remaining spray liquid while diluting the solution tank content.
- Continuous Dilution (B) with a dilution factor of 2 or higher (this depends on the clean water content of the rinse water tank): A single cycle Auto Dilute can be performed before carrying out the continuous dilution. Apart from the single cycle Auto Dilute (A), the operator cannot control the dilution factor for the continuous dilution process.
- Boom Rinse (C) for cleaning the boom without affecting the solution tank content. A calculated amount of water is measured by the flow meter during the rinse process. A message "BOOM RINSE FINISHED" appears on the sprayer - main page at this point so the operator can stop the process.
- Solution System Rinse (D) is designed to rinse the whole system with clean water from the rinse water tank. This system is similar to boom rinse, but has the added rinse for the return line from the center frame back to the solution tank and the agitation.
- Rinse Cycles (E) for a step for step complete rinsing of the machine. The operator can skip steps with the use of the next button on the display.

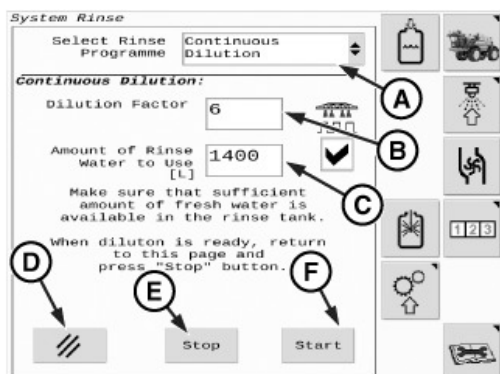
Programs involving dilution use the solution tank rinse nozzles for this purpose to deliver the clean water from the rinse water tank. This ensures that the solution tank is rinsed.

NOTE: Before starting any of the procedures in the system rinse menu ensure that the rinse water tank is full to get the best results for rinsing and for diluting. Ensure that all spray sections are enabled. Once a program has started, entering another program or machine settings interrupts the running program and stops the procedure.

Setting the Auto Dilute System

CAUTION: Some countries have enforced laws which govern the dilution factor and the amounts of chemical residue that can be sprayed out on the fields. The default value is a dilution factor of 6.

CAUTION: In some countries spraying out the chemical residue is prohibited. There are regulations for the dilution factor (the default value is 100).



TG645220—UN—28AUG24

- A—Auto Dilute
B—Dilution Factor Spraying
C—Dilution Factor Draining
D—Amount of Rinse Water to Use

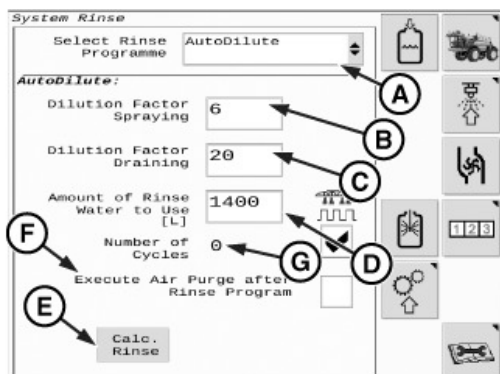
The functionality of the Auto Dilute (A) system is adjusted with three parameters.

- Dilution Factor Spraying (B): In this field, enter the selected value with which the remaining quantity in the solution tank is diluted after the first cycle of Auto Dilute.
- Dilution Factor Draining (C): In this field, enter the selected value with which the liquid in the system is finally diluted after all cycles have been completed.
- Amount of Rinse Water to Use (D) (in liters): It has to be entered as a parameter in order to calculate the cycles required.

NOTE: Ensure that the rinse water tank is full (620 liters) for the best results.

Working with Auto Dilute

To thoroughly clean the sprayer, do the following:



TG645221—UN—28AUG24

- A—Auto Dilute
B—Dilution Factor Spraying
C—Dilution Factor Draining
D—Amount of Rinse Water to Use

- E—Calculate Rinse
F—Message - Dilution Possible (press start to continue)
G—Number of Cycle
H—Start Button

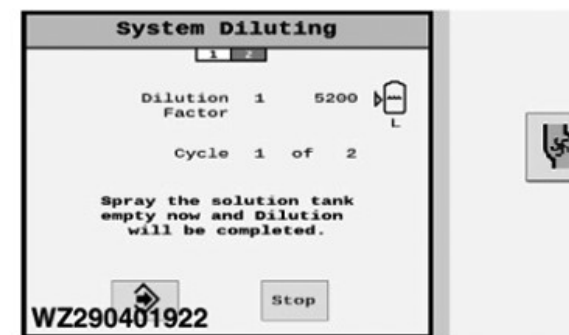
1. Make sure that the solution tank has been sprayed empty until air comes out of the spray lines.
2. Enter system rinse on the GreenStar™ display and select system rinse option Auto Dilute (A).
3. Enter Dilution Factor Spraying (B), Dilution Factor Draining (C), and the Amount of Rinse Water to Use (D).
4. Press the Calculate Rinse (E) Button to check the values entered in item 3 above.
5. When the entered values are validated, a message Dilution Possible appears, press Start to continue (F) message appears on the display as well as the Number of Cycles Required.



APY64335—UN—09JUL21



APY64336—UN—09JUL21



APY64337—UN—09JUL21

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APY64338—UN—09JUL21

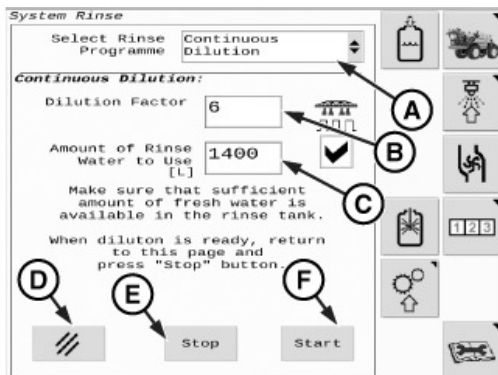
6. Press the Start button (H) to begin the Auto Dilute (A) process.

The operator can decide to stop the Auto Dilute (A) process after every cycle and spray out the chemical residue and spray out the remaining quantity with the shown Dilution Factor, or continue the dilution procedure until the preselected Dilution Factor draining (here 100 times dilution) has been reached.

Setting the Continuous Dilution

CAUTION: Some countries have enforced laws which govern the dilution factor and the amounts of chemical residue that can be sprayed out on the fields.

IMPORTANT: A sufficient amount of clean water must be contained in the rinse water tank.



TG645222—UN—28AUG24

- A—Continuous Dilution
- B—Dilution Factor
- C—Amount of Rinse Water to Use
- D—Cancel Button
- E—Stop Button
- F—Start Button

Continuous Dilution (A) has two options when working with the system. The first is to set the Dilution Factor (B) to 0 or 1. The system immediately starts with spraying out the remaining spray liquid at the original strength while diluting the solution tank content. The second is to do a single cycle Auto Dilute with a factor of 2 or higher (dependent on the rinse water tank content), followed by Continuous Dilution. The advantage with the single

cycle is that Auto Dilute is a controlled dilution to a set Dilution Factor.

Continuous Dilution (A): The functionality of the Continuous Dilution system is adjusted with two parameters.

- Dilution Factor (B): Enter the selected dilution factor value with which the remaining quantity in the solution tank is to be diluted after the only cycle of Auto Dilute.
- Amount of Rinse Water to Use (C) (in liters) has to be entered as a parameter in order to calculate the required dilution.

If the amount of water is insufficient for the required dilution factor, the system notifies the operator that this combination is not possible.

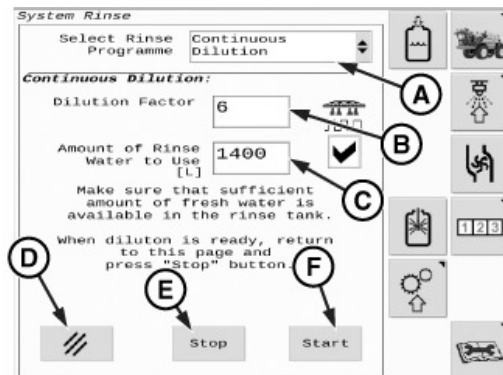
Cancel button (D) stops the selection and returns to the start of the second dilution cycle.

Stop button (E) stops the program and returns to the sprayer - main page.

Start button (F) initiates the start of the program.

Timer settings for messages for the operator are based on the dead volume of the sprayer and the actual spray rate (L/hr).

Working with Continuous Dilution



TG645223—UN—28AUG24

- A—Continuous Dilution
- B—Dilution Factor
- C—Amount of Rinse Water to Use
- D—Cancel Button
- E—Stop Button
- F—Start Button

IMPORTANT: Before commencing the Continuous Dilution (A) process, spray the solution tank empty until air comes out of the spray lines.

Procedure for Dilution Factor 0 or 1

Set 0 or 1 for the Dilution Factor (B) and the process bypasses the single cycle-controlled dilution of the solution tank content. The process directly adds water to the solution tank via the rinse nozzles and the operator is asked to spray out the solution while the dilution

continues. The spray out dosage is high at the beginning of spraying out.

1. Make sure that the solution tank has been sprayed empty until air comes out of the spray lines.
2. Enter system rinse on the GreenStar™ display and select rinse program option Continuous Dilution (A).
3. Enter a Dilution Factor (B) of 0 or 1 and the Amount of Rinse Water to Use (C) (in liters), and press Start (F).
4. Follow the messages on the display to maintain the Continuous Dilution (A) process.

Messages displayed on sprayer - main page during the process (in no particular order) and the actions required:

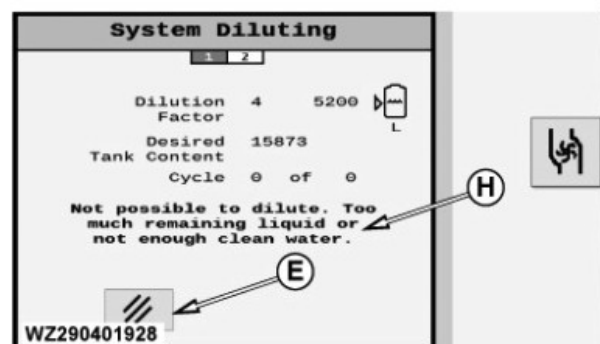
- Message displayed: NOT ALL SECTIONS OPEN or INCOMPLETE DILUTION - Enable all sections.
- Message displayed: CONTINUOUS DILUTION IS ACTIVE - No action required.
- Message displayed: OPEN MASTER TO SPRAY - Open master valve and spray out.
- Message displayed: CLOSE MASTER TO ALLOW DILUTION - Close master valve.
- Message displayed: TANK LEVEL INCREASING or VERIFY RATE/SPEED - Increase the speed or spray rate, solution tank filling rate faster than spraying out flow rate.
- Message displayed: TANK LEVEL DECREASING - VERIFY RATE/SPEED - Decrease the speed or spray rate; solution tank filling rate slower than spraying out flow rate.



APY64341—UN—09JUL21



APY64342—UN—09JUL21



APY64343—UN—09JUL21

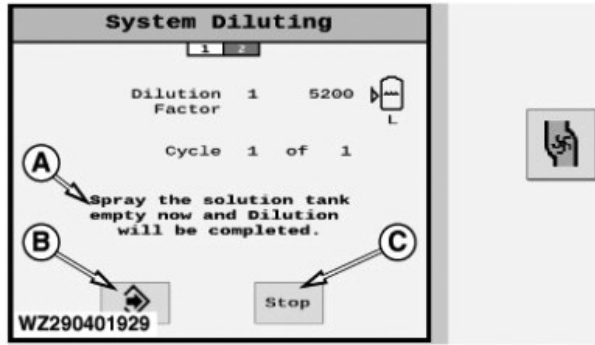
E—Cancel Button
H—Message

5. The operator decides when the machine is rinsed. Enter the system rinse to cancel the operation (job settings, then select system rinse) and press the Stop (F) button. The sprayer - main page appears with the message DILUTION PUMP STOPPED which confirms that the dilution process is now inactive.

Procedure for Dilution Factor 2 or Higher

Set 2 or higher for the Dilution Factor and the process starts with the single cycle-controlled dilution of the solution tank content first. Once the single cycle-controlled dilution is complete, the process goes on with continuous dilution. The spray out dosage is controlled by the operator at the beginning of spraying out.

1. Make sure that the solution tank has been sprayed empty until air comes out of the spray lines.
2. Enter system rinse on the GreenStar™ display and select rinse program option continuous dilution.
3. Enter the parameters for Dilution Factor and Amount of Rinse Water to Use and press Start.
4. If the desired Dilution Factor is applicable, a message is shown on the System Diluting screen. The field Desired Tank Content shows how many liters are needed from the rinse water tank to run the calculated cycle. To enter the single cycle, press Start.



APY64344—UN—09JUL21

A—Message
B—Enter Button
C—Stop Button

5. The cycle commences and the remaining quantity in the system is diluted to the Dilution Factor set at the beginning of the program.
6. After finishing the single cycle the diluted solution in the tank has to be sprayed out by the operator. A message (A) "Spray the solution tank empty now a Dilution will be completed", on the System Diluting screen prompts the operator to do this. Open the master valve to spray the solution completely.
7. Push the Enter button to confirm spraying out solution. The dilution process now continues while spraying out. The dilution factor at this point cannot be controlled by the operator.
8. Follow the messages on the display to maintain the Continuous Dilution process.

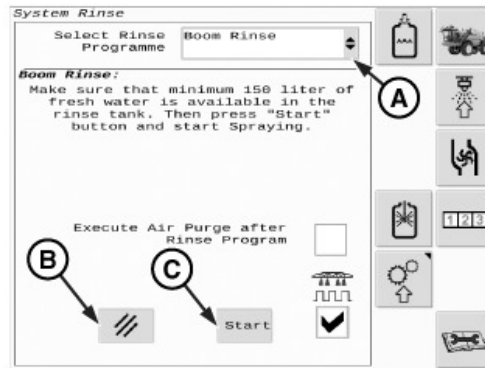
Messages displayed on sprayer - main page during the process (in no particular order) and the actions required:

- Message displayed: NOT ALL SECTIONS OPEN - INCOMPLETE.
 - Message displayed: DILUTION - Enable all sections.
 - Message displayed: CONTINUOUS DILUTION IS ACTIVE - No action required.
 - Message displayed: OPEN MASTER TO SPRAY - Open master valve and spray out.
 - Message displayed: CLOSE MASTER TO ALLOW DILUTION - Close master valve.
 - Message displayed: TANK LEVEL INCREASING - VERIFY RATE/SPEED - Increase the speed or spray rate, solution tank filling rate faster than spraying out flow rate.
 - Message displayed: TANK LEVEL DECREASING - VERIFY RATE/SPEED - Decrease the speed or spray rate; solution tank filling rate slower than spraying out flow rate.
9. The operator decides when the machine is rinsed. Enter the system rinse to cancel the operation (job settings, then select system rinse) and press the Stop button. The sprayer - main page appears with the

message DILUTION PUMP STOPPED, to confirm that the dilution process is now inactive.

Working with Boom Rinse

IMPORTANT: A minimum of 150 liters of clean water must be contained in the rinse water tank.

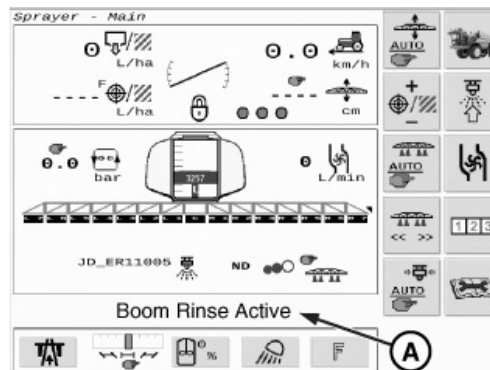


TG645224—UN—28AUG24

A—Boom Rinse
B—Start Button
C—Cancel Button

In the operation Boom Rinse (A), there is a calculated amount of clear water drawn and sprayed out through the nozzles of the boom. In this way, the boom can be rinsed without diluting the solution in the tank. Agitation and circulation are disabled. For the program Boom Rinse (A), there are no settings for the operator to make. The remaining dead volume for every boom option is already entered in the factory settings. One or more electric valves for return, suction, and agitation are set automatically.

1. Enter system rinse on the display, and select rinse program option Boom Rinse (A).
2. Push Start (B), to start the function; open the master valve, and the electric valves move automatically to the correct position. The spray out dosage is high at the beginning of spraying out.



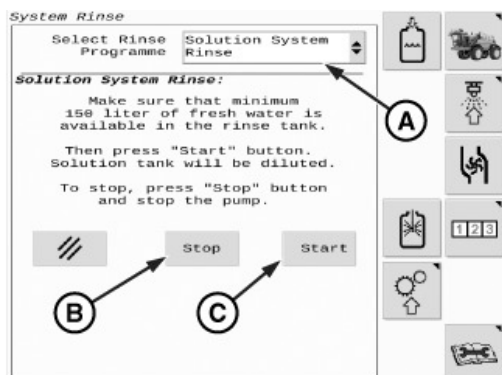
TG645225—UN—28AUG24

A—Boom Rinse Active

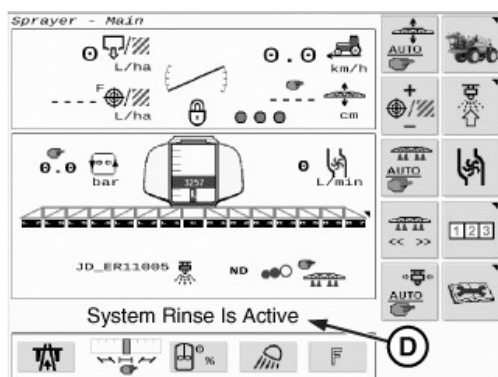
The display shows when the Boom Rinse is operating with the message BOOM RINSE ACTIVE (A). During the rinse cycle, the amount of water is measured with

the flow meter in the boom. After reaching the boom-specified quantity of water, a message BOOM RINSE FINISHED is displayed, at which point the rinse cycle can be canceled. To finish the operation, manually close the master valve on the multi-function control.

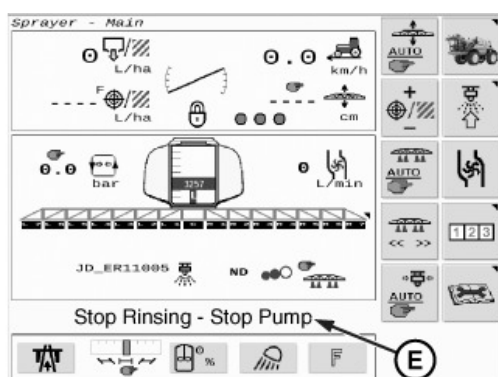
Solution System Rinse Program



TG645226—UN—28AUG24



TG645227—UN—28AUG24



TG645228—UN—28AUG24

- A—Select Solution System Rinse
- B—Stop Button
- C—Start Button
- D—System Rinse is Active
- E—Stop Rinsing - Stop Pump

Spray the solution tank empty until air comes out of the spray lines. For the Solution System Rinse (A) a minimum of 150 liters of clean water should be in the rinse water tank.

The Solution System Rinse (A) is similar to boom rinse but has the additional rinse for the return line from the center frame back to the solution tank and the agitation.

The program rinses the system lines to the nozzles on the boom as well as the solution tank return line. Any contents of the solution tank are diluted to an uncontrolled factor. The rinse nozzles in the solution tank are not used in this program.

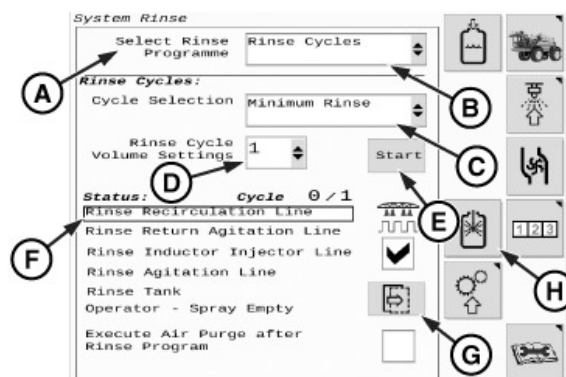
The operator can open the master valve to spray out as well as operate the agitation on/off.

1. Make sure that the solution tank has been sprayed empty until air comes out of the spray lines.
2. Enter System Rinse on the display, and select Solution System Rinse (A) option.
3. Push the Start button (C), to start the function for the Solution System Rinse (A) to start.
4. Follow the messages on the display for the Solution System Rinse (A) process.

Messages displayed on sprayer - main page during the process and the actions required:

- Message displayed: SYSTEM RINSE IS ACTIVE (D) - No action needed.
 - Message displayed: STOP RINSING - STOP PUMP (E) - Press Stop button (B) on system rinse screen and stop the pump.
5. The operator decides when the machine is rinsed. Enter the system rinse to cancel the operation (job settings, then select Solution system rinse) and press the Stop button (B).

Rinse Cycles



TG645229—UN—28AUG24

- A—Select Rinse Program
- B—Rinse Cycle
- C—Cycle Selection
- D—Rinse Cycle Volume Setting
- E—Start Button
- F—Status
- G—Next Button
- H—System Rinse Softkey

NOTE: After liquid has been drained from the solution tank, complete the following steps when using rinse system to rinse entire solution system or only the boom assembly.

1. Select the System Rinse softkey (H) to open the system rinse menu.

2. Select the Rinse Cycles (B) in Select Rinse Program (A) field.
3. Select the drop-down box next to Cycle Selection (C) field and choose between:
 - Minimum Rinse
 - Maximum Rinse

NOTE: Maximum rinse consists of two minimum rinse cycles.

4. The drop-down box for Rinse Cycle Volume Settings (D) is used as an offset for the amount of water used for the rinse. Factory setting is 2 (1 uses less water and 3 uses the highest amount of water). The system saves the last used setting in this field.
5. Set the amount of water to use in the field Rinse Cycle Volume Settings (D). A setting from 1 through 3 can be used where 1 is the least amount of water to be used.
6. Selecting Start (E) activates the function.

NOTE: The chosen procedure starts automatically. Status of rinse is shown by the highlighted box next to the active step. Pressing the next button (G) allows the operator to move the system rinse cycle one step down for each time the button is pressed. This allows operator to skip unnecessary steps in the rinse process. At completion of the cycle, the operator is alerted by a message on the display to spray the rinse water. The Start button (E) and stop button toggles between functions. Once the Rinse Cycle (B) has been started, the Start button (E) changes to the Stop button. Pressing the stop button and the button changes to the Start button (E).

Options available in the Status (F) list:

- Rinse recirculation line
 - Rinse return agitation line
 - Rinse eductor injector line
 - Rinse agitation line
 - Rinse tank
 - Operator - spray empty
7. A message appears on the screen depending on which system rinse option has been selected. Carry out the required action.

Start Rinse Cycles on the SCS Panel

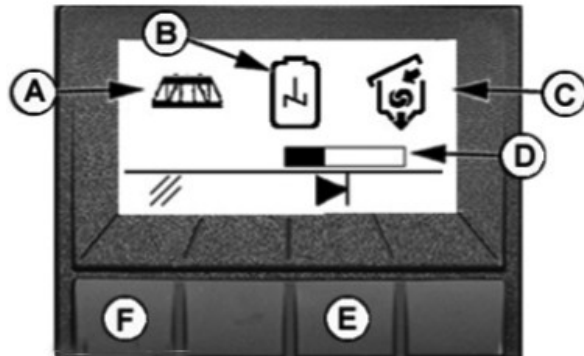


APY64351—UN—09JUL21

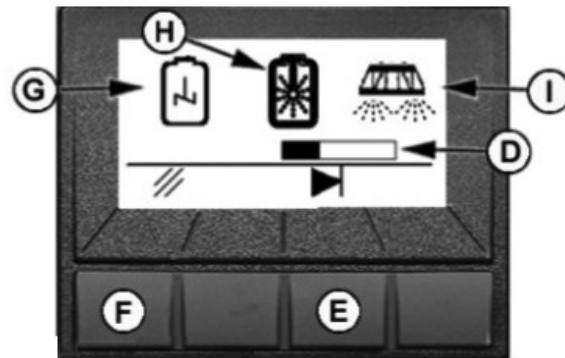
A—System Rinse Button

1. Push the System Rinse button (A). The system rinse cycle starts immediately; this button activates one minimum rinse cycle.

NOTE: Using the System Rinse button (A) performs one system rinse cycle. The setting currently shown on the display in the cap for the rinse cycle volume (low, medium, or high) is used for the rinse cycle.



APY64352—UN—09JUL21



APY64353—UN—09JUL21

- A—Rinse Recirculation Line
- B—Rinse Return Agitation Line
- C—Rinse Injector Line
- D—Rinsing Progress Bar
- E—Skip a Step Button (final two steps only)
- F—Cancel Button
- G—Rinse Agitation Line
- H—Rinse Tank

I—Spray Empty

2. The rinse procedure starts automatically and rinses the following:

- Rinse recirculation line (A)
- Rinse return agitation line (B)
- Rinse injector line (C)
- Rinse agitation line (G)
- Rinse tank (H)

NOTE: The rinsing progress bar (D) on the SCS display screens shows the progress of the rinse procedure.

3. Spray out residual liquid by opening the master valve on the multi-function lever in the cab.

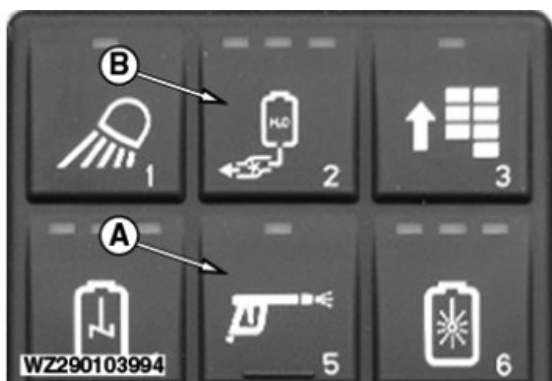
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Wash Brush (If Equipped)

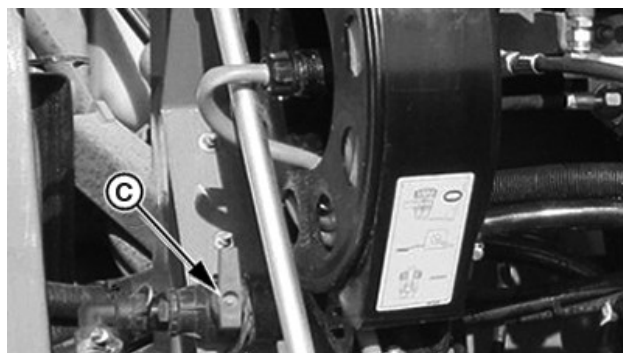
CAUTION: Always wear means of personal protection during cleaning activities.

CAUTION: Before use rinse the spray lines with the boom rinse program from the system rinse menu. Clean water must be in the spray lines for the wash brush use.

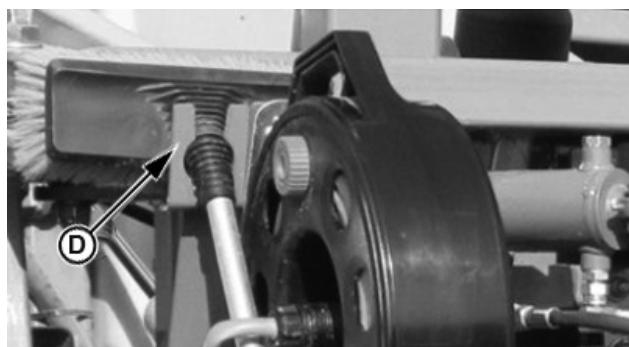
IMPORTANT: Drain water from the hose reel and wash brush for winterization.



APY64357—UN—09JUL21



APY64354—UN—09JUL21



APY64355—UN—09JUL21

- A—Wash Brush Button
- B—Rinse Water Tank Button
- C—Wash Brush Shutoff Valve
- D—Wash Brush Stowage Point

The wash brush has two sources for water use, the solution tank or the rinse water tank. The manual wash brush shutoff valve (C) is located in the solution control compartment.

To use the wash brush:

NOTE: The status of the LED on the rinse tank button (B) shows the selected water source:

- LED OFF: Water from the solution tank is used.
- LED ON: Water from the rinse tank is used.

1. Make the wash brush and hose ready for use.
2. Select the required water source for the wash brush, use the rinse tank button (B) on the keypad.
3. Push the wash brush button (A) on the keypad; the LED on the button turns on.
4. Open the shutoff valve (C) by turning the handle.
5. When washing is complete, close shutoff valve.
6. Push the wash brush button on the keypad; the LED turns off.

NOTE: Drain wash brush hose to prevent freezing at cold weather.

7. Stow wash brush and hose.

KWPZAG2,0000B3E-19-06SEP21

Selecting Steering Mode

S-2C Steering System

CAUTION: Always select 2-wheel steering for road travel.

IMPORTANT: Always bring rear wheels into alignment (straight ahead) before changing the steering mode with switch (A). Failure to do so leads to desynchronization of the wheels that causes an erratic machine steering reaction.

The S2C Steering system is a multi axis steering solution which allows machine to turn in shorter distance. It consists of wheel angle sensor for front and rear wheel, electrohydraulic valve(EHV) with multi-axis steering software(CLS). The sensor readings are sent to N-axis master controller. The data from the front axle is passed to CLS and the electrohydraulic valve through the CAN line to the rear axle which then follows the front axle path.

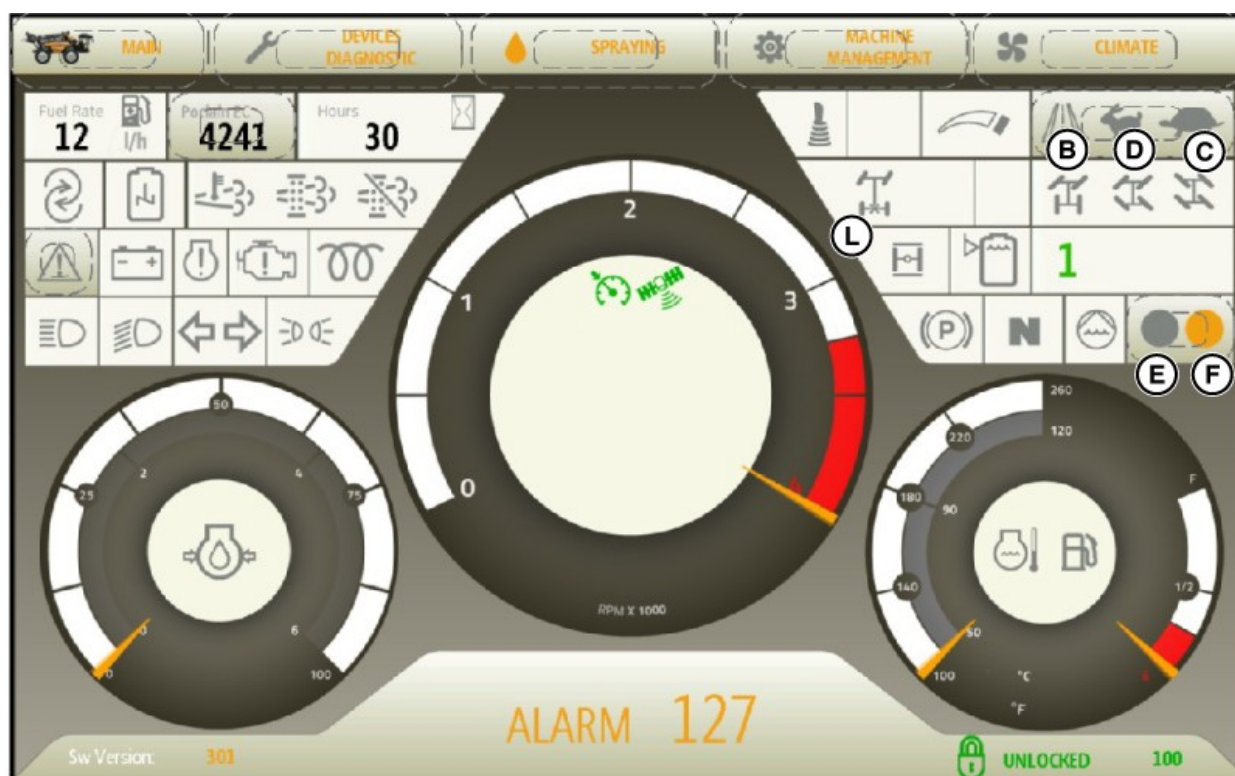
When the machine is shifted to 4-wheel steering option, rear steering will copy the position of the front wheels through the readings coming from wheel angle sensors. Whenever there is a change in front wheels, the rear wheel change accordingly. Hence the rear axle will follow the same path as of the front axle.

When the machine is shifted to 2-wheel steering option, the rear steering will automatically move till it reaches the straight position.



APY64358—UN—09JUL21

A—Selector Switch
1—Crab Steering
2—Front Wheel
3—4-Wheel Steering



TG641927—UN—26JUL24

B—Indicator Light
C—Indicator Light
D—Indicator Light

The selector switch (A) can be used to set three different types of steering:

1. 4-Wheel steering (3). When enabled, the indicator light (D) lights up green.
2. Traditional steering with the front wheels (2). When enabled, the indicator light (B) lights up green.
3. Crab steering (1). When enabled, the indicator light (C) lights up green.

E—Indicator Light (front axle)
F—Indicator Light (rear axle)
L—Indicator Light

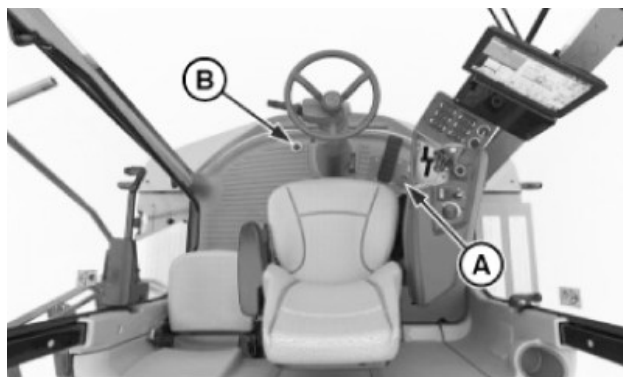
The indicator light (front axle) (E) indicates that the front axle is in the central position.

The indicator light (rear axle) (F) indicates that the rear axle is in the central position.

IMPORTANT: Crab or 4-wheel steering only works in low gears(field mode).

Pressing the foot button while maintaining the steering method does not switch off indicator light (B) or indicator light (D). The selector switch must be changed accordingly.

The indicator light (L) switch OFF only when in road mode the speed of machine is above 30km/hr.



TG659418—UN—03FEB25

A—Differential Lock Switch
B—2-Wheel/4-Wheel Steering Switch

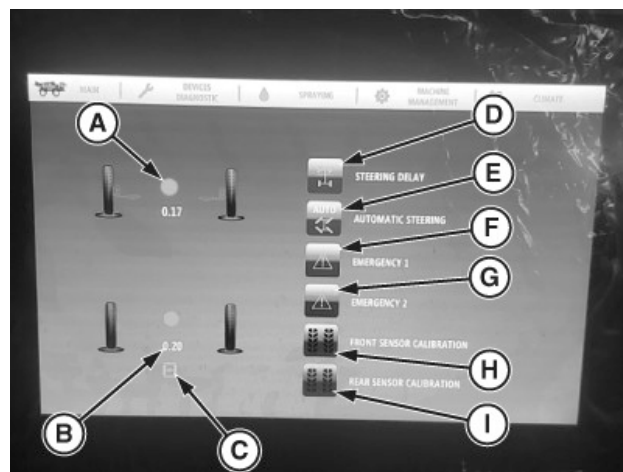
To activate 4-wheel steering in road mode, simultaneously press the differential lock switch (A) and the 2-wheel/4-wheel steering switch (B).

Please note that the speed limit for four-wheel steering in road mode is 14 km/h. A warning will appear on the Tera 10 display as shown.

To deactivate 4-wheel steering, simply press the 2-wheel/4-wheel steering switch (B) again.

The orange indicator light (L) which when ON shows that the rear axle is free from its safety pin.

NOTE: The optional feature of 4-wheel steering in road mode is available for the machine.



TG640731—UN—26JUL24

Steering Screen

A—Front Axle in Central Position Indication Light

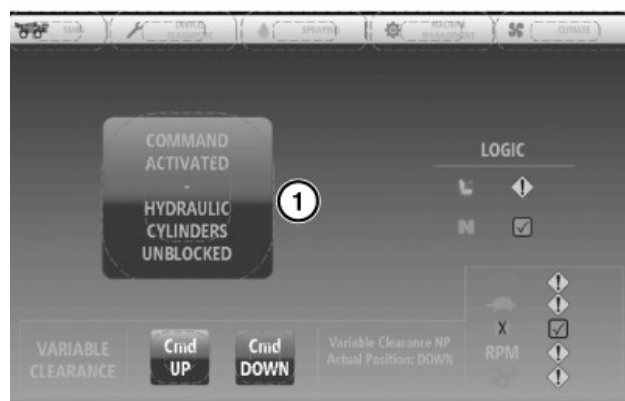
- B—Rear Axle in Central Position Indication Light
- C—Rear Axle Lock Indicator
- D—Not Used
- E—Not Used
- F—Warning Light (active when steering DTC occurs)
- G—Warning Light (active when steering DTC occurs)
- H—Front Sensor Calibration Icon
- I—Rear Sensor Calibration Icon

NOTE: The optional feature of 4-wheel steering in road mode is available for the machine.

To operate 4-wheel steer in road mode, machine speed must be under 10km/hr. Turn selector to position 3 and press the foot switch(H) and differential lock switch simultaneously to enter 4-wheel steer mode.

Hydraulic Tread Adjustment

CAUTION: In order to execute tread settings it is necessary to adhere the logic represented on the right side as follows:



TG640730—UN—26JUL24

1—Icon (green icon indicates axle is unlocked)

- 1.Operator must not be seated.
- 2.Machine in the NEUTRAL position.

Select the inner part of icon(1), then it turns into green. After this, make sure that machine is lifted for executing the tread adjustments.

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Changing Speed

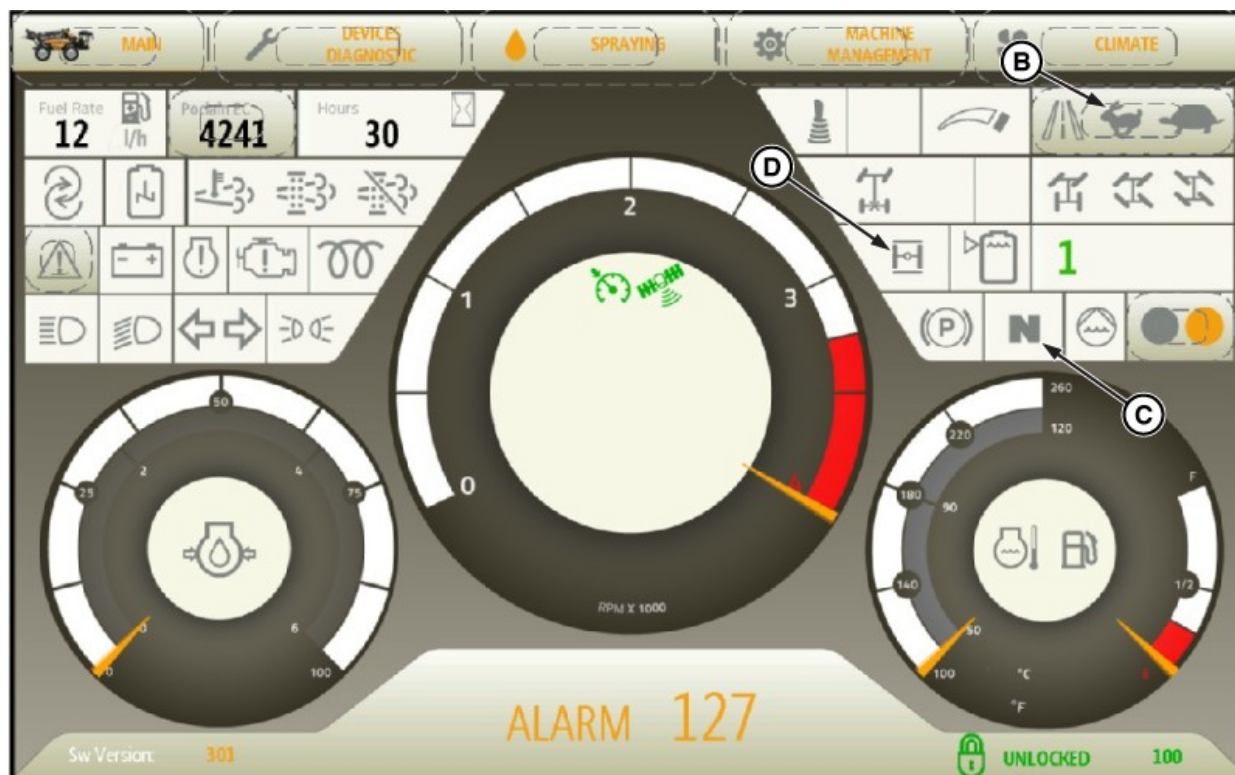
Machine with MS08 HF and MHP11 Transmission

IMPORTANT: If the speed change command does not occur due to the lack of any of the conditions listed below, when the missing condition is restored, the speed is not changed automatically. Button (A) must be pressed again.

NOTE: The speed change process is same for machine equipped with MS08 HF and MHP11 transmission.



TG640347—UN—12JUL24



TG641928—UN—26JUL24

A—Button

B—Indicator Light

Press the button (A) to select the machine forward speed in road mode (fast mode), indicator (B) turns green.

In order to enable the fast speed, it is necessary to meet the following conditions:

C—Control Lever Neutral Indicator Light

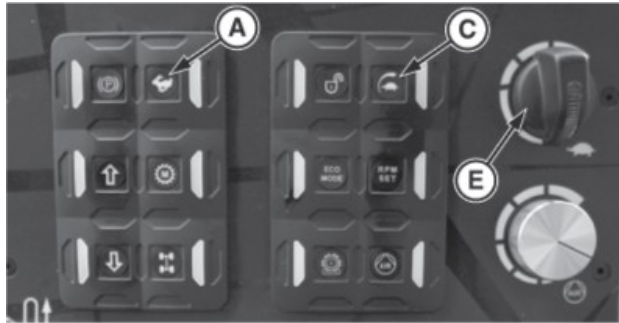
D—Rear Axle Lock Indicator Light

- Control lever in the NEUTRAL central position (indicator light (C) lights up green).
- Select front wheel steering option on CommandARM™ and press the foot switch for steering.

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Slow Motion Function

CAUTION: The slow motion function is disabled by pressing button (C) but actually takes place when the control lever is moved to the NEUTRAL position.



TG640348—UN—12JUL24



TG641929—UN—26JUL24

- A—Button
B—Indicator Light
B'—Indicator Light
C—Slow Motion Function (ON/OFF) Button

The slow motion function reduces the maximum speed range of the lower speed, keeping the entire stroke of the control lever to enable the operator to work at low speeds while maintaining good forward movement management. Slow motion function can be activated only in field mode.

In order to enable the slow motion function, it is necessary to meet the following conditions:

- Operator properly seated on the seat.
- Control lever in the NEUTRAL central position (indicator light (H) lights up green).
- Slow gear (field mode) activated by button (A) (indicator light (B) off, indicator light (B') green).

The slow motion function is activated by pressing button (C) (indicator light (S) lights up green).

- H—Indicator Light
S—Indicator Light
E—Potentiometer

The speed of the machine can be adjusted using the potentiometer (E) (from 0 to maximum).

To change from field mode to road mode move the multi function lever in NEUTRAL position and press the button (A).

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Adjusting the Suspension

CAUTION: The suspension must be adjusted while the machine is empty. It is strictly forbidden to use the machine while the suspension is fully raised or lowered.

The machine has hydraulically adjustable suspension that allows you to make it more comfortable to use the

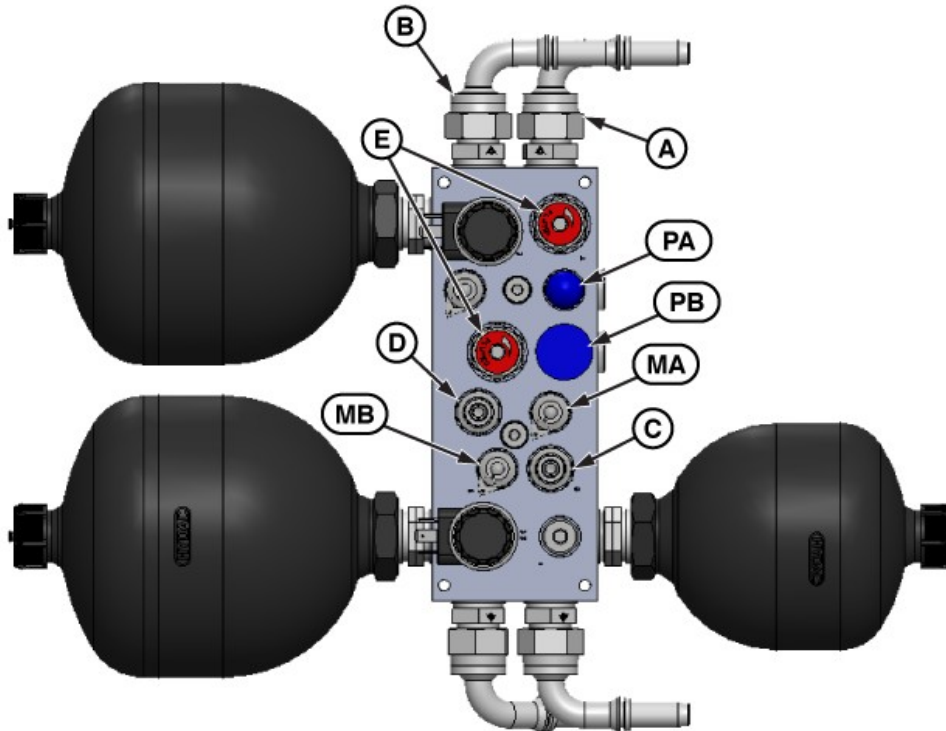
machine, it is advisable to only make adjustments for strictly indispensable reasons such as lowering the height of the machine for transport on trailers. In any case, return to the correct setting before using the machine again.

The fundamental conditions necessary in order to proceed with the adjustment of the suspension are as follows:

- Park machine on a flat, level surface with attachments lowered to the ground

- Parking brake not engaged
- Main tank and washing tank empty
- If equipped, booms in the transfer position (closed and resting on the relative chassis)
- Forward lever in the NEUTRAL position
- No operator in the driving cab to prevent accidental movement

Front Suspension



TG621270—UN—18APR24



TG621271—UN—26APR24

- A—Oil Supply Line
- B—Oil Supply Line
- C—Bypass Line
- D—Bypass Line
- E—Operating Knob
- F—Power Outlet
- G—Main Switch
- H—Quick Coupler
- I—Potentiometer
- J—Push Button
- K—Cable
- MA—Pressure Gauge
- MB—Pressure Gauge
- PA—Coupling
- PB—Coupling



TG621272—UN—26APR24

CAUTION: To carry out the procedure correctly, once the desired height or pressure is reached, it is recommended to stop pressing the button only after closing the taps.

CAUTION: If there are not 95 bar (± 5 bar) for MAF 32 and 90 bar (± 5 bar) for MAF 40 in pressure gauge (MB), it is necessary to repeat the entire procedure.

1. Connect the flexible pipes supplied with the quick couplings (H) on the left side of the machine, and the couplings (PA) and (PB) on the hydraulic suspension block on the front side of the machine.
2. Connect cable (K) of the remote control to power outlet (F).
3. Switch ON the main switch (G).
4. Open the bypass lines (C) and (D).
5. Fully open the manual tap lines (A) and (B) of the block by the operating red knob (E). Suspension cylinders are automatically moving down.
6. Connect two pressure gauges to the block lines (MA) and (MB). Gauges should display zero readings while the suspension goes down.
7. Set the engine RPM to 1600 by potentiometer (I).
8. Press push button (J) UP on the remote to lift the cylinder until the gauge shows a reading of 190 bar (± 5 bar line MB).

9. Press push button (J) DOWN on the remote to lower the cylinder until the gauge shows a reading of 190 bar (± 5 bar line MA).
10. Repeat these steps 3 to 5 times to eliminate the air from the suspension cylinders.
11. Close the manual tap line (B) using operating red knob (E).
12. Press push button (J) UP on the remote to lift the cylinder to 95 mm, and the gauge shows a reading of 95 bar (± 5 bar line MB).
13. Close the manual tap line (B) using operating red knob (E).
14. Press push button (J) DOWN on the remote to lower the cylinder to 65 mm. The gauge pressure is not required for lowering.
15. Close the bypass lines (D) and (E).
16. Disconnect the hydraulic pipes and remote from the system and move back to normal engine RPM.

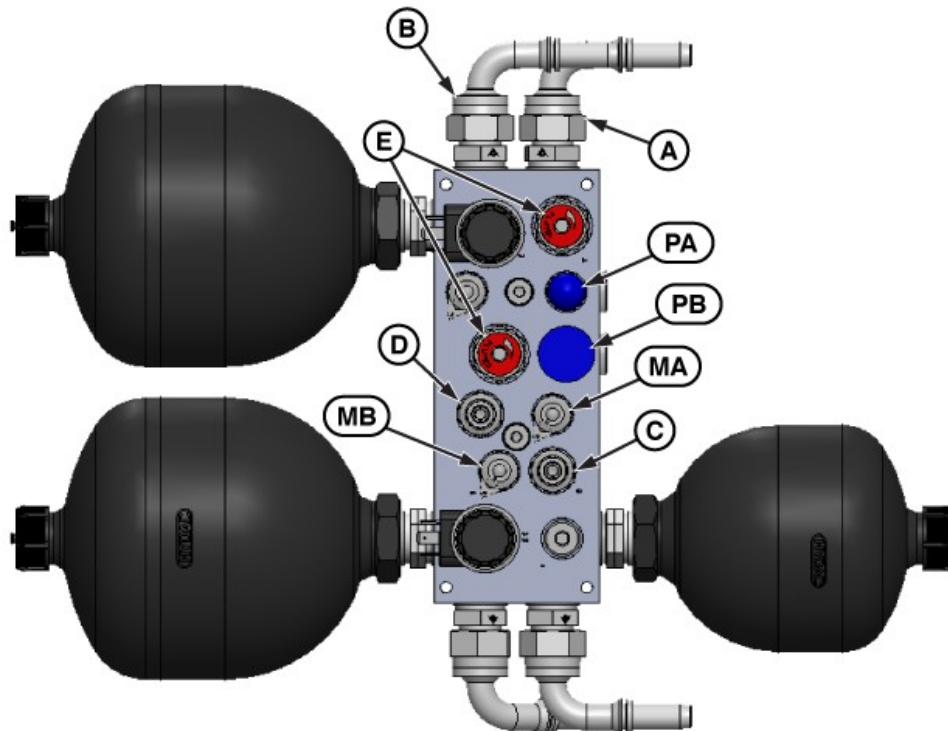
Pre-Charging Accumulators (front suspensions)

- The accumulator of line (A) has a capacity of 0.75 liter and a pre-charge value of 30 bar.
- The accumulators of the line (B) have a capacity of 1.4 liters of each and a pre-charge value of 70bar.

Rear Suspension

⚠ CAUTION: To carry out the procedure correctly, once the desired height or pressure is reached, it is recommended to stop pressing the button only after closing the taps.

⚠ CAUTION: If there are not 100 bar (± 5 bar) for MAF 32 and 105 bar (± 5 bar) for MAF 40 in pressure gauge (MB), it is necessary to repeat the entire procedure.



TG621270—UN—18APR24



TG621271—UN—26APR24

A—Oil Supply Line
B—Oil Supply Line
C—Bypass Line
D—Bypass Line
E—Operating Knob
F—Power Outlet
G—Main Switch
H—Quick Coupler
I—Potentiometer
J—Push button
K—Cable
MA—Pressure Gauge
MB—Pressure Gauge
PA—Coupling
PB—Coupling



TG621272—UN—26APR24

1. Connect the flexible pipes supplied with the quick couplings (H) on the left side of the machine, and the couplings (PA) and (PB) on the hydraulic suspension block on the right side of the machine.
2. Connect cable (K) of the remote control to power outlet (F).
3. Switch ON the main switch (G).
4. Open the bypass lines (C) and (D).
5. Fully open the manual tap lines (A) and (B) of the block by the operating red knob (E). Suspension cylinders are automatically moving down.
6. Connect two pressure gauges to the block lines (MA) and (MB). Gauges should display zero readings while the suspension goes down.
7. Set the engine RPM to 1600 by potentiometer (I).
8. Press push button (J) UP on the remote to lift the cylinder until the gauge shows a reading of 190 bar (± 5 bar line MB).
9. Press push button (J) DOWN on the remote to lower the cylinder until the gauge shows a reading of 190 bar (± 5 bar line MA).
10. Repeat these steps 3–5 times to eliminate the air from the suspension cylinders.
11. Close the manual tap line (B) using operating red knob (E).
12. Press push button (J) UP on the remote to lift the

cylinder to 95 mm, and the gauge shows a reading of 100 bar (± 5 bar line MB).

13. Close the manual tap line (A) using operating red knob (E).
14. Press push button (J) DOWN on the remote to lower the cylinder to 65 mm. The gauge pressure is not required for lowering.
15. Close the bypass lines (D) and (E).

16. Disconnect the hydraulic pipes and remote from the system and move back to normal engine RPM.

Pre-Charging Accumulators (rear suspensions)

- The accumulator of line (A) has a capacity of 0.75 liter and a pre-charge value of 40 bar.
- The accumulators of the line (B) have a capacity of 1.4 liters and a pre-charge value of 70 bar for MAF 32 and 80 bar for MAF 40.

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Adjusting the Tread width (Automatic Axles)

The front and rear tracks of the machine can be adjusted.

Adjusting the Narrow or Wide Axle — Automatic Movement

CAUTION: It is forbidden to use the machine without the safety pins inserted.

IMPORTANT: It is recommended to pressurize the automatic axle circuit twice a day.

IMPORTANT: For good operation of the automatic axle movement system, the extractors must be free from soil or debris and well greased.

IMPORTANT: While narrowing the axles, the wheels do not move in an almost parallel manner, take care to stop the closing movement, widen the track as far as possible, check for obstructions and remove them, and make a new closing attempt.

IMPORTANT: Before considering the operation of variation of the roadway make sure that the correct alignment of the four wheels is restored to prevent abnormal wear of the tires. If improper alignment is encountered again, please repeat the operation of variation of the roadway.

IMPORTANT: The track must only be changed using the extendable axle parts. Any other method, such as the reversal of the wheels, is strictly prohibited.

The fundamental conditions necessary in order to proceed with the automatic adjustment of the track are as follows:

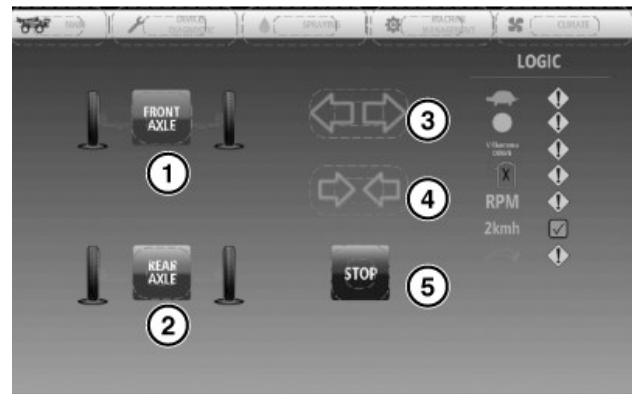
- Reduced gear activated.
- Tank Empty.
- Diesel engine running at 1900 rpm must be set with RPM SET button on CommandARM™
- Slow motion function must be OFF.

- If present, booms closed and in the rest position resting on the relative chassis.
- Operator sitting on the driving seat with seat belt fastened.
- Two front wheel-steering on axles.
- Rear wheels in the center.

It is also recommended that:

- The ground is flat, evenly load-bearing, and free from obstructions for at least 30 meters.
- The ground is not paved.

Once the conditions mentioned have been fulfilled, proceed as follows:



TG640729—UN—26JUL24

- 1—Option (front axle)
- 2—Option (rear axle)
- 3—Arrow
- 4—Arrow
- 5—Stop

- Move the travel lever forward or backward until it reaches a minimum speed of 5 Km/h.
- Select front axle pressing option (1).
- Open track by utilizing the arrows (3) or close tracks with arrows (4).

Adjusting the Tracks

The front and rear tracks of the machine can be adjusted for both a narrow and a wide axle.

Each wheel can be adjusted independently manually or hydraulically according to the Ordered configuration.

Adjusting the Narrow Axle — Hydraulic Movement

⚠ CAUTION: The hydraulic jack has block valves that prevent a sudden loss of load. Disconnecting it from the quick couplings, it remains locked in place.

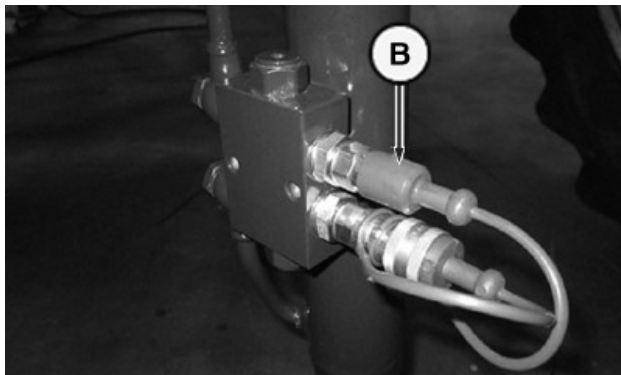
The fundamental conditions necessary in order to proceed with the adjustment of the track are as follows:

- External general button (G) in the ON position.

Proceed as follows:



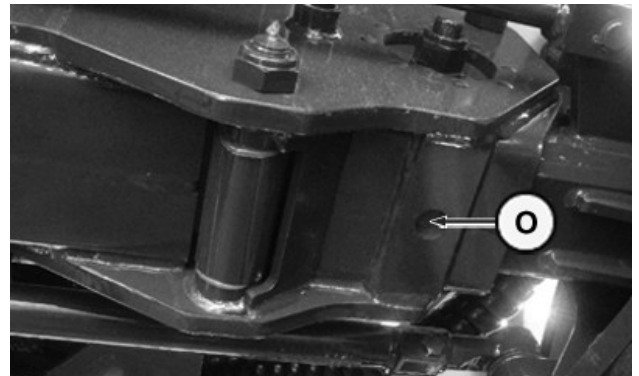
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TG526529—UN—13DEC21



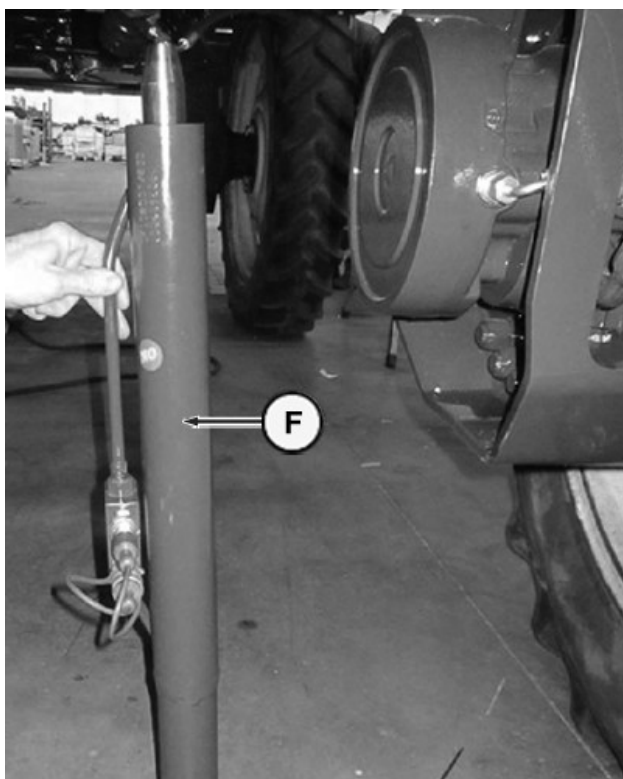
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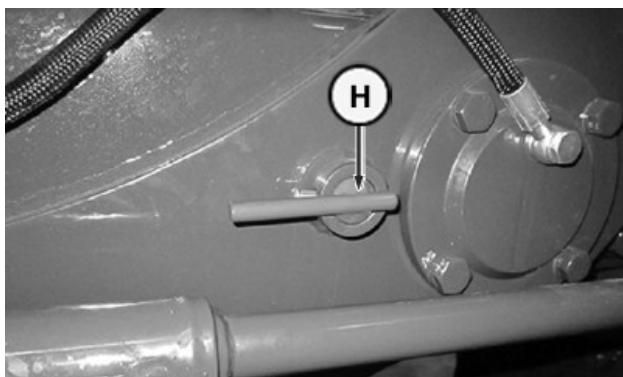
TG526531—UN—13DEC21

A—Quick Coupler
B—Hydraulic Jack Port
E—Power Outlet
G—General Button

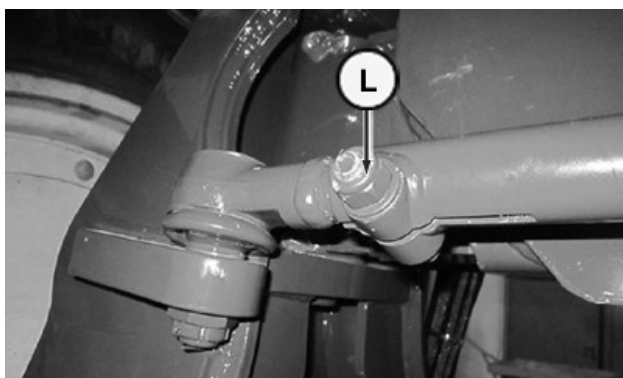
- Machine on flat, evenly load-bearing ground.
- Diesel engine running at about 1300 rpm.
- Control lever in the NEUTRAL position (N green indicator light on).
- Parking brake engaged (P red indicator light on).
- No operator in the driving cab to prevent accidental movement.



TG526533—UN—13DEC21



TG526532—UN—15DEC21



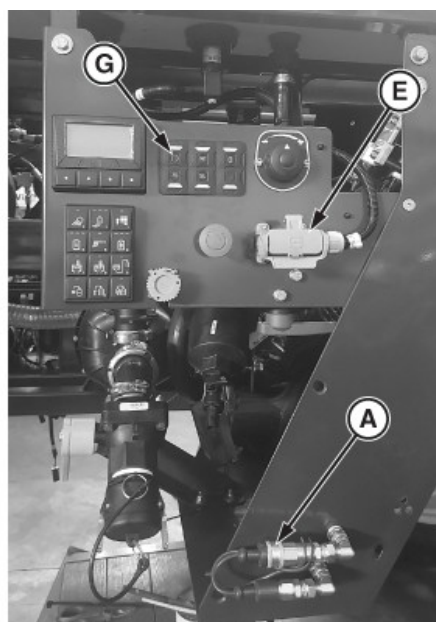
TG526534—UN—13DEC21

C—Cable
D—Push Button Panel
F—Hydraulic Jack
H—Safety Pin
L—Cap Screw
O—Stem Head

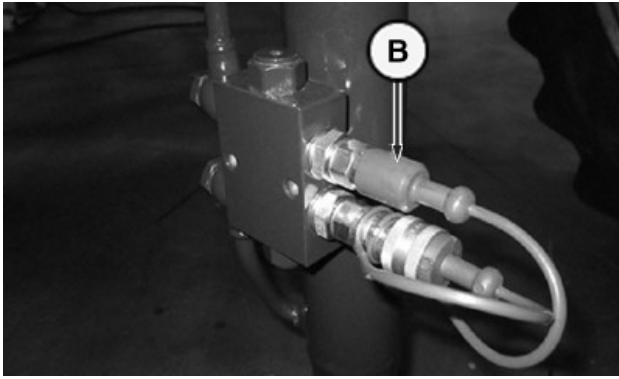
- Connect the hoses supplied to the quick couplings (A) on the right-hand side of the machine and to the hydraulic jack port (B).
- Connect the cable (C) on the push-button panel (D) to the outlet (E).
- Place the hydraulic jack (F) on the ground, on the side to be lifted.
- Use the push-button panel (D) to control the extraction of the hydraulic jack (F) until the stem head centered on the hole (O).
- Continue to extract the Stem of the jack until lifting the wheel from the ground by about 10 cm (4 in).
- Remove the safety pin (H).
- Remove the cap screw (L) from the extractable part.
- Use the push-button control (D) to control the widening or return of the track.
- When alignment has been achieved, insert the safety pin (H) and the cap screw (L).
- Repeat the steps on all the wheels to be moved.

Adjusting the Wide Axle — Hydraulic Movement

The fundamental conditions necessary in order to proceed with the adjustment of the track are as follows.



TG598862—UN—24OCT23



TG526529—UN—13DEC21

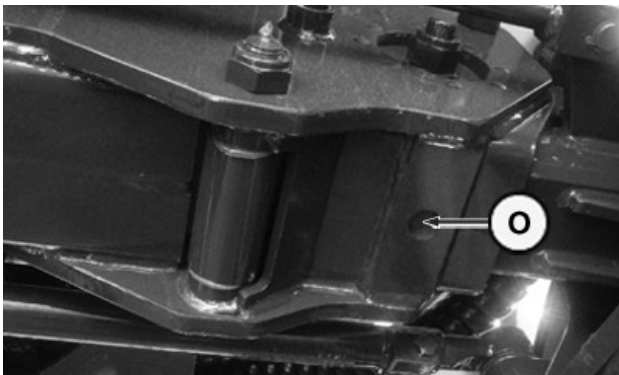
A—Quick Coupler
B—Hydraulic Jack Port
E—Power Outlet
G—General Button

- Machine on flat, evenly load-bearing ground
- Diesel engine running at about 1300 rpm.
- Control lever in the NEUTRAL position (**N** green indicator light on).
- Parking brake engaged (**P** red indicator light on).
- External general button (G) in the ON position.

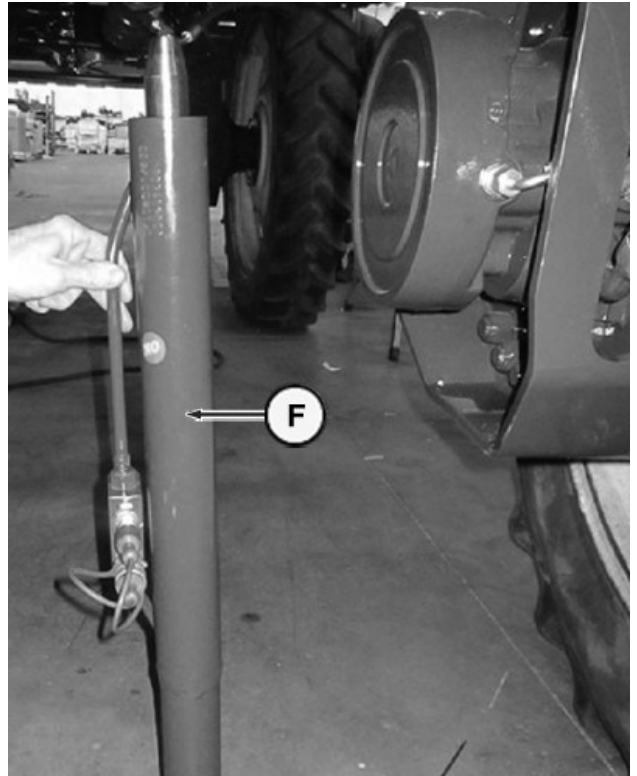
Proceed as follows:



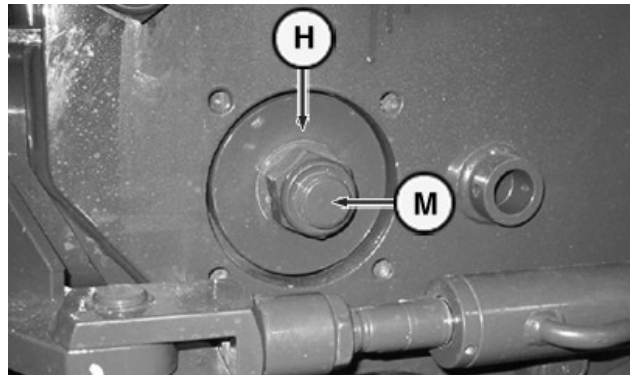
TG598863—UN—24OCT23



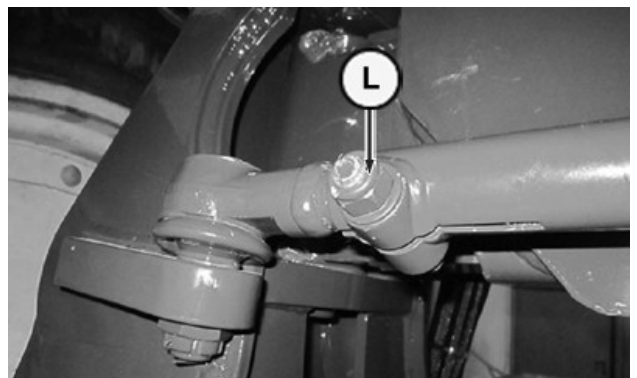
TG526531—UN—13DEC21



TG526533—UN—13DEC21



TG527584—UN—13DEC21



TG527583—UN—13DEC21

C—Cable
D—Push-button Panel
F—Hydraulic Jack
H—Safety Pin
L—Cap Screw
M—Bolt
O—Stem Head

- Connect the hoses supplied to the quick couplings on the machine, on the right-hand side (A), and on the hydraulic jack port (B).
- Connect the cable (C) on the push-button panel (D) to the outlet (E).
- Deposit the hydraulic jack (F) on the ground, from the side to be lifted.
- Use the push-button panel (D) to control the extraction of the hydraulic jack (F) until the stem head is centered on the hole of stem head (O).
- Continue to extract the stem of the jack until lifting the wheel from the ground by about 10 cm (4 in).
- Remove the bolt (M) and the mechanical safety locking device (H).
- Remove the cap screw (L) from the extractable pan.

- Use the push-button control (D) to control the widening or return of the track.
- When alignment has been achieved, insert the mechanical safety locking device (H) and secure it using its bolt (M) and cap screw (L).
- Repeat the steps on all the wheels to be moved.

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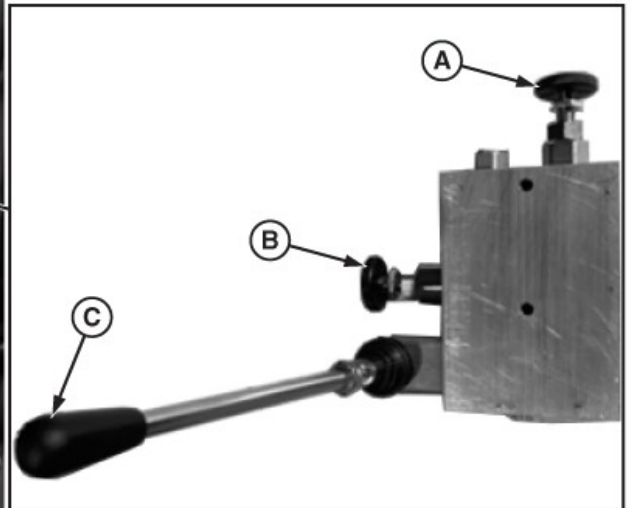
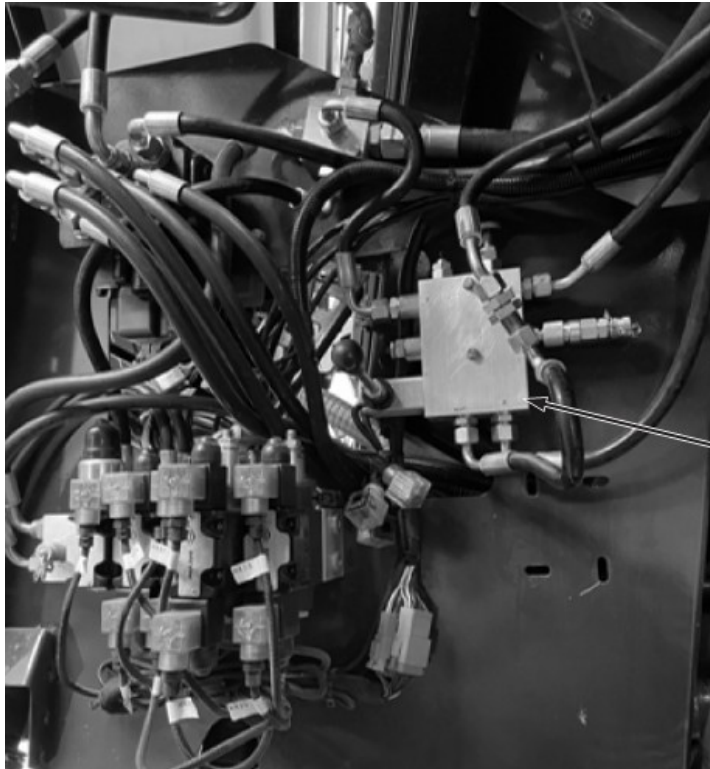
Releasing the Parking Brake

Machines with MHP11 Transmission Motors

In order to tow the machine, it is necessary to unlock it as follows:



TG641936—UN—26JUL24



TG598850—UN—23OCT23

A—Knob
B—Knob

C—Hand Lever

- Open the access panel on left hand side of the machine.
- Turn knob (B) counterclockwise.
- Turn knob (A) clockwise until it is fully tightened.
- Use the hand lever (C) to pump until the brakes are released

To restore normal operation:

- Turn the knob (A) counterclockwise and wait a couple of minutes.
- Turn knob (B) clockwise to close the the valve.

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MSpray System

MSpray System Composition

Pump

The **MAF 32/MAF 40** series sprayer has a centrifugal pump for the solution system with a capacity at 3 bar of 750 L/min or optional 1000 L/min. A second centrifugal pump is used to fill the solution tank with a maximum flow of 1200 L/min. The pumps are located behind the front left access panel near the drawbar. Both pumps are driven with hydraulic motors which are connected to the hydraulic flow regulator mounted on the drawbar.

Suction Unit

The suction unit comprises a suction filter, a filling hose connection, and a drain valve. Different filling hose connections are available such as kamlock (quick release couplings), firebrigade, or B/C-couplings (Storz). All couplings have blind caps.

Hydraulic Flow Control Manifold

The manifold houses or controls the following:

- Solution pump with a compensator and proportional valve to control pump speed using load sensing.
- Filling pump control (proportional to start and stop softly) with a compensator and proportional valve to control pump speed using load sensing.
- Load sense control valve controlled proportionally to adjust jam level based on activated functions.
- Large check valve (in the return line of the pumps) to prevent back flow into the pump motors. The check valve is to protect the pumps when the hydraulic lines are connected incorrectly.
- Each circuit has a screen (serviceable) on the outside of the first cartridge. When the circuit performance is low, one check is to pull the cartridge and make sure that the screen is not blocked with contamination.

Control System

- The control system comprises of the solution command EPM (behind right-hand side door), a hydraulic flow regulator (rear of the drawbar), the valves of the solution command system (behind front left-side access door), and the master/circulation

valve situated on the boom center frame at the rear of the machine.

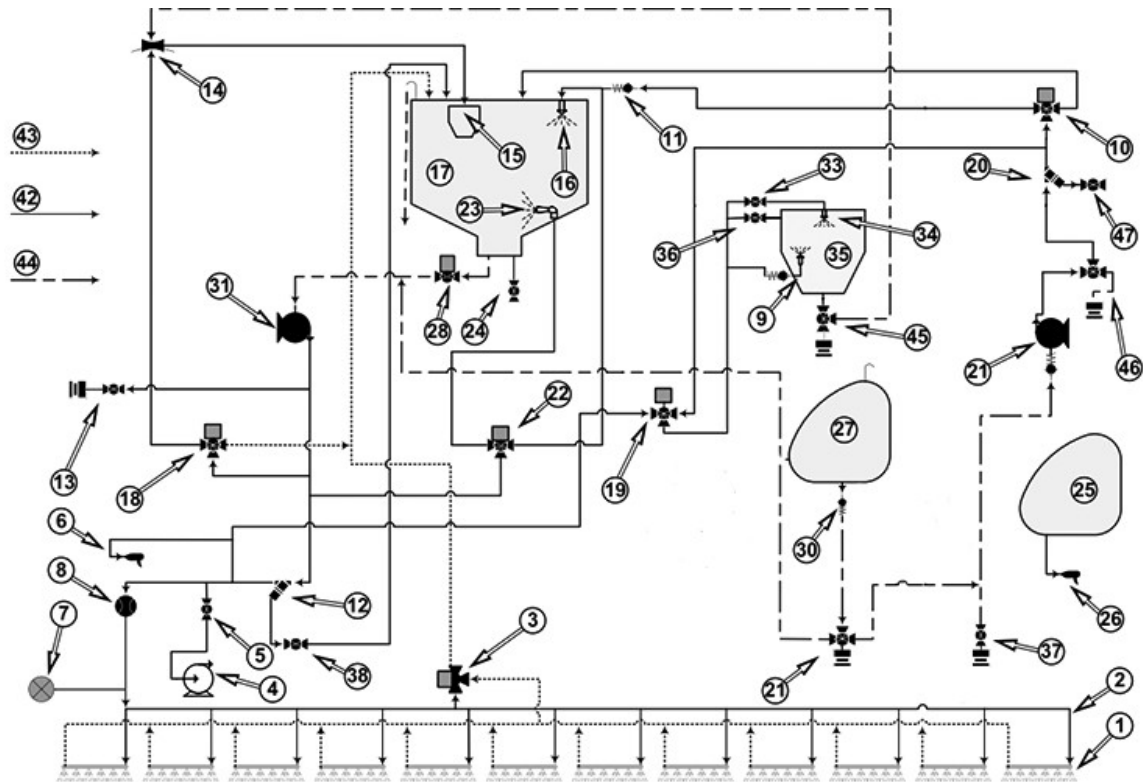
- The pressure filter is fitted to the left front of the machine together with the suction filter.
- The boom section valves are integrated in the spray boom.
- The multi-function lever (MFC) and Gen5 display fitted in the cab are connected to the spray rate control unit via the CAN Bus.
- The application rate control for **MAF 32/MAF 40** series is available with a pressure sensor and flow sensor.
- All these sensors are at the center section of the spray boom.

Spray Boom

- Two ranges of spray booms are available. Double folding booms with working widths ranging from 24 to 30 m and a transport width of 2.55 m.
- Triple-folding booms are available with working widths from 24 to 36 m, and a transport width of 3 m.
- The spray boom has a hydraulic height adjustment with a parallelogram system.
- The spray boom segments are folded/unfolded with two double-acting cylinders per side (left and right).
- The spray boom is fitted with a central pendulum, anti-yaw system, and boom tilt correction.
- Other functions are hydraulic folding/unfolding of the spray boom end segments to spray with a reduced working width, independent folding/ unfolding of the spray boom end segments left and right to spray along obstacles in the field.
- Optionally, variable geometry can be ordered to raise and lower the spray boom arms left and right.
- The spray boom is fitted with stainless steel spray lines, subdivided into a number of sections.
- Single or multiple nozzle holders with various nozzles may be fitted to the spray line.
- The spray lines are fitted with end caps or connections for the recirculation system.

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Functional Diagram—Pressure Circulation System

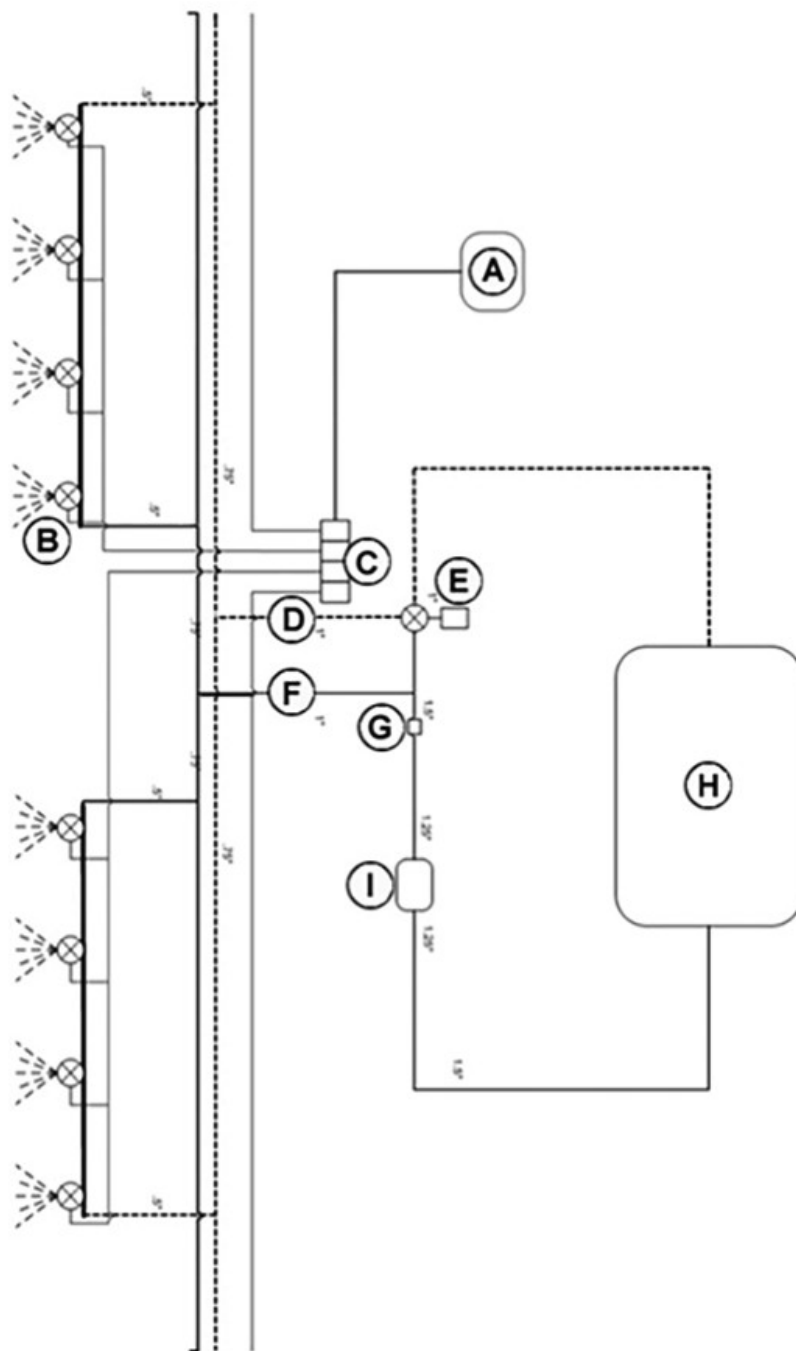


APY65312—UN—31AUG21

- | | |
|---|--|
| 1—Nozzle Section (INC) | 23—Hydro Injectors for Agitation |
| 2—Sprayline | 24—Electric Drain |
| 3—Master/Circulation Valve | 25—Hand Wash Tank |
| 4—Wash Brush And Reel (if equipped) | 26—Drain Tap (hand wash tank) |
| 5—Wash Brush Connection (if equipped) | 27—Rinse Water Tank (with level indicator) |
| 6—Pressure Gauge/Spray Gun Connection | 28—Suction Valve |
| 7—Pressure Sensor | 29—Rinse Water/Solution Tank Valve |
| 8—Flow Sensor | 30—Non-Return Valve (rinse water tank) |
| 9—Rinsing Head in Filling Opening with Tenter (if equipped) | 31—Solution Pump |
| 10—Filling/Rinse Valve | 33—Rinse Nozzle Shutoff Valve |
| 11—Non-Return Valve (tank rinse) | 34—Inductor Rotating Rinse Nozzle |
| 12—Solution Pump Pressure Filter | 35—Chemical Inductor Hopper |
| 13—Solution Tank Pump off Connection with Shutoff Valve (if equipped) | 36—Shutoff Valve (chemical inductor rinse/flush) |
| 14—Injector Chemical Inductor | 37—Solution Tank Filling Valve and Connection |
| 15—Basket Strainer | 38—Solution Pump Filter Drain Valve |
| 16—Tank Rinsing Nozzle | 42—Pressure Line |
| 17—Solution Tank | 43—Suction Line |
| 18—Injector/Return Agitation Valve | 44—Return Line |
| 19—Inductor Rinse Valve | 45—Fill Connection with Valve for Closed Chemical Filling System (if equipped) |
| 20—Filling Pump Pressure Filter | 46—Push Fill Connection (if equipped) |
| 21—Filling Pump (also for the autodilute system) | 47—Pressure Filter Drain Valve |
| 22—Agitation/Tank Rinse Valve | |

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Pressure Circulation Option



APY64492—UN—20JUL21

A—Air from Reservoir Tank
 B—Nozzle with Pneumatic Opening
 C—Air Valve Manifold
 D—Circulation Line
 E—Master/Circulation Valve

F—Feed Line
 G—Pressure Sensor
 H—Solution Tank
 I—Flow Meter

- With this option the sprayer is equipped with an air reservoir, an air valve manifold and pneumatic opening nozzles.
- As soon as the master/circulation valve is switched

on, air is provided to each nozzle body to open the valve, and start spraying.

- When the master/circulation valve is switched off (stop spraying), the air provided to each individual nozzle body is removed from the system and the

spring in the nozzle body closes the membrane sealing it.

- The pressure circulation system with pneumatic operating nozzles allows much higher circulation flow rates at a higher pressure to prevent sedimentation of powder chemicals and granulates and avoid blocked nozzles.
- In spray mode the liquid is provided via the feed line and the return line to both ends of each individual boom section at the same time.
- The charge time is reduced to each section and ensures a quick spray start with the right chemical concentration especially for wide spray booms.
- The master/circulation valve controls whether the system functions as feed line or as circulation line.

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3. Wear a personal protective equipment as required by the chemical label:

- When leaving the enclosed cab into a treated area
- To work with the contaminated application equipment, such as nozzles, which must be cleaned, changed, or redirected
- To become involved with mixing and loading activities

4. Before reentering the cab, remove a personal protective equipment and store either outside the cab in a closed box or some other type of sealable container or inside the cab in a pesticide resistant container.

5. Clean or remove contaminated shoes or clothing before entering the cab.

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Avoid Contact with Chemicals

CAUTION: The enclosed cab does not protect against a chemical exposure, including exposure to pesticides. Refer to the Operator's Manual for further information.



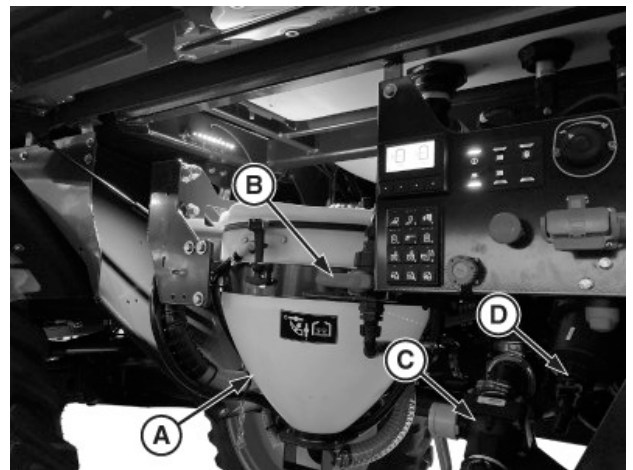
TS220—UN—15APR13



TS272—UN—23AUG88

1. When operating in an environment where harmful chemicals are present, wear a long-sleeved shirt, long-legged trousers, shoes, and socks.
2. If a chemical label requires respiratory protection, wear an appropriate respirator in the cab.

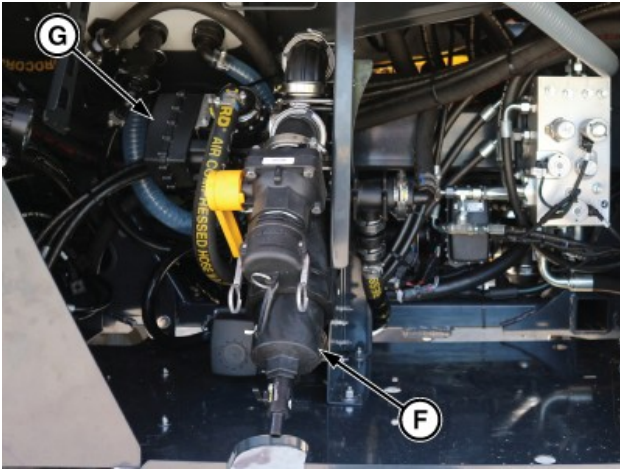
Components of the Solution Command System



TG645232—UN—28AUG24



APY78042—UN—14JUN23



APY78043—UN—14JUN23

- A—Eductor
- B—Eductor Rinse Valve
- C—Filling Inlet
- D—Inlet Strainer
- E—Mspray Fuse box
- F—Pressure Strainer
- G—Venturi Selection Valve/Agitation Valve

The solution command system is located on the front left of the machine.

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The sprayer control system sends the information to the display via the CAN bus system.

The display is located in the cab, on the right front corner post.

NOTE: Not only John Deere displays can be used, but other displays that are compatible with ISO11783. Functionality and features vary from display to display, always consult with the manufacturer.

NOTE: Part of the system must have the Multi-Function Control (MFC) to operate the machine. This device communicates via the CAN-bus to the control system.

Useful information on the following items is available from <http://stellarsupport.deere.com>:

- Gen5 Universal Display
- ISOBUS
- Business Pack
- John Deere Section Control
- Measuring Offsets
- Display Documentation

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MSpray Displays and Control



APY78044—UN—14JUN23

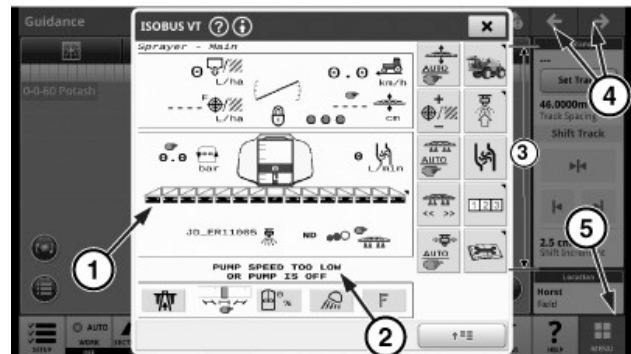
Gen5 Universal Display

The following section provides specifications and operating parameters for the sprayer control system.

The sprayer ISOBUS control system is an electronic module with a general-purpose display and general-purpose control (for example a terminal) that can be used to display a sprayer information.

Its primary purpose is to provide a display head for various sprayer sensors. It has the capability to simultaneously display information from multiple sensors.

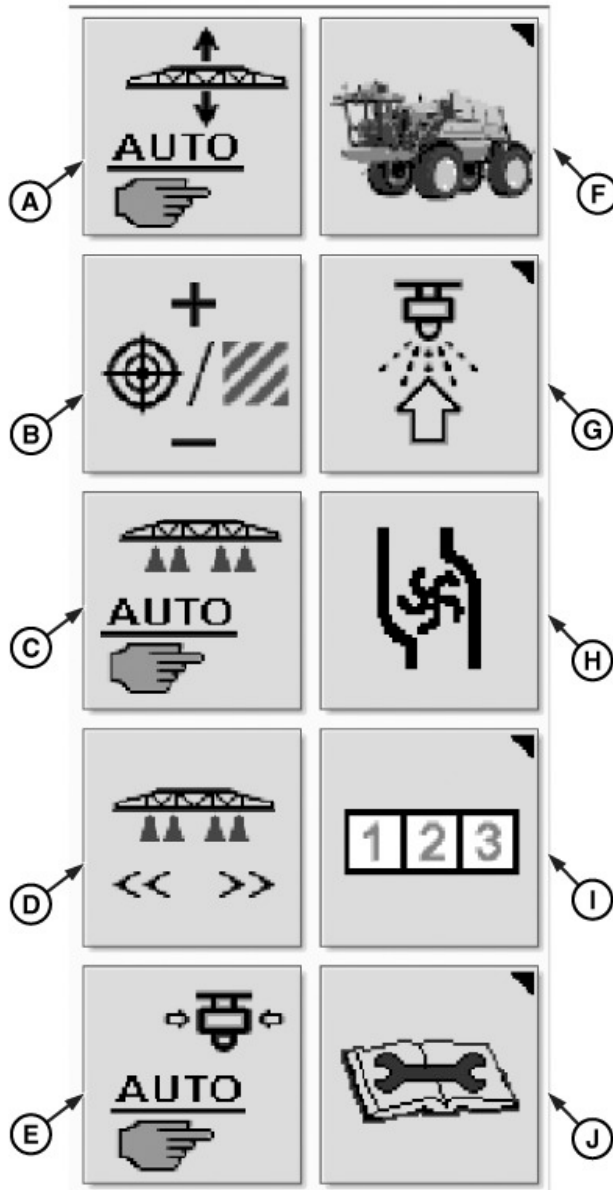
General Information



TG644043—UN—21AUG24

- 1—Display Field
- 2—Message Field
- 3—Menu Field (Softkeys)
- 4—Next or Previous Run Page Buttons
- 5—Application Menu

The display is a multipurpose display with easy-to-use, menu-driven commands, with several information display fields. The page shown in the display field (1) is the standard (default) sprayer main page layout. The layout can be changed to suit the operator needs and requirements via drop-down menus (see **Main Page Layout** in **Machine Settings**.)



- [D] — Section on-off Softkey Layout
- [E] — Regulation Setting Auto/Manual
- [F] — Sprayer Main Page (shown)
- [G] — Job Settings
- [H] — Solution Pump on-off
- [I] — Performance Data
- [J] — Diagnostics

Time Indicator (3) displays the current time.

Next Previous Run Page buttons(4) allows operators to view the Run Pages.

The **Application Menu** (5) shows that the operator a menu list of available applications.

Time indicator (3), **Next Previous Run Page** buttons (4) and **Application Menu** (5) appear on all screens.

Message Field (6) allows the operator to view cautions and warnings while working with the machine. - - - - is displayed when there are no messages.

Screens shown in this documentation may vary from your screens slightly, due to the sprayer configuration, its setup, and the software version.

The application software for the John Deere sprayer is designed for the John Deere Gen5 Universal Displays. A slight variation of the screen layout results with these displays to the contents shown in this documentation.

NOTE: There is **NO** power on-off switch for the display. Power is applied when the machine is turned ON.

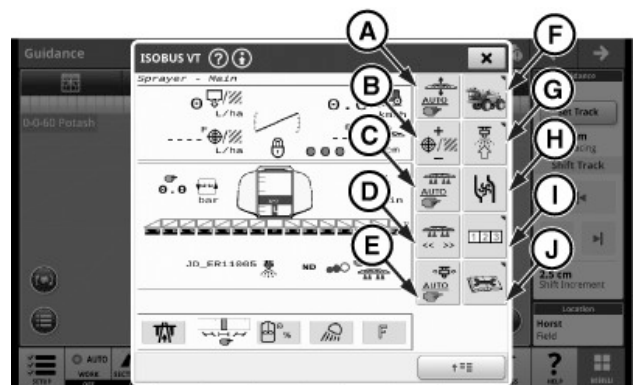
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TG644044—UN—21AUG24
Menu field (2) softkeys navigate to other pages on the display or to control a process. The right-hand softkeys are always visible on the Menu Field when any are selected.

The **Solution Pump on-off** softkey [H] is always visible on the Menu Field in the right-hand column. **Machine Settings** [E] appears in the left-hand column in **Job Settings** [G], **Performance Data** [I], and **Diagnostics** [J] menus.

- [A] — Automatic Boom Control - Auto/Manual
- [B] — Boost Mode
- [C] — Automatic Section on-off (Option)

Sprayer—Main



TG644045—UN—21AUG24

Sprayer - Main can be found by selecting softkey [F] in the **Menu field**.

The layout display for each of the six display fields can be selected from a drop-down menu (see **Main Page Layout** (softkey [A]) in **Machine Settings** (on position of softkey [E])).

The display field also includes information on:

Upper Field of the display area: this will indicate the four selected fields (see **Main Page Layout** in this section) and their status. In the center is the **Boom Roll Indicator**. The indicator shows the status of the boom roll in relation to the sprayer. Manual adjustment of the roll is done by means of the buttons on the Multi-Function Control (MFC).

When in manual mode, softkey [B] **Boost Mode** will not be visible. The lock icon shows the pendulum status. The pendulum lock is operated by means of the button on the MFC.

Middle Field: Tank Level: the current contents of the tank is displayed on the sprayer graphic.

Spray Boom: on the graphic of the boom, all the sections are displayed. When the Master switch is ON, the open sections will show a blue cone to indicate spraying.

Nozzle Selection: the center area shows the current nozzle setting, this can be changed in **Job Settings** softkey [G].

Job Name: In this field, the current spray job can be selected.

Spray Quality: In this field, the current spray quality of the nozzle at the actual pressure (according to the BCPC droplet size classification) is shown during spraying when the data of the nozzle is available in the software.

NOTE: If the actual spray rate is not within the rate of the select spray quality, ND (Not Defined) is display on the screen.

The spray quality can be either **Very Fine, Fine, Medium, Coarse, Extremely Coarse**, or **ND** (Not Defined).

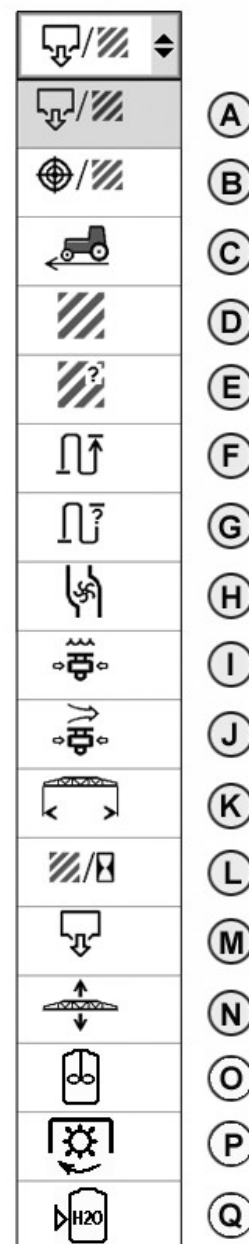
Automatic Section on-off (Option): displays the status of manual or automatic for the function. Pressing softkey [C] toggles the operating state.

Lower Field: From left to right are:

- Transport Lock ON/OFF
- Axle Steering Mode (Option)
- Agitation Status on-off and % of intensity
- Work Lights on-off
- F- Switch (Free Function) on-off (2-pole Metri-pack 280 sealed connector (Delphi). The output is 12 V with a maximum current of 10 A. Example: beacon light and additional lighting).

For further information see Agitation, Work Lights and F-Switch in this section.

Sprayer - Main Symbol List



WZ290401581

WZ290401581—UN—08DEC11

Display Selection

- A—Applied Rate
- B—Target Rate
- C—Current Speed
- D—Sprayed Area
- E—Remaining Area
- F—Sprayed Distance
- G—Remaining Distance
- H—Actual Flow Rate
- I—Liquid Pressure
- J—Air Pressure
- K—Spray Boom Working Width
- L—Current Performance
- M—Total Sprayed Volume
- N—Spray Boom Height (Automatic Boom Control only)

O—Agitation Operating Pressure
P—Pump Speed
Q—Rinse Water Tank Contents

A — Applied rate: shows the actual application rate in L/ha.

B — Target rate: shows the target application rate in L/Ha. When spraying (main shut-off valve open), the operator can go directly to a boost selection screen (Boost Mode) by selecting softkey [D]. When not spraying, the operator can go to the **Job Settings** Menu by selecting softkey [G].

*NOTE: High spray rates may require a reduction in agitation intensity or turned off. See **Agitation** tab in **Job Settings** in this section.*

C — Current speed: shows the speed of the sprayer in km/h. If a simulated speed has been selected (see **General Settings** tab in **Machine Settings**) and the sprayer is not moving, the simulated speed is shown.

D — Sprayed area: shows the sprayed area in hectares.

E — Remaining area: shows the remaining area that can be sprayed with the current tank content and actual application rate.

F — Sprayed distance: the distance traveled during the spraying of this field.

G — Remaining distance: shows the remaining distance that can be sprayed with the current tank content, boom width and actual application rate.

H — Actual flow rate: shows the actual total flow rate in L/min.

I — Liquid pressure: shows the liquid pressure in bar.

J — Air pressure: Not used.

K — Spray boom working width: shows the actual active working width of the boom.

L — Current performance: shows in ha/h the current performance at the present speed and settings.

M — Total sprayed volume: shows the sprayed volume of the current field in liters.

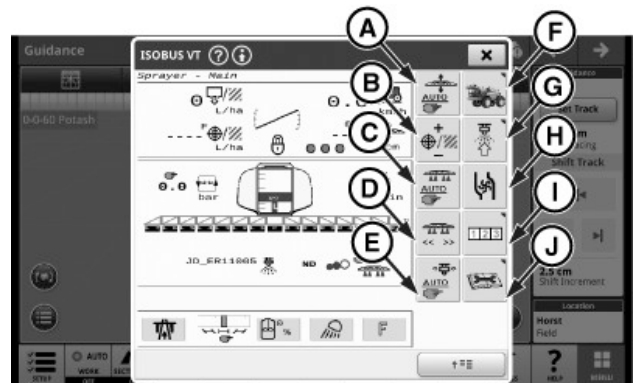
N — Spray boom height (Automatic Boom Control only): shows the actual boom height when Automatic Boom Control is fitted.

O — Agitation Operating Pressure: shows the working pressure of the agitation in bar.

P — Pump Speed: displays the solution pump shaft rotation speed in revolutions per minute.

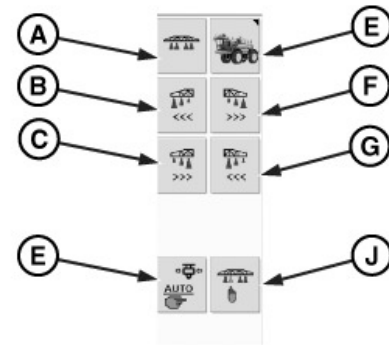
Q — Rinse Water Tank Contents: shows the actual contents in liters.

Section ON/OFF Softkey Layout



TG644045—UN—21AUG24

Main Softkey Layout



TG644046—UN—21AUG24

Section ON/OFF Softkey Layout

Pressing softkey **[D]** from the **Main Softkey Layout** leads to the **Section ON/OFF Softkey Layout**.

In the Section ON/OFF layout, the softkeys have the following functions:

Automatic Boom Control Auto/Manual [A]: This is an option and when fitted this softkey is visible. Operating softkey toggles the automatic or manual function of the Boom Automatic Control .

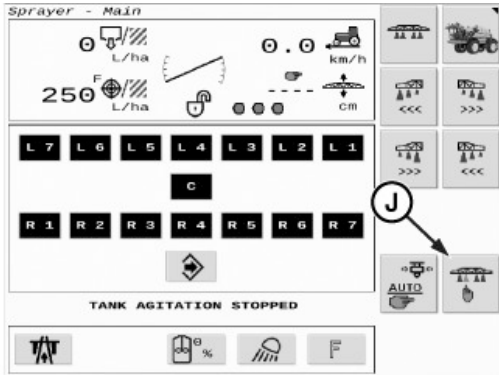
Return to main layout [F]: this softkey returns the user to the main page softkey layout.

Sequential Switching On - to Outer Left [B] & Outer Right [G]: Sections that are switched OFF can be turned ON from left to right via softkey [B] and from right to left via softkey [G] each time the softkey is pressed. All sections can be set ON by operating the IBS reset button on the multi-function control.

Sequential Switching Off- to Outer Left [C] & Outer Right [H]: Sections that are switched ON can be turned OFF from left to right via softkey [C] and from right to left via softkey [H] each time the softkey is pressed. All sections can be set ON by operating the IBS reset button on the multi-function control.

Pressure Setting Softkey Layout [E]: selecting this softkey brings up another softkey menu for pressure

settings control (see Pressure Setting Softkey Layout for further information).



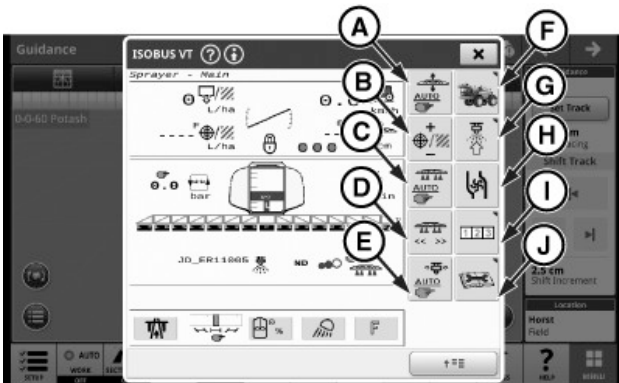
TG644047—UN—21AUG24
Spray Boom Sections Enable and Disable Popup - Softkey [J]

Spray Boom Sections Enable and Disable [J]: to manually enable or disable boom sections, press softkey [J]. The screen changes and a popup page shows the individual sections on the spray boom. Each box has a position marked on it for example, C (center) or L1 (left 1) and so on. Pressing the desired section toggles its functional state, white backgrounds in the box indicates that it is disabled and with a black background that the section is enabled.

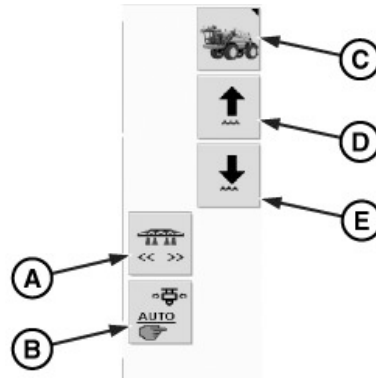
To exit the screen, push the **Enter** key on the bottom center of the popup.

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Pressure Setting Softkey Layout



TG644045—UN—21AUG24
Main Softkey Layout



TG644048—UN—21AUG24
Pressure Setting Softkey Layout

Pressing softkey [E] from the **Main Softkey Layout** leads to the **Pressure Setting Softkey Layout**.

In the Pressure Setting layout the softkeys have the following functions:

Automatic Boom Control Auto/Manual [A]: This is an option and when fitted this softkey is visible. Operating softkey toggles the enable or disable Boom Automatic Control function.

Automatic Section Control ON/OFF [C] (Option): when fitted this softkey is visible and controls the operation mode of the boom sections between manual and automatic.

Section Control ON/OFF Softkey Layout: pressing softkey [D] leads to the Section ON/OFF Softkey Layout.

Regulation Setting Auto/Manual [E]: when in manual regulation, pressing [E] changes the operation mode to automatic regulation. Pressing [E] again reverts the operation mode back to manual. Note that softkey [E] is used to navigate to the Pressure Setting Softkey Layout and then it allows the operator to change between automatic and manual operation mode.

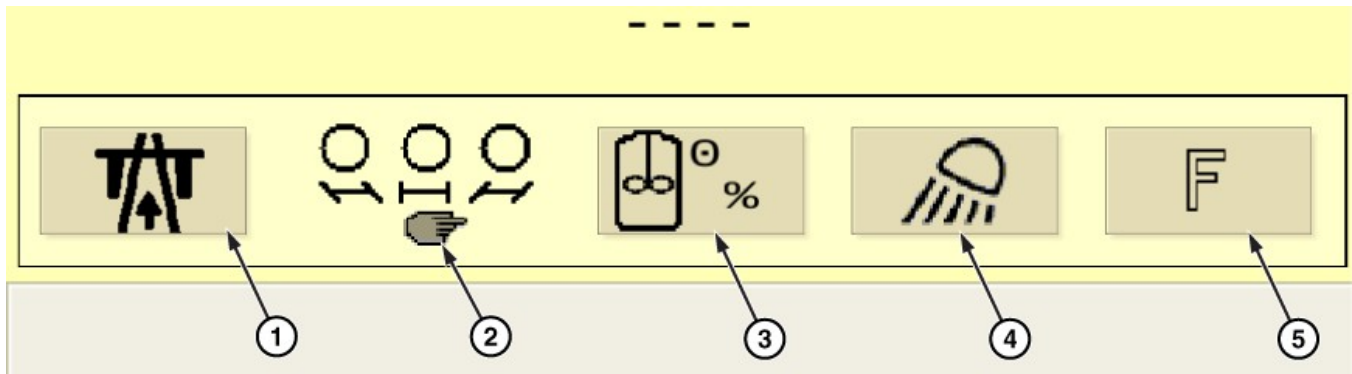
Return to main layout [F]: this softkey returns the user to the main page softkey layout.

Increase Liquid Pressure [G]: press softkey to increase liquid pressure. Monitor the result on the sprayer main page.

Decrease Liquid Pressure [H]: press softkey to decrease liquid pressure. Monitor the result on the sprayer main page.

awqniwx,1723636218203-19-14AUG24

Agitation, Work Lights and F-Switch



Agitation, Work Lights and F-Switch

TG597337—UN—09OCT23

- 1—Road Drive ON/OFF
 2—Steering Status
 3—Agitation Status ON/OFF and % of Intensity

Road Drive ON/OFF (1): this button is used to active / deactivate the transport lock. the transport lock inhibits the hydraulics to the boom folding while driving on the road. The button changes color when active.

Steering Status (2): shows the status of the steering position, refer to the **Automatic Trailing Functions** in the section **Operation of the Machine**.

Agitation Status ON/OFF and % of intensity (3): this button is used to switch the electrical agitation ON or OFF. The button changes color when active. Standard Agitation Intensity is shown as a percentage in the button when active. The button switches ON and OFF both Standard and Return Agitation. See Agit. (Agitation Control) tab in this section for agitation settings.

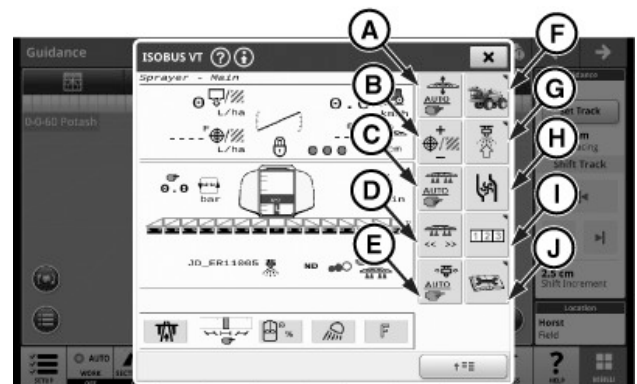
Work lights ON/OFF (4): select work lights located on the boom arms ON or OFF. The button changes color when active. Maximum current for work lights is 10 A.

F-Switch (free function) ON/OFF (5) is for an additional switched function as required by the operator for sprayer operation. The button changes color when active. The connection is on the center frame, near the potentiometer for boom tilt. It has a 2-pole Metri-pack 280 sealed connector (Delphi) and the output is 12 V with a maximum current of 10 A. One use would be for a beacon light which is mounted ex-factory.

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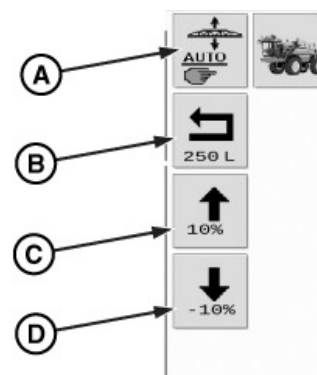
- 4—Work Lights ON/OFF
 5—F-Switch (free function) ON/OFF

Boost Mode



TG644045—UN—21AUG24

Sprayer Main Page



TG644049—UN—21AUG24

Boost Mode Softkeys

To get **Boost Mode** from the sprayer main page select softkey [B]. The following softkeys appear:

Softkey [B]: Return: if softkey [B] is pressed, the target application rate is reset to the original target rate (100%) as set in **Job Settings**, screen returns to previous page.

Softkey [C]: Boost Percentage +10%: shows the boost percentage which can be changed in +10% steps. Each time the key is pressed, the target rate increases by +10%.

Softkey [D]: Boost Percentage -10%: shows the boost percentage which can be changed in -10% steps. Each

time the key is pressed, the target rate decreases by -10%.

If the machine is set to manual, the softkey [B] for **Boost Mode** is not visible.

awqniwx,1723636490643-19-14AUG24

Job Settings

Job Settings

Job 1

Job 2

Agit.

BoomCtrl

Field

16

Target Rate [L/ha]

200

Manual Spray Pressure [bar]

2.1

Nozzle (Preset 1)

JD_ER11005

Density [kg/L]

1.00

External Target Rate Source

None

Task Controller

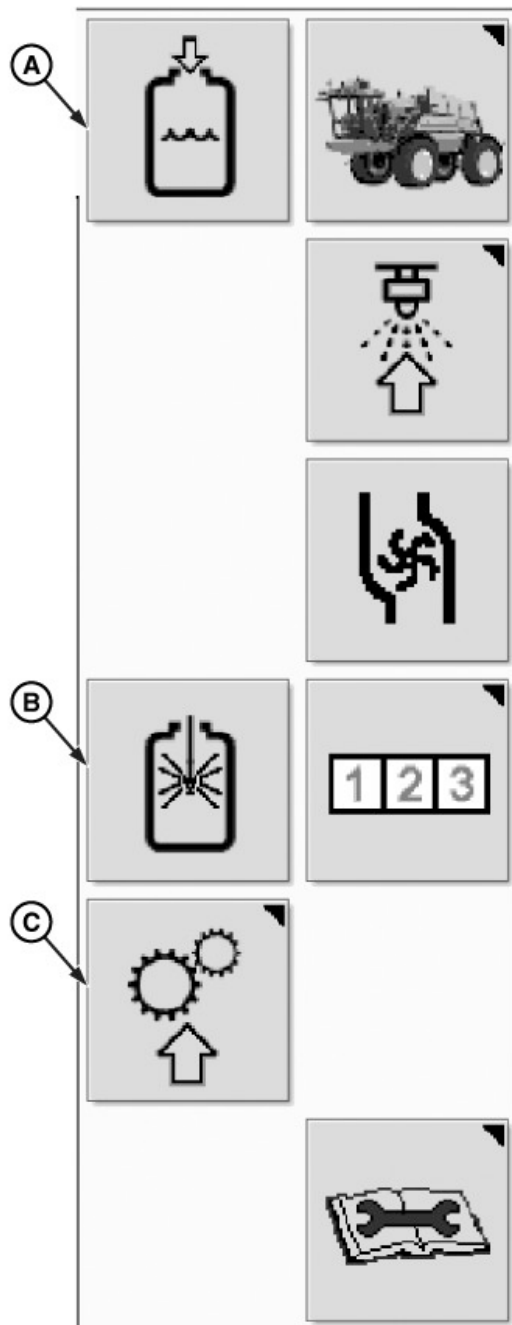
Control & Doc

TG644050—UN—21AUG24

Job Settings allows the operator to prepare the sprayer for a new spray job. It can be entered by selecting softkey [G].

Four tabs are now visible on the display: **Job 1**, **Job 2**, **Agit** (agitation performance control), and **BoomCtrl**.

Job Settings Softkeys



TG644051—UN—21AUG24

Job Settings - Softkey Menu Field

Tank Filling: select softkey [A] for tank filling screens.

Nozzle Calculator: select softkey to display the nozzle calculator to check all job settings (especially nozzle selection). You can calculate working speed, pressure, nozzle flow rate, and droplet size.

Rinse System: select softkey [B] for **AutoDilute**, **Continuous Dilution**, **Boom Rinse**, **Solution System Rinse** and **Rinse Cycle** programs for dilution and sprayer rinsing to minimize chemical pollution. See

System Rinse in **Operation of the Machine** section for further information.

Machine Settings [C]: select to access the machine settings. A confirmation screen appears, press enter to go into the menu. The display screen consists of four tabs: **General** settings, **Boom** settings, **Tank** settings, and **Regulation** settings. In addition, the sensor calibrations are available and the configuration of the main page layout.

See **Machine Settings** in this section for more information.

Job 1

TG644052—UN—21AUG24

Field: select the field number (up to 16 different memories are available) to be used for the next spraying job (memory location is for saving details of sprayed area, volume, time, distance, and so on). The value in the window changes to white, with a black background to indicate that the value can be changed with the scroll wheel. If the value has been changed, press the **Enter** button to confirm and store the new value. When **Task Controller** is set to:

- **Disabled:** Field 1-16 is available.
- **Control:** Field 1-16 is available
- **Control & Doc:** Field 16 is visible but not selectable (grayed out) and cannot be cleared (as it is used for data exchange with the documentation system).

NOTE: Task controller section is not available on machines equipped with Individual Nozzle Control (INC).

Target Rate: which is in l/ha can be changed by selecting the field. A numeric keypad appears, type in the required value and enter. The new value will now be used.

Nozzle (Preset 5): this allows the operator to select one of the pre-programmed nozzles which will then be used for the next spraying job. Up to five different nozzles can be pre-programmed (in **Nozzle (Presets 5)** on the **Boom Settings** tab in **Machine Settings**). On selecting the **Nozzle** field, a drop-down list appears, choose one of the available nozzles. For each pre-programmed nozzle, there is also a pre-programmed target

application rate. If a different nozzle is selected, the target application rate for that nozzle will also automatically be adjusted.

Density: is given in kg/l, selecting this field allows the operator to change the value of the density of the liquid in the tank. This value needs to be changed when spraying with a pressure-based regulation and when the density of the spraying liquid (for example, liquid fertilizer) is different from water at 1.00 kg/l. If the machine is equipped with a flow and a pressure sensor, this value needs to be entered as well, in order to prevent activation of the alarm Flow / Pressure Cross Level Check / Tank Volume (see **Regulation Settings** in the Section **Machine Settings**).

External Target Rate Source: set to **None** for normal spraying applications. This parameter should only be set if an **external target** is used as input. (See your

John Deere dealer or other service provider for connection and activation.) This can be used if the sprayer is used for application of liquid fertilizer using the **Hydro-N-Sensor**. Set to **Appl. Map** when using the information on the data card.

Task Controller: if a task controller is connected to the implement bus system, the task controller allows data storage during all field operations. This allows the operator to change between three modes:

Disabled: select as to not use this feature.

Control: for automatic section control and registration of field operations (field totals) running on the sprayer (fields 1 to 16).

Control & Doc: for automatic section control and registration (documentation) of field operations running on the VT (display). Field 16 is automatically selected and is used for data exchange only.

Agit. (Agitation Control)

Job Settings

Job 1	Job 2	Agit.	BoomCtrl
Agitation Tank Level [L] 200 (A)			
Auto. Agitation Stop ☒ (B)			
Manual Agitation Intensity [%] 100 (C)			
Max. Agitation Intensity [%] 100 (D)			
Min. Agitation Intensity [%] 0 (E)			
Auto Intensity (F)			
Return Agitation [%] 25 (G)			
Power Agitation (H)			
Not Available			

TG644053—UN—21AUG24

A—Agitation Tank Level [L]
 B—Auto. Agitation Stop
 C—Manual Agitation Intensity [%]
 D—Max. Agitation Intensity [%]

E—Min. Agitation Intensity [%]
 F—Auto Intensity
 G—Return Agitation [%]
 H—Power Agitation

This screen is used for manual and automatic agitation settings. Instant control is available for both operation modes to prevent foaming of the solution.

Agitation Tank Level [L] (A): set the required level in liters for the automatic agitation to stop. A caution message **Stop Tank Agitation** is given to the operator

when this level has been reached if **Auto. Agitation Stop** has not been activated.

Auto. Agitation Stop (B): to enable the automatic agitation stop check the box. Agitation stops at the value set in the field above. A caution message **Tank Agitation Stopped** is displayed on the screen, when the agitation has switched OFF automatically.

Manual Agitation Intensity [%] (C): set the required intensity as a percentage for manual control. This not accessible if **Auto Intensity** has been set.

Max. Agitation Intensity [%] (D): set the required intensity as a percentage for the maximum agitation only when **Auto Intensity** control is used.

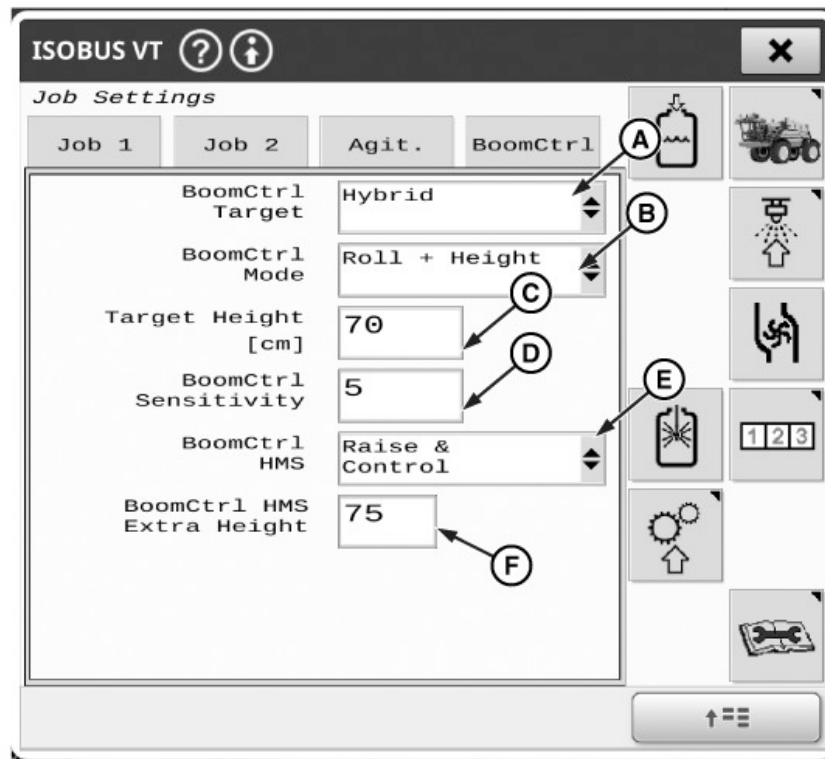
Min. Agitation Intensity [%] (E): set the required intensity as a percentage for the minimum agitation only when in **Auto Intensity** control is used.

Auto Intensity (F): to enable the automatic intensity check the box. Agitation will automatically be set to the minimum and maximum values set in the fields above. The intensity is adjusted automatically in a linear correlation as the solution tank content reduces.

Return Agitation [%] (G): set the required agitation percentage for the return line back to the solution tank. Return agitation is in addition to the agitation from the agitation nozzles in the base of the solution tank.

Power Agitation (H): sets both agitation valves to 100% agitation and the solution pump maximum speed. With, the solution pump set to off a **Not Available** message appears on the display. With, the solution pump running a **Start** button is shown. Once Started the button changes to the **Stop** button. The agitation returns to the previous settings before the Start button was pressed.

BoomCtrl



TG644054—UN—21AUG24

A—BoomCtrl Target
B—BoomCtrl Mode
C—Target Height

D—BoomCtrl Sensitivity
E—BoomCtrl HMS
F—BoomCtrl HMS Extra Height

NOTE: For, Job 2 tab for John Deere TerrainControl™ Pro and John Deere TerrainCommand™ Pro see the Accessories Section of this manual.

BoomCtrl Target (A): select the type of target for the work required, Crop, Ground, or Hybrid from the drop-down list:

BoomCtrl Target Modes	
Crop	Used mainly for dense crop. The crop level is the target for the boom height.
Ground	Ideal for pre-emerging spraying applications (bare soil). The ground level is the target for the boom height.
	Post-emerge spraying with small plants. The ground level is the target for the boom height.
Hybrid	Used for spraying a crop with a large variation of density. Hybrid combines the function provided by the two target modes, Crop and Ground, by tracking both simultaneously. If the crop is not continuous, Hybrid tracks the ground and determine a continuous "virtual"

BoomCtrl Target Modes	
	crop as an operator would expect in these crop conditions.

BoomCtrl Mode (B)

- **Roll**; in this mode the boom roll is automatically controlled by BoomCtrl.
- **Roll + Height**; in this mode the boom roll and boom height is automatically controlled by BoomCtrl.

Target Height (C): displays the target nozzle height in cm. If the machine is equipped with Boom Ctrl or the Automatic Boom Height and Variable Geometry Control System (JD Preferred Partner), the boom height is automatically adjusted to the set spray height above the target (crop or the ground).

Refer to John Deere TerrainCommand™ Pro or to John Deere TerrainControl™ Pro in **Accessories** for further information.

BoomCtrl Sensitivity (D): the sensitivity setting can be adjusted 1—10, 5 is the default setting. The

recommended setting is form 5 - 8. A lower setting (1 - 4) is conservative and reduces the system sensitivity. A higher setting (9 - 10) is aggressive and increases the system sensitivity.

BoomCtrl HMS (E): select one of the following modes from the drop-down list:

- **Off**; Boom Headland Management is not enabled.
- **Raise & Stop**; in this mode the boom moves to the height set for headland turns, refer to **Boom Height**. Used where the headland is empty to stop the boom over rolling due to the height difference between crop and empty headland.
- **Raise & Control**; in this mode the boom moves to the height set for headland turns (see **Boom Height**) and the desired boom roll position, refer to **Boom Roll Correction** in Operation of the Machine.

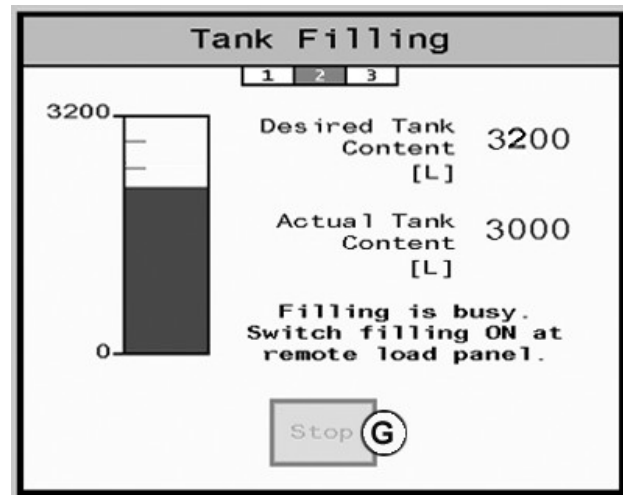
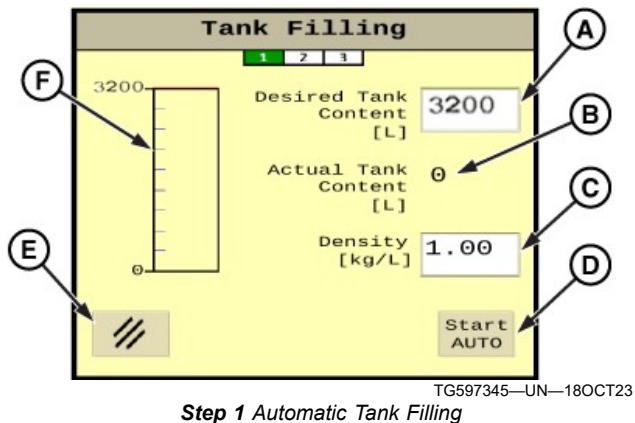
NOTE: When the **Boom Headland Management** uses **Raise** in a function, the **BoomCtrl HMS Extra Height (F)** Raise Height [cm] is added to the Boom Height [cm].

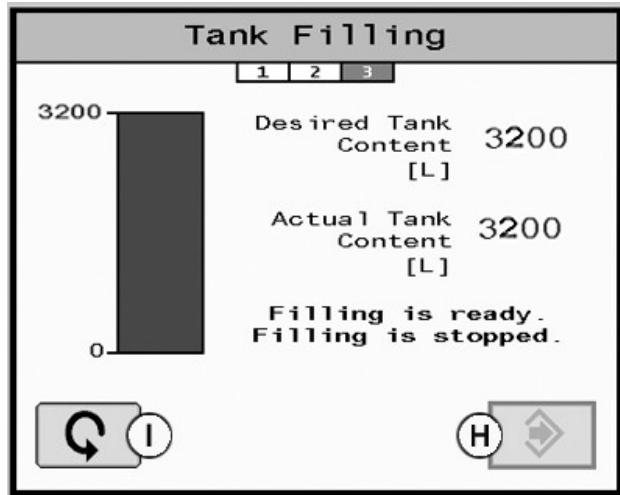
AWQNIWX,1754894040342-19-21AUG25

Tank Filling with Suction Valve

The **Tank Filling** menu can be entered by selecting softkey [A] from **Job Settings**.

Automatic Tank Filling





WZ290914081—UN—17DEC20

Step 3 Automatic Tank Filling

- A—Desired Tank Content [L]
 B—Actual Tank Content [L]
 C—Density [kg/L]
 D—Start AUTO Button
 E—Cancel Button
 F—Tank Level Graphic [L]
 G—Stop Button
 H—Enter Button
 I—Restart Button

The automatic filling process will be displayed in three steps, indicated by the green highlighted number under the screen title.

Step 1.

Desired Tank Content [L] (A): Enter the desired tank content in liters by selecting the field and typing the required value using the numeric keypad. A red line indicates the desired level on the tank graphic.

Actual Tank Content [L] (B): The actual tank content measured by the digital tank level sensor is shown here. If the tank is then filled again, the new tank content will be shown. In this way the display can show the actual tank content during spraying by subtracting the sprayed volume from the tank volume. Tank graphic shows actual level in blue.

Density [kg/L] (C): The specific gravity of the liquid in the tank (1.00 kg/L for water or water based solutions) must be entered here. This is very important to show the correct tank contents. It is based on the pressure sensor measurement, which depends on the liquid density. Measure the weight of one liter of liquid and enter this value.

Start AUTO (D): Select this button to begin the automatic filling process once the **Desired Tank Content [L]** and **Density [kg/L]** have been entered correctly.

Step 2.

- The display will show the following message: **Filling is busy. Switch filling ON at remote load panel.**

Turn ON the required filling switch located on the SCS panel (External, Sprayer or Fast Fill Centrifugal (option) Pump).

- The controller will start the filling until the desired tank level is reached.
- The display will show the progress of the filling and the message **Filling is busy. Please wait. . .**
- The filling can be interrupted by pressing **Stop (G)**. The display will revert to the previous screen (step 1).
- When the desired tank level has been reached, the controller will display the message **Remote Load Active**. Turn OFF the selected filling switch on the SCS panel.

Step 3.

- Filling is ready. Filling is stopped.** will now show on the display. The filling valve(s) will automatically close and the tank indicator shows the tank content at the level selected in step 1.
- Note that the filling valve is closed just before the desired tank level (dependent on the value set in **Automatic Filling Offset, Tank tab, Machine Settings**) is reached.

Summary of Buttons used for Tank Filling.

Cancel (E): On step 1, this cancels the **Tank Filling** screen and returns to **Job Settings**.

Stop (G): On step 2, stops the filling and returns to:

- Step 1 - when a SCS panel filling switch is ON.
- Sprayer Main - when a SCS panel filling switch is OFF.

Enter (H): On step 3, the display returns to **Job Settings**.

Restart (I): Press this button (shown on step 3) to return to step 1 of the tank filling.

Manual Tank Filling

In addition to the normal manual tank filling method of using the SCS panel switches (see list below) and observing the tank level indicator located on the platform above the SCS panel, the display can be used to monitor the manual filling process.

For further information see:

- Filling Solution Tank With External Pump**
- Filling Solution Tank With Solution Pump**
- Filling Solution Tank With Centrifugal Pump Option**

In the section **Operation of the Machine** for manual filling.

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Nozzle Calculator

WZ290401967—UN—30JUN20

The **Nozzle Calculator** menu can be entered by selecting softkey **[B]** from **Job Settings**. Use this to check all job settings (especially nozzle selection) and calculate the working speed, pressure, nozzle flow rate and droplet size.

The nozzle calculator is a tool to help the operator make the correct job settings.

Target Rate: the target application rate (l/ha) can be changed here by selecting the field and entering the desired application rate with the numeric keypad and pressing **Enter** to confirm and store the value.

Nozzle: this selection allows the operator to select one of the pre-programmed nozzles which will be used for the next spraying job. Up to 5 different nozzles can be pre-programmed (in menu **Nozzle Presets**). If the field is selected, a drop-down list with the available nozzles will appear (**Nozzle** menu), from which a nozzle can be selected. For each pre-programmed nozzle there is also a pre-programmed target application rate. If another nozzle is selected, automatically the target application rate for that nozzle will be adjusted.

Desired Speed: the desired driving speed in km/h can be entered by selecting this field. Enter the desired speed with the scroll wheel. The value will increment or decrement depending on the direction the scroll wheel is turned. Confirm with **Enter** button to store the value. The nozzle calculator will show the liquid pressure, nozzle flow rate and spray quality for the selected nozzle and desired target rate with this speed. It allows the operator to check in advance whether this combination is acceptable.

Desired Pressure: the desired spray pressure in bar can be entered by selecting the field. Enter the desired spray pressure with the scroll wheel. The value will increment or decrement depending on the direction the

scroll wheel is turned. Confirm with **Enter** button to store the value. The nozzle calculator will show the required speed and resulting nozzle flow rate and spray quality for the selected nozzle and desired target rate with this spray pressure. It is a combination check for the operator.

Density: selecting this field allows the operator to change the value of the density (specific gravity) of the liquid in the tank. This value needs to be changed when the specific gravity of the spraying liquid is different (e.g. liquid fertilizer) than 1.00 kg/l.

Flow Rate: shows the calculated individual nozzle flow rate in l/min.

Spray Quality: shows the spray quality of the nozzle at the calculated or desired pressure according to the BCPC droplet size classification. The word "unknown" is shown when the droplet size is not known (e.g. for a user tip or when going outside the working range of the selected nozzle).

Enter: stores the values set in the fields and then returns to the **Job Settings** menu.

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Machine Settings

TG597349—UN—20OCT20

Machine Settings - Confirmation

NOTE: The machine settings cannot be entered when:

- The master valve is open.
- The machine is in motion.

To enter **Machine Settings** select softkey **[E]**. A confirmation screen will appear, press enter to go into the menu. The following screen consists of four tabs: **General** settings, **Boom** settings, **Tank** settings and **Regulation** settings. In addition two new softkeys are present:

Softkey [A] CAL: Sensor Calibration.

Softkey [B]: Main Page Layout.

cf4bipj,1684834066004-19-20OCT23

General Settings

TG644055—UN—21AUG24

General settings tab can be found in **Machine Settings**.

Speed Source: there are two options: GPS, Sprayer Wheel.

Simulation Speed: has three parts. Enter values for **High** and **Low** by selecting, then type in requirement on the numeric keypad. The **check box** activates the simulation to test the sprayer and calibrate the flow sensor.

Actual Wheel Used: use the drop down list to toggle between two pulse values for the wheel sensor, indicated as **Narrow Tire** and **Wide Tire**. For each selection there is a corresponding wheel calibration pulse number. This allows quick selection of another set of wheels.

IMPORTANT: Contact your dealer or repair shop to access the factory settings.

Factory Code: this can only be accessed with an authorized code.

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Boom Settings

TG597351—UN—13OCT23

The menu can be entered by selecting the **Spray Boom** tab in **Machine Settings**.

Section: select the field to get access to the drop down menu for the different sections on the boom (e.g. L1-L2-L3-L4-R4-R3-R2-R1-C for booms with 9 sections), highlight your selection and enter. All sections need to be programmed.

Nozzles per Section: enter the number of nozzles per section here, increment or decrement using the scroll wheel. This must be repeated for all boom sections. Please see also **Section Division of Spray Boom** table in the section entitled **Spray Boom** for the correct number of nozzles per section on your spray boom. (Remember when using drop hoses, that the number of

nozzles per section is the double amount, since nozzle spacing is then 25 cm).

Nozzle Spacing: enter the distance between the nozzles. This is normally 50.0 cm for spray nozzles, except for drop hoses where it is 25.0 cm.

Section off in reduced width : If unchecked, the section is always enabled. If checked, the section is disabled when working with reduced width.

Outer Nozzle Presets: enter menu, a new screen will appear to change the outer nozzle preset configuration (nozzles on the sprayer).

BoomCtrl: enter menu, a new screen will appear to change the BoomCtrl settings. This button is only visible if the BoomCtrl system is fitted to the machine.

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Nozzle Presets

TG597352—UN—09OCT23

The presets can be found on the **Spray Boom** tab in **Machine Settings**.

Nozzle Preset: up to five different types of nozzles can be pre-programmed for a sprayer. The reference number (1 to 5) is used to distinguish between the different nozzle presets. The number can be entered with the drop down list.

Nozzle Type: select to display a drop down list from which the correct nozzle type (e.g. XR-110°) can be selected.

Nozzle Size: enter the correct nozzle size for the selected nozzle type from a drop down list and the nozzle flow rate for a given reference pressure can be calibrated.

Reference Flow: the nozzle flow rate for the reference pressure can be entered here (numeric keypad). When the pressure sensor is calibrated, the nozzle flow rate (also for new nozzles !) has to be calibrated.

Reference Pressure: at which the nozzle flow rate is calibrated, enter with the numeric keypad (decimal point required).

Target Rate Preset: enter new value to change the pre-

programmed target application rate for the selected nozzle with the numeric keypad (decimal point required).

Default Height: this value is a default height for the selected nozzle when using BoomTrac. Highlight and enter, to increment or decrement value use the scroll wheel , press enter to set.

Enter: stores the values for the nozzle preset number, then returns to the **Job Settings** menu.

The nozzle flow rate has to be calibrated as follows:

1. Adjust the liquid pressure regulator in manual mode until the reference pressure (e.g. 2.0 bar) is shown on the display.
2. Capture the nozzle flow rate (l/min) over a period of one minute from several nozzles.
3. Calculate the average nozzle output and enter this value as "Reference Flow" in the field using numeric keypad (decimal point required).

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Outer Nozzle Presets

TG597353—UN—09OCT23

The presets can be found on the **Spray Boom** tab in **Machine Settings**.

Nozzle Preset; up to five different types of nozzles can be pre-programmed for a sprayer. The reference number (1 to 5) is used to distinguish between the different nozzle presets. The number can be selected from the drop-down list.

Nozzle Type; select to display a drop-down list from which the correct nozzle type (e.g. AUIB 85) can be selected.

Nozzle Size; the correct nozzle size for the selected nozzle type can be entered via a drop-down list, and the nozzle flow rate for a given reference pressure can be calibrated.

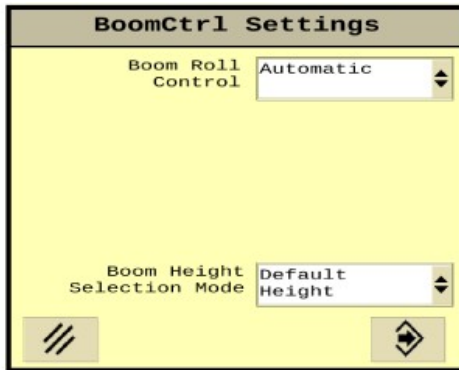
Reference Flow; enter the nozzle flow rate (in l/min) for the reference pressure using the numeric keypad. When the pressure sensor is calibrated, the nozzle flow rate (also for new nozzles!) has to be calibrated.

Reference Pressure; enter the pressure (in bar) at which the nozzle flow rate is calibrated using the numeric keypad (decimal point required).

Enter; stores the values for the nozzle preset number, then returns to the **Job Settings** menu.

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BoomCtrl



TG597354—UN—09OCT23

The presets can be found on the **Spray Boom** tab in **Machine Settings**.

Boom Roll Control; This allows the operator to change between two modes:

- **Automatic:** Boom roll will be automatically controlled and adjusted via John Deere TerrainCommand™ Pro or John Deere TerrainControl™ Pro.

NOTE: In case the Multi-Function Control boom roll is used, the BoomCtrl switches to manual operating.

If BoomCtrl is activated, it can be switched (temporarily) to manual control if required on the **Sprayer - Main** page. In that case the boom roll can be manually operated via the boom roll button on the Multi-Function Control lever (refer to **Boom Roll Correction** in section **Operation of the Machine**). Boom roll indicator on **Sprayer - Main** shows actual position.

- **Boom Roll** button: the boom roll will be manually controlled and adjusted via the boom roll button on the Multi-Function Control lever (see **Boom Roll Correction** in section **Operation of the Machine**). Boom roll indicator on **Sprayer - Main** shows boom roll preset.

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Tank Settings

Machine Settings

General Boom **Tank** Regul.

Minimum Tank Alarm Level [L] 200 A

Automatic Filling Offset [L] 10 B

CAL
 Tank Icon
 Spray Gun Icon
 Gear Icon
 1 2 3
 Battery Icon

TG644056—UN—21AUG24

A—Minimum Tank Alarm Level

Tank Settings tab can be found in **Machine Settings**.

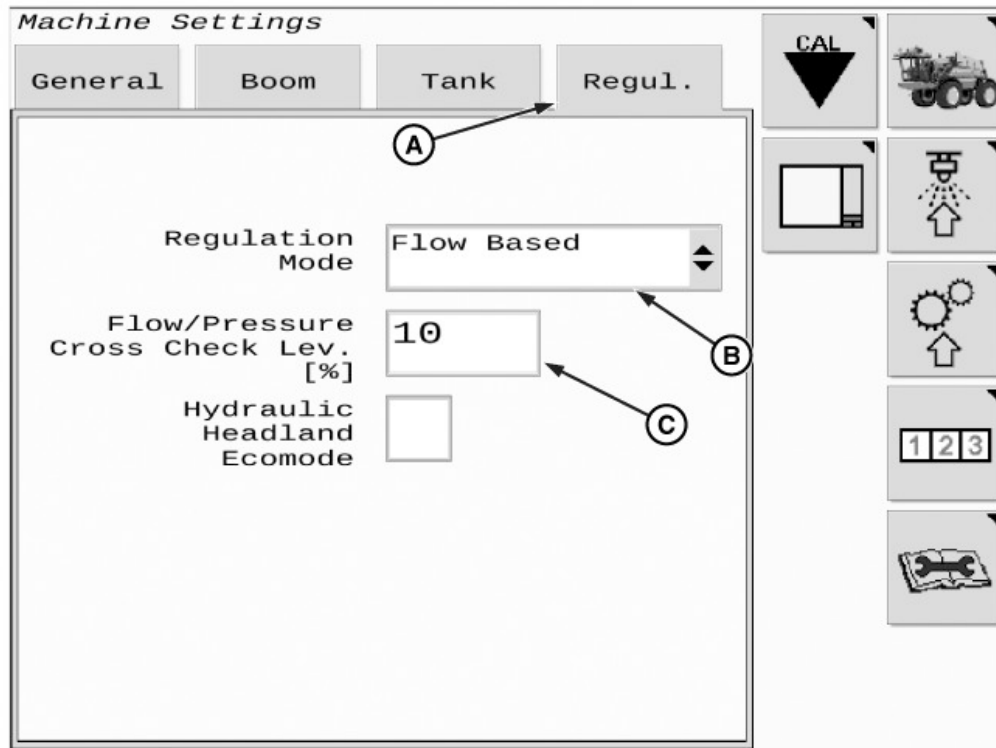
Minimum Tank Alarm Level: enter the required tank level (in liters) at which a **Tank Almost Empty** alarm must be generated during spraying.

B—Automatic Filling Offset

Automatic Filling Offset: the filling valve is closed just before the desired tank level dependent on the value (in liters) set in this field.

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Regulation Settings



TG644057—UN—21AUG24

Regulation Settings tab (A) can be found in **Machine Settings** [H].

Regulation Mode (B): if the sprayer is fitted with both a flow sensor and a pressure sensor, the type of regulation can be selected here. With flow based regulation, the controller will take the input from the flow sensor, and with pressure based regulation the controller will take the input from pressure sensor.

Flow/Pressure Cross Check Level [%] (C): as the sprayer is fitted with both a flow and a pressure sensor.

A ;cross-check ;can be performed between the measured flow rate from the flow meter and calculated flow rate from the pressure sensor for flow regulated control. And conversely for pressure-based control. If the deviation between both values is larger than the programmed; cross-check; level (%) a caution message is given; "Flow / Pressure; Cross; Check; Alarm". The desired deviation can be entered with the numeric keypad.

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Calibration

Sensor Calibration

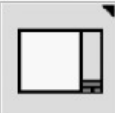
Sensor to Calibrate: ----

Actual Calibration Values 1

Flow	150		
[imp/L]			
L.P. LO Ref.	10	Tank Empty	19
[ADC]		[ADC]	
L.P. HI Ref.	5.0	Tank Min.	57
[bar]		[ADC]	
L.P. HI Ref.	211	Tank Max.	572
[ADC]		[ADC]	
B.Roll-L	227	B.Hght.-Min.	42
[ADC]		[cm]	
B.Roll-R	766	B.Hght.-Max.	242
[ADC]		[cm]	
B.Roll-C	427	Hght.S.-Spac.	18.0
[ADC]		[m]	





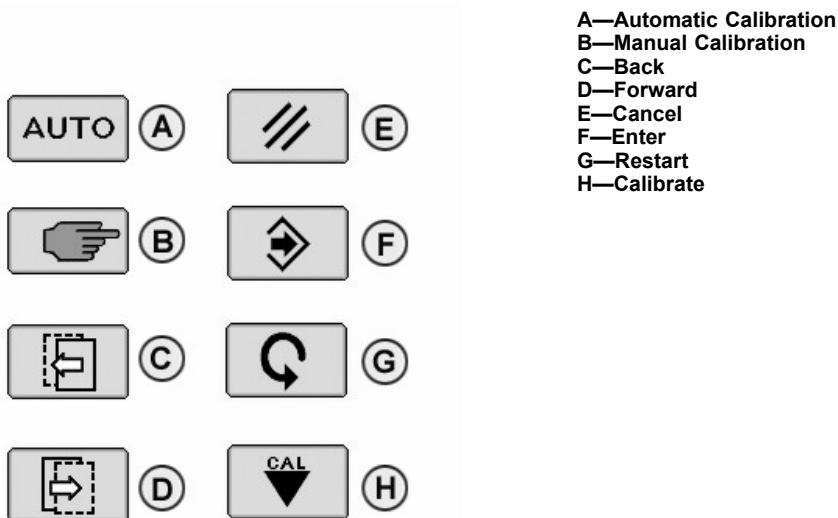






TG644058—UN—21AUG24

Sensor Calibration - Screen 1 & 2



WZ290401324

WZ290401324—UN—11OCT06

Buttons used in Calibration

The **Sensor Calibration** menu is entered via softkey [A] from **Machine Settings**. All actual calibration values (2 screens of values) of embodied sensors will be displayed here. Press the next button to see the next screen.

Sensor to Calibrate: select from the drop down list the sensor required: Flow, Liquid Pressure, Wheel, Tank, Air Pressure, Boom Tilt, Boom Height, Steering, H2O Tank, Centrifugal Pump and Valve Calibration.

In the following calibration screens new buttons will be

present. The lower illustration on the right shows the new types, and the legend describes their function.

awqniwx,1723637783938-19-14AUG24

Flow Calibration

Sensor Calibration - Flow

TG644059—UN—21AUG24

The **Flow Calibration** menu can be entered via the drop down menu in the field **Sensor to Calibrate**. There are two options available: Manual and Automatic. The page also shows the current **Flow Sensor Pulses** value [Pulse/L].

Manual: to change the **Flow Sensor Pulses** input a new value using the keypad. Press **Enter** to confirm setting.

Automatic: will start a three step process to calibrate the sensor.

IMPORTANT: Recalibrate the Flow Sensor at least once a year for accuracy.

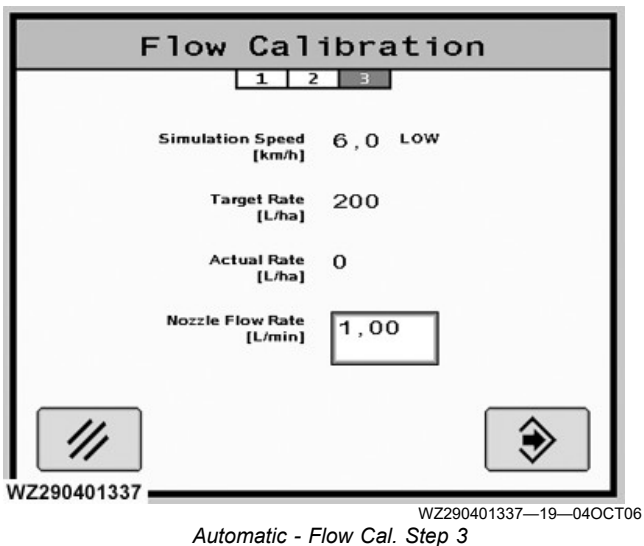
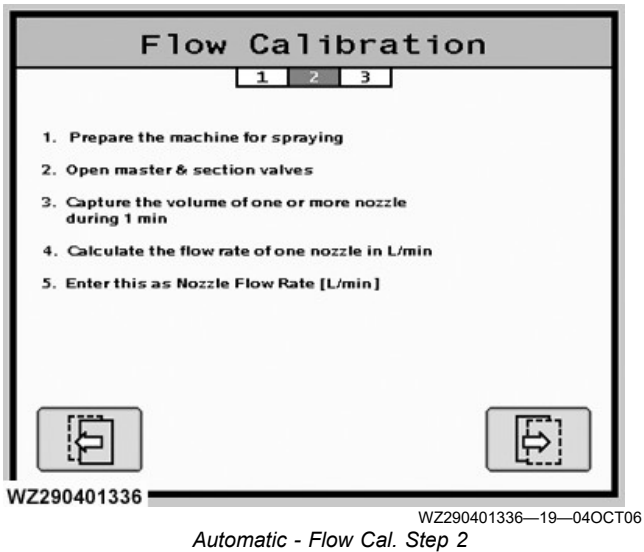
NOTE: Flow sensor pulses, the sprayer has a normal value of between 140 to 170 pulses/L.

Automatic - Flow Cal.

WZ290401335

WZ290401335—19—04OCT06

Automatic - Flow Cal. Step 1



In this **automatic** menu, the flow sensor can be calibrated.

Step 1.

Check the settings of the following and change where required, then select the **Next** button.

Simulated Speed: when this menu is selected, the simulated speed is automatically activated. Select the required speed (High or Low) by checking the appropriate box.

Target Rate: shows the target application rate (as currently set in **Job Settings**).

Actual Rate: shows the actual application rate.

Nozzle Flow Rate: shows the actual nozzle flow rate (determined by the controller) based on the current flow pulses is displayed here. Normally, when the actual rate

and target rate are same, this value will also be equal to the target nozzle flow rate (for the given application rate and simulated speed).

Step 2.

Follow the on screen instructions 1 to 5. When complete go to the last step by selecting the **Next** button.

Step 3.

Here you will input the calibration result. Press **Enter** to save.

Nozzle Flow Rate: enter the measured flow rate during the calibration.

Calibration example

The number of pulses per liter of the flow sensor must be calibrated if a flow sensor is fitted, select the most commonly used nozzle. Perform calibration follows:

1. Program a target value for the number of pulses per liter (e.g. 155) in the menu **Flow Sensor**.
2. Program a low simulation speed in the menu e.g. 6.0 km/h.
3. Program a target application rate in the menu e.g. 250 L/ha.
4. The required nozzle flow rate (L/min) for the target application rate in L/ha (e.g. 250 L/ha) and driving speed (e.g. 6.0 km/h) in this example is then 1.25 L/min.
5. Let the machine spray with all sections opened until the actual rate displayed equals the target rate (e.g. 250 L/ha).
6. Now measure the output of a few nozzles with the aid of a stopwatch and a measuring jug, for one minute (preferably one nozzle behind the machine, one in the center of the spray boom and one at the end of the spray boom).
7. Stop spraying.
8. Calculate the average nozzle output in L/min (let's assume this is 1.29 L/min).
9. Input this value as new nozzle flow rate with the numeric keypad, be sure to use the decimal point. Press **Enter** to confirm and store the value. After entering this value, the correct flow sensor pulse value is now calculated and stored in the memory of the sprayer control system. The new pulse value will be: (nozzle output according to table / average nozzle output measured) x target pulse value flow sensor. In the example this would be: $(1.29/1.25) \times 155 = 160$ pulses per liter. The screen will return to the main calibration page, where the details can be checked.

Liquid Pressure Calibration

Sensor Calibration

Sensor to Calibrate: Liquid Pressure

Liq. Pressure S. Low Ref. Value [ADC]	10	AUTO
Liq. Pressure S. High Ref. Value [bar]	5.0	AUTO
Liq. Pressure S. High Ref. Value [ADC]	211	[Hand Icon]

Toolbar icons: CAL, Tractor, Monitor, Spray Gun, Gear, Numeric Keypad (123), Wrench.

Sensor Calibration - Liquid Pressure

TG644060—UN—21AUG24

The **Liquid Pressure Calibration** menu can be entered via the drop down menu in the field **Sensor to Calibrate**. Two options are available (**Manual** and **Automatic**) for each of the items listed.

The settings and calibration of the liquid pressure sensor are done in this menu. The liquid pressure sensor has a working range from 0-25 bar with a corresponding output of 0-20 mA. The analog current signal is converted into a digital value (ADC) by a 10-bit converter (ADC value between 0 to 1023). Each pressure sensor needs to be calibrated.

This page shows the current **Low Reference [ADC]**, **High Reference [bar]** and **[ADC]** values.

Automatic - Liq. Pressure Sensor Low Reference Value [ADC]: enter the menu to calibrate the reference value of the pressure sensor.

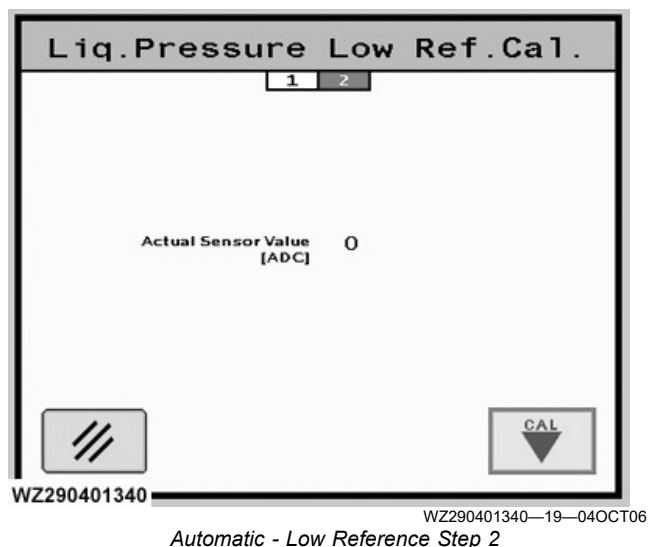
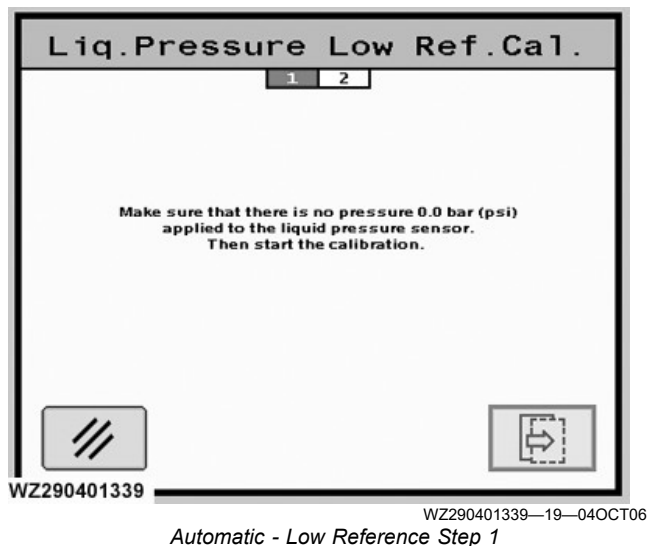
Manual - Liq. Pressure Sensor Low Reference Value [ADC]: the ADC value is the output of the pressure sensor at 0.0 bar. The value can be between 0 and 305 (corresponding with 6.0 mA). The value can be entered manually with the numeric keypad, but the preferred method is to calibrate the reference value.

Automatic - Liq. Pressure Sensor High Reference Value [bar] and [ADC]: enter the menu for calibration of the pressure sensor for the maximum spraying pressure

in bar. For example for nozzles that can spray up to 8 bar, select 8 bar as "high reference pressure".

Manual - Liq. Pressure Sensor High Reference Value [bar] and [ADC]: is the maximum spraying pressure which the pressure sensor uses as a reference value. The corresponding ADC value is ascertained by using the Automatic Liquid Pressure Sensor High Reference calibration.

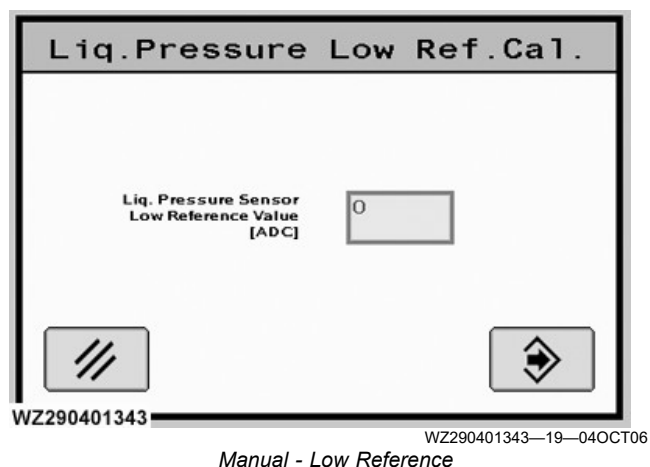
Automatic - Liq. Pressure Sensor Low Reference Value



On this page, the auto calibration of the reference value of the pressure sensor (at 0.0 bar) can be carried out.

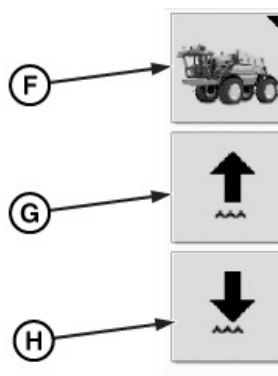
1. Make sure that there is NO pressure (0.0 bar) applied to the liquid pressure sensor. Switch off the solution pump and open the main shut-off valve and boom section valves temporarily to release any possible liquid pressure in the system.
2. The actual sensor value (ADC) can be read in step 2.
3. Press **Next** button to start the automatic calibration and the new reference value for the pressure sensor will be calculated. The reference ADC value should have a maximum value of 305 units otherwise a calibration error will be given. Save the value by selecting **CAL** button.
4. After automatic calibration, the screen will go back automatically to the **Liquid Pressure** calibration page.

Manual - Liq. Pressure Sensor Low Reference Value



The ADC value is the output of the pressure sensor at 0.0 bar. The value can be between 0 and 305 (corresponding with 6.0 mA). The value can be entered manually with the numeric keypad, but the preferred method is to calibrate the reference value.

Adjusting Liquid Pressure Sensor High Reference Value - Automatic & Manual

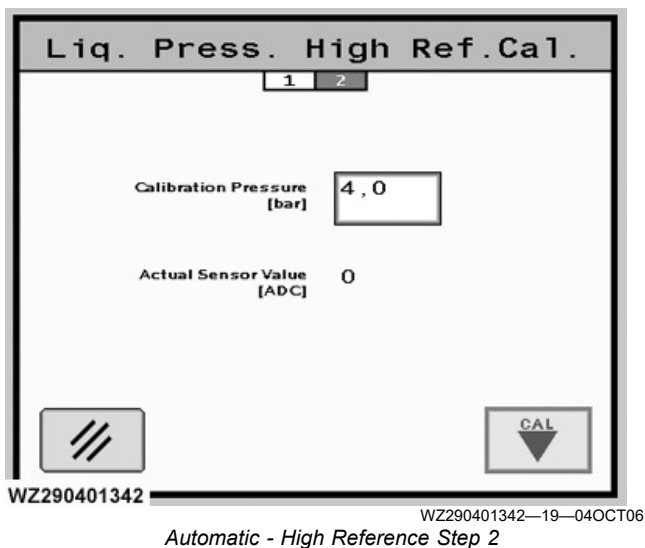


TG645230—UN—28AUG24

For the following calibrations, **Automatic - Liq. Pressure Sensor High Reference Value** and **Manual - Liq. Pressure Sensor High Reference Value**, softkeys [G] (increase regulator pressure) and softkey [H] (decrease regulator pressure) are used to adjust the pressure regulator so the liquid pressure at the nozzle is that set in the **Calibration Pressure [bar]** and **Liq. Pressure Sensor High Reference Value** fields for the calibration.

The closer the pressure measurement to the nozzle can be made the more accurate the result of the calibration.

Automatic - Liq. Pressure Sensor High Reference Value



On this page, the auto calibration of the maximum pressure value of the pressure sensor can be performed.

1. First enter the calibration pressure (bar) in step 2 with keypad (use the decimal point.)
2. Apply a constant pressure to the liquid pressure sensor. Connect a calibrated pressure gauge to the spray line and start the machine. Adjust the liquid pressure of the sprayer on the calibrated pressure gauge to the selected calibration pressure (e.g. 5.0 bar) with the master shut-off valve and the section valves in the open position (i.e. spraying).
3. Press **Next** button to start the automatic calibration. The new maximum pressure of the sensor will be

determined. The actual sensor (ADC) value can be monitored. The ADC value must be at least 153 units (or 3.0 mA) higher than the reference ADC value, otherwise a calibration error will be given. Save the value by selecting **CAL** button.

4. After automatic calibration of the maximum pressure value of the liquid pressure sensor, the screen will go back to the menu **Liquid Pressure** calibration page.

When using different type nozzles with a maximum spray pressure of between 4 bar and 8 bar for example:

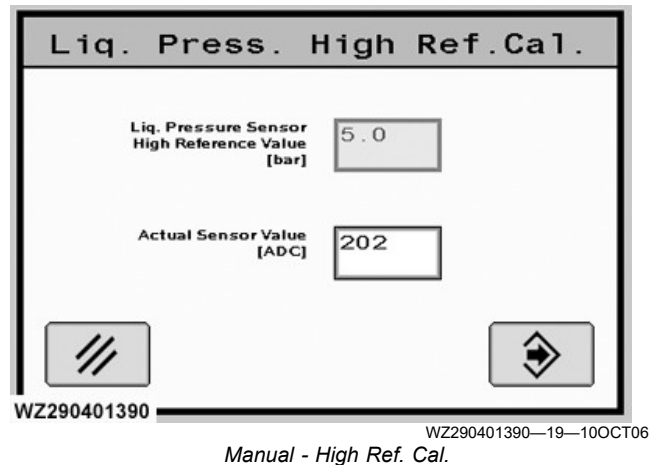
- Choose the pressure which is used the most for spraying. For example, 5 bar
- Enter 5 bar as the Calibration Pressure into the display field on the screen. 5 bar is used to calibrate the maximum value for the pressure sensor.

When spraying with flow base mode, the pressure reading in the display is close to the nozzle pressure.

Spraying with pressure base mode, the calculation for the spray rate is now as accurate as possible.

To ensure the nozzle sprays exactly the right amount of liquid adjust the nozzle L/min in the Nozzle Presets. Also see Calibrating Nozzles in the Operation of the Machine section.

Manual - Liq. Pressure Sensor High Reference Value



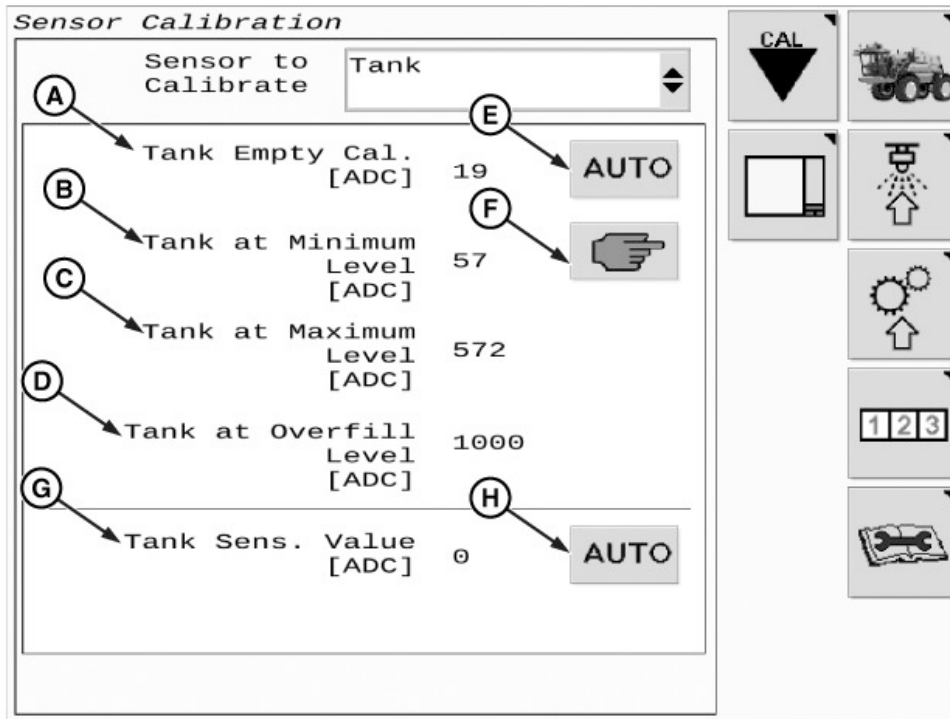
This is the maximum pressure which can be measured by the pressure sensor (corresponding with the maximum ADC value). This value must be calibrated.

Calibration Error

This screen is shown when, after an automatic sensor calibration, the calibrated value is not allowed. It is possible that a sensor is not functioning properly.

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Tank Sensor Calibration



TG644061—UN—21AUG24

The **Tank** calibration menu can be entered via the drop down menu in the field **Sensor to Calibrate**. It will show the current settings for the items listed below.

Four tank levels have to be calibrated for each new machine (tank pressure sensor):

- Tank Empty level
- *Tank at Minimum Level (60 liter)
- *Tank at Maximum Level
- *Tank at Overfill Level

*The minimum, maximum tank and overfill levels are factory programmed in factory settings. See also **Tank Configuration** in **Factory Settings**.

The tank level sensor is a pressure sensor fitted in the bottom of the tank and measures the pressure of the liquid in the tank above the sensor. This value is then used to calculate the actual tank volume. The tank pressure sensor is a very accurate and sensitive sensor. The sensor has a working range from 0-250 mbar with a corresponding output of 0-5 volts. The analog current signal is converted into a digital value by a 10-bit converter (ADC value between 0 to 1023). Each tank pressure sensor needs to be calibrated.

(A) Tank Empty Cal. [ADC]: this ADC value is the output of the tank pressure sensor when the tank is completely empty. The value can be between 0 and 300. The value can be entered manually with the numeric

keypad, but it is preferable to calibrate this value automatically.

(B) Tank at Minimum Level [ADC]: this ADC value is the output of the tank pressure sensor when the tank is at minimum level (minimum level is factory set in Factory Settings). The value can be between 1 and 500 and should be at least 2 units higher than the empty calibration value. The value can be entered manually with the numeric keys, but it is preferable to calibrate this value.

(C) Tank at Maximum Level [ADC]: this ADC value is the output of the tank pressure sensor when the tank is at maximum level (maximum level is factory set in **Factory Settings**). The value can be between 1 and 1023 and should be at least 50 units higher than the calibration value at minimum level. The value can be entered manually with the numeric keys, but it is preferable to calibrate this value.

(D) Tank at Overfill Level [ADC]: The overfill level function are for machine that are fitted with automatic filling. The overfill level is to safeguard the tank spilling should an anomaly occur in the automatic filling. The value is set when the tank shape is calibrated.

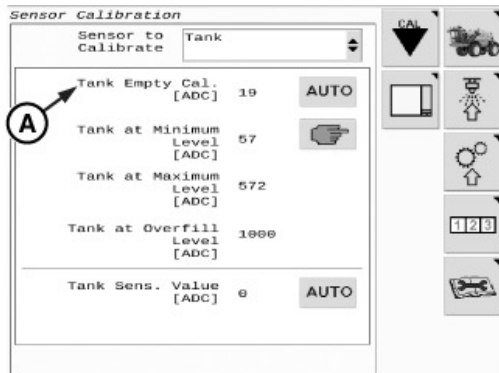
(E) AUTO (Automatic) button: will give access to a screen with calibration possibilities for: **Tank Empty Cal**, **Tank at Minimum Level**, **Tank at Maximum Level** and **Tank at Overfill Level**. Choose the **Next** button to select which.

(F) **Manual** button: displays a screen with four fields. It is preferred that each be calibrated automatically, apart from **Maximum Tank Volume** [I].

(G) **Tank Sensor Value [ADC]**: the actual tank pressure sensor value is shown.

(H) **AUTO (Automatic)** button: opens a **Tank Shape Calibration** screen which is in 3 steps. . For the calibration, fill the solution tank to the overflowing point.

Automatic - Tank Empty Cal.



TG644062—UN—21AUG24

Tank Sensor - Step 1



WZ290401622

WZ290401622—UN—09NOV12

Tank Empty - Step 2

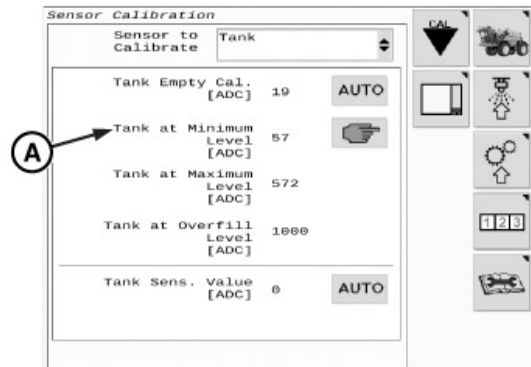
A—Tank Empty Cal.

The calibration of the tank pressure sensor at empty level needs to be done as follows:

1. Press the **Next** button (A) to select the calibration.
2. Make sure that the tank is completely empty, and the tank sensor must be free of water and completely dry.
3. The actual tank pressure sensor value is shown on the display.
4. Press **CAL** button to calibrate. When the sensor value is higher than 300 ADC, then a calibration error will be given.

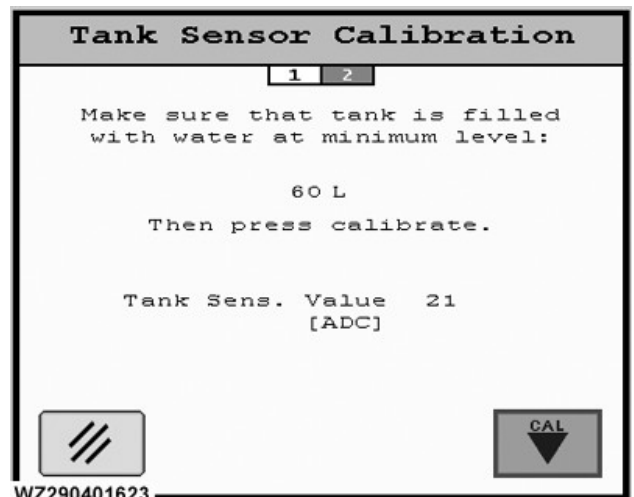
5. The screen will return to the **Tank Sensor** menu.

Automatic - Tank at Minimum



TG644127—UN—22AUG24

Tank Sensor - Step 1



WZ290401623

WZ290401623—UN—11AUG16

Tank Minimum - Step 2

A—Tank at Minimum

In this calibration step of the tank level sensor, the tank must be filled to a minimum level, determined by the factory and set in **Factory Settings**. The **Sprayer Control System** will use linear interpolation to calculate the current tank level when it is below this level. Above this level the calibration table is used (Factory Settings).

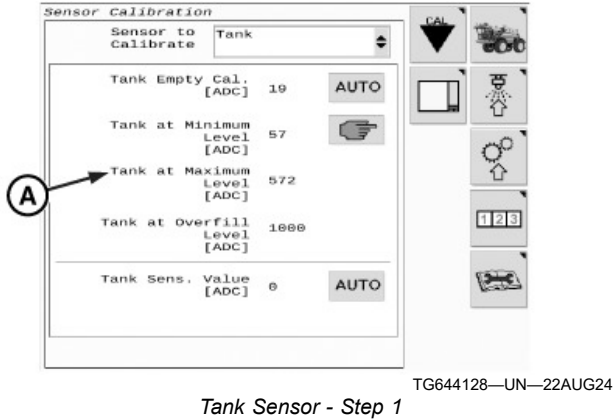
The calibration of the tank pressure sensor at minimum level needs to be done as follows:

1. Press the **Next** button (A) to select the calibration.
2. Make sure that the tank is filled with water to the minimum level.
60 liters need to be measured accurately (e.g. with a calibrated flow sensor or balance) and entered into the tank.
3. The actual tank level sensor value is shown on the screen.
4. Press **CAL** button to calibrate. The sensor ADC value should be at least 2 units higher than the empty

calibration value or otherwise a calibration error will be shown.

5. The screen will return to the **Tank Sensor** menu after calibration.

Automatic - Tank at Maximum



Tank Sensor - Step 1



Tank Maximum - Step 2

A—Tank at Maximum

The calibration of the tank level sensor at maximum (level is factory set in Factory Settings) needs to be done as follows:

1. Press the **Next** button (A) to select the calibration.
2. Make sure that the tank is filled with water to the maximum level:
 - *3200 L for the MAF 32
 - *4000 L for the MAF 40

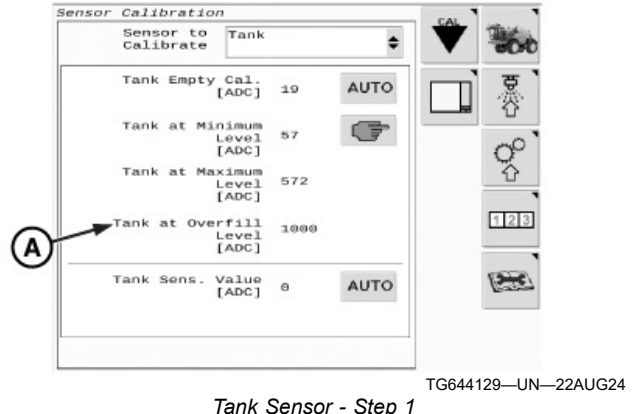
* These quantities need to be measured accurately (e.g. with a calibrated flow sensor or balance) and filled into the tank. Each tank can vary in size due to the manufacturing process.

* The minimum and maximum tank levels are factory pre-programmed in Factory Settings and depend on the actual tank size. If required these values can be adjusted. See also **Tank Configuration in Factory Setup** to enter the actual value.
3. The actual tank pressure sensor value is shown on screen.

4. Press **CAL** button to calibrate. The sensor ADC value should be at least 50 units higher than the calibration value at minimum tank level or otherwise a calibration error will be shown.

5. The screen will return to the **Tank Sensor** menu after calibration.

Automatic - Tank at Overfill Level



Tank Sensor - Step 1



Tank at Overfill Level - Step 2

A—Tank at Overfill Level

NOTE: The overfill level function are for machines that are fitted with automatic filling.

The calibration of the tank pressure sensor at overfill level needs to be done as follows:

1. Press the **Next** button (A) to select the calibration.
2. Make sure that the tank is completely full (just before overflowing).
3. The actual tank pressure sensor value is shown on the display.
4. Then press **CAL** button.
5. The screen will return to the **Tank Sensor** menu.

Manual Calibration

Tank Sensor Calibration - Manual

- A—Tank Empty Cal. [ADC]
 B—Tank at Minimum Level [ADC]
 C—Tank at Maximum Level [ADC]
 D—Tank at Overfill Level [ADC]
 E—Tank Sensor Value [ADC]

(A) Tank Empty Cal. [ADC]: this ADC value is the output of the tank pressure sensor when the tank is completely empty. The value can be between 0 and 300. The value can be entered manually with the numeric keys, but it is preferred to automatically calibrate this value.

(B) Tank at Minimum Level [ADC]: this ADC value is the output of the tank pressure sensor when the tank is at minimum level (minimum level is factory set in Factory Settings). The value can be between 1 and 500 and should be at least 2 units higher than the empty calibration value. The value can be entered manually with the numeric keys, but it is preferable to automatically calibrate this value.

(C) Maximum Tank Volume [L]: the maximum tank volume of the sprayer can be entered here. This value is used as reset value for sprayers without tank level sensor and as maximum tank volume for calibrating the tank level sensor if fitted. A higher value than the maximum tank volume cannot be entered later by the operator to (automatically) fill the tank. If the tank needs to be calibrated, the absolute value needs to be entered. To determine the maximum volume use a weighbridge or use a calibrated flow sensor.

(D) Tank at Maximum Level [ADC]: this ADC value is the output of the tank pressure sensor when the tank is at maximum level (maximum level is factory set in Factory Settings). The value can be between 1 and 1023 and should be at least 50 units higher than the calibration value at minimum level. The value can be entered manually with the numeric keys, but it is preferable to automatically calibrate this value.

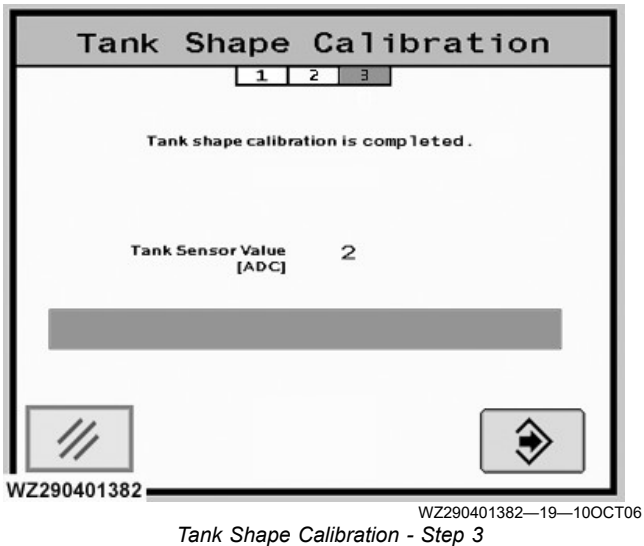
(E) Tank at Overfill Level [ADC]: The function of the overfill level is to safeguard the tank from spilling over should an anomaly occur in the automatic filling settings or filling process. This function is not shown in the illustration above. This value is set when the tank shape is calibrated.

When the values have been set using the keypad press the **Enter** (F) button to save the information.

Automatic - Tank Shape Calibration

Tank Shape Calibration - Step 1, Use 3200 Liters for MAF 32, or 4000 Liters for MAF 40

Tank Shape Calibration - Step 2



The input from the tank level sensor has to be converted into a value to determine the actual tank volume. First the tank level sensor has to be calibrated when the tank is empty, at minimum, maximum and at overflow level in the menu **Tank Sensor**. If this is done, the intermediate steps have to be calibrated with the **Tank Shape Calibration**.

The actual calibration of the shape of the tank is done by spraying the tank empty at a constant flow, starting from the **Maximum Tank Volume** until the **Minimum Tank Volume** is reached. The minimum tank volume is used since a constant flow cannot be guaranteed below the minimum level due to air sucking at the bottom of the tank.

IMPORTANT: The actual calibration of the solution tank requires starting with a filled tank to the overflowing point.

The actual calibration of the complete tank must be done starting from a completely filled tank of 3200 liters for MAF 32, or 4000 liters for MAF 40. There are three

steps to the process shown on screen. The calibration procedure is as follows:

1. Prepare the machine for spraying in manual mode (at constant solution pump speed). The spraying pressure should be absolutely constant (set computer in manual mode). During the calibration process the sprayer should not be moved or touched, otherwise noise signals could be created.
2. Disable the agitation in the tank during the calibration.
3. The circulation valve should be set to **Circulation**
4. Ensure that the tank is completely filled up at the overflow level.
5. Press **CAL** button to start the calibration of the tank shape. The volume in the tank needs to be filled to Filling Opening (just before overflowing). This will ensure a proper tank shape calibration (ADC value at the calibration start must be higher than ADC value of tank at maximum volume as calibrated earlier).

IMPORTANT: Lower or higher flow results in faulty tank shape calibration.

6. Start spraying with a constant flow between 100 and 140L/min (Master valve switch ON). The unit detects that the Master input becomes active and starts the calibration procedure.
7. The display now will show the actual measured ADC value from the tank level sensor during the calibration process. Below that a message **Tank Shape Calibration is running, Please Wait** will be shown together with a bar graph showing the progress of the calibration.
8. The tank must be sprayed empty (at constant flow rate) until the minimum level is reached.
9. When the tank is below the minimum level, the calibration procedure stops automatically and returns to the **Tank Calibration** menu.

Boom Roll Calibration

Sensor Calibration

Sensor to Calibrate: Boom Roll

Boom Roll Left [ADC]	227	AUTO
Boom Roll Right [ADC]	766	
Boom Roll Centre [ADC]	427	
Boom Roll Hysteresis [%]	2	

Vertical toolbar icons: CAL, Tractor, Screen, Sprayer, Gear, 123, Wrench.

Sensor Calibration - Boom Roll

TG644126—UN—22AUG24



WZ290103990—UN—02JUL20

A—Boom Roll Buttons

The **Boom Roll** calibration menu can be entered via the drop down menu in the field **Sensor to Calibrate**. It will show the current settings for the items listed below.

If the sprayer is fitted with a boom roll correction with the Multi-Function Control lever **MFC** the boom roll actuators have to be adjusted in relation to each other.

Boom Roll Left [ADC]: the position of the potentiometer on the boom roll actuator corresponding to the leftmost position of the boom roll indication on the display. This value always has to be calibrated.

Boom Roll Right [ADC]: the position of the potentiometer on the boom roll actuator corresponding to the rightmost position of the boom roll indication on the display. This value always has to be calibrated.

Boom Roll Center [ADC]: the position of the potentiometer on the boom roll actuator corresponding

to the center position of the boom roll indication on the display. This value always has to be calibrated.

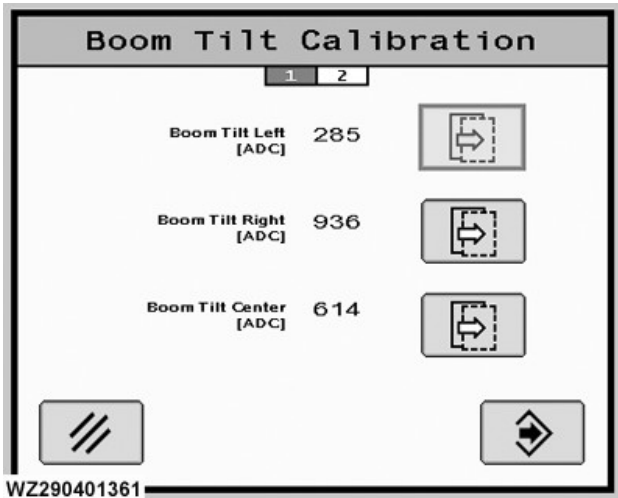
Automatic: will give access to a screen (step 1) with calibration possibilities for: **Boom Roll Left**, **Boom Roll Right** and **Boom Roll Center**. Choose the appropriate field and enter value. The position of the potentiometer on the boom roll actuator corresponding to the position of the boom roll indication on the display. This value always has to be calibrated.

Manual: will give access to a screen with calibration possibilities for: **Boom Roll Left**, **Boom Roll Right** and **Boom Roll Center**. Choose the appropriate field and enter value. The position of the potentiometer on the boom roll actuator corresponding to the position of the boom roll indication on the display. This value always has to be calibrated.

Boom Roll Hysteresis [%]: the hysteresis used for the automatic positioning of the boom roll actuator has to be entered here. The hysteresis is the dead band for the

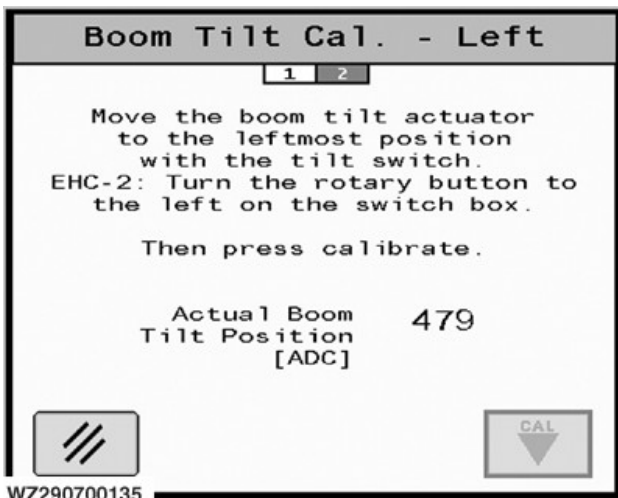
boom roll indication on the display, before operation of the boom roll cylinder takes place.

Automatic - Boom Roll Cal. - Left



WZ290401361—19—04OCT06

Automatic - Boom Roll Step 1



WZ290700135—19—08JUN10

Automatic - Boom Roll Step 2 (Left)



WZ290103990—UN—02JUL20

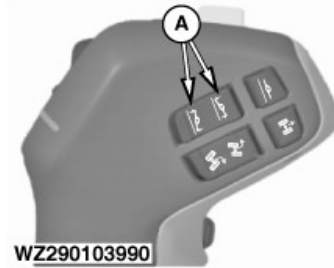
Boom Roll Buttons

A—Boom Roll Buttons

The description of the calibration procedure is shown on the screen: Press and hold the **Boom Roll button (A)** and move the boom to the leftmost position. Then press **CAL** button to start the calibration. Actual **Boom Roll**

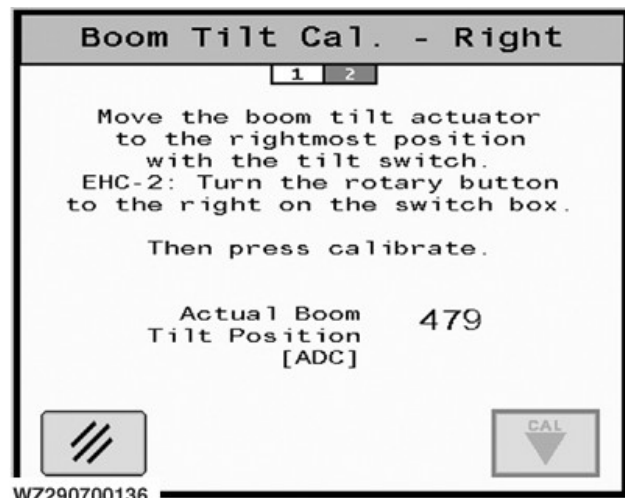
Position [ADC] value is shown in the screen center. The **Cancel** button will return you to the **Boom Roll Calibration** page.

Automatic - Boom Roll Cal. - Right



WZ290103990—UN—02JUL20

Boom Roll Buttons



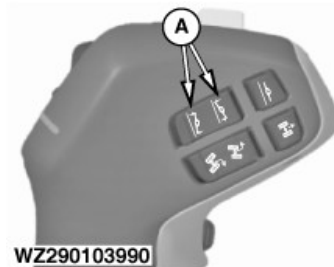
WZ290700136—19—08JUN10

Automatic - Boom Roll Step 2 (Right)

A—Boom Roll Buttons

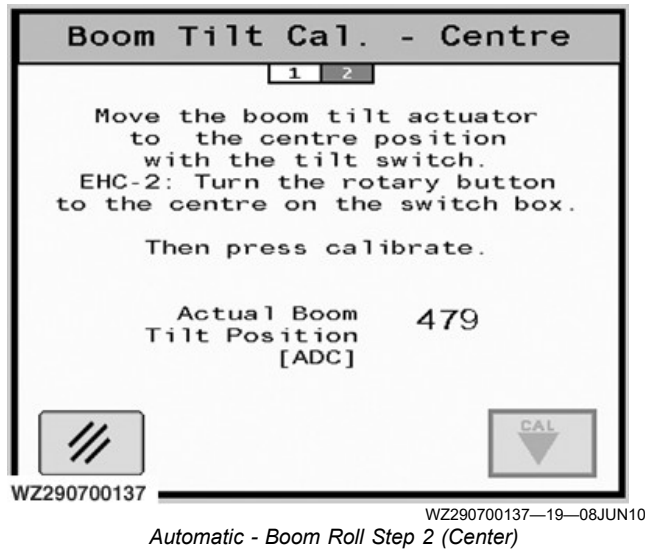
The description of the calibration procedure is shown on the screen: Press and hold the **Boom Roll Button (A)** and move the boom to the rightmost position. Then press **CAL** button to start the calibration. Actual **Boom Roll Position [ADC]** value is shown in the screen center. The **Cancel** button will return you to the **Boom Roll Calibration** page.

Automatic - Boom Roll Cal. - Center



WZ290103990—UN—02JUL20

Boom Roll Buttons

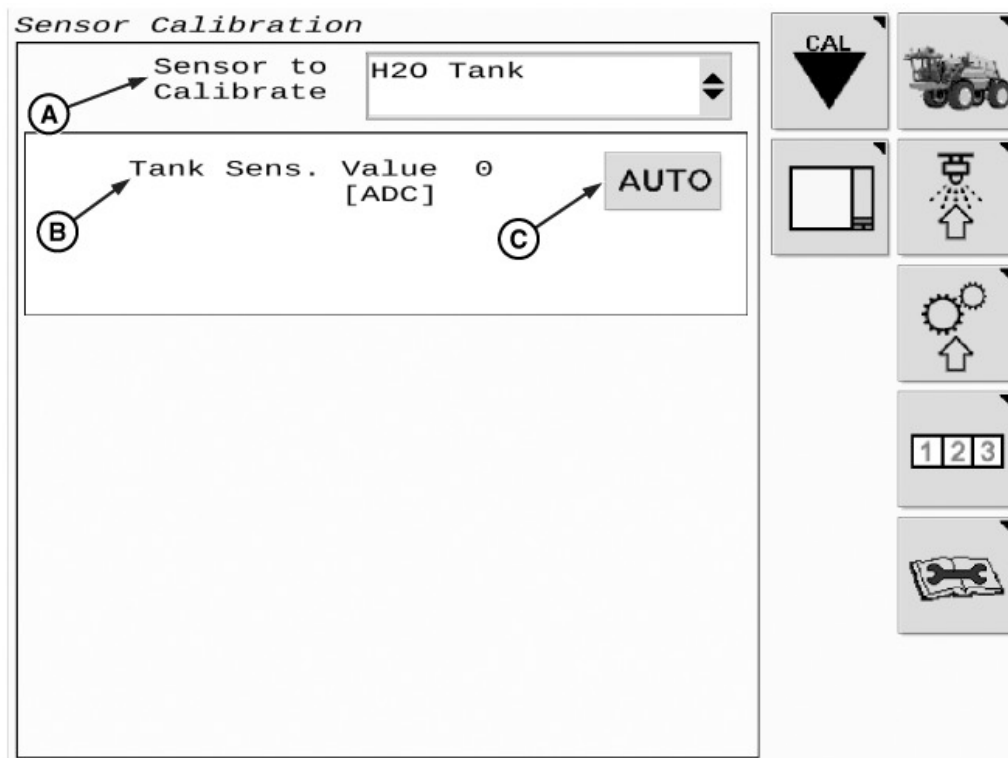


A—Boom Roll Buttons

The description of the calibration procedure is shown on the screen: Move the boom to the center most position with the **Boom Roll Button** (A). Then press **CAL** button to start the calibration. Actual **Boom Roll Position [ADC]** value is shown in the screen center. The **Cancel** button will return you to the **Boom Roll Calibration** page.

awqniwx,1723639375592-19-10OCT24

H₂O Tank Calibration



TG644125—UN—22AUG24



- A—Sensor to Calibrate Field
- B—Tank Sens. Value [ADC]
- C—AUTO Calibration Button
- D—Cancel Button
- E—Calibration Start Button

WZ290401594

WZ290401594—UN—13DEC11

H₂O Tank Calibration (Automatic)

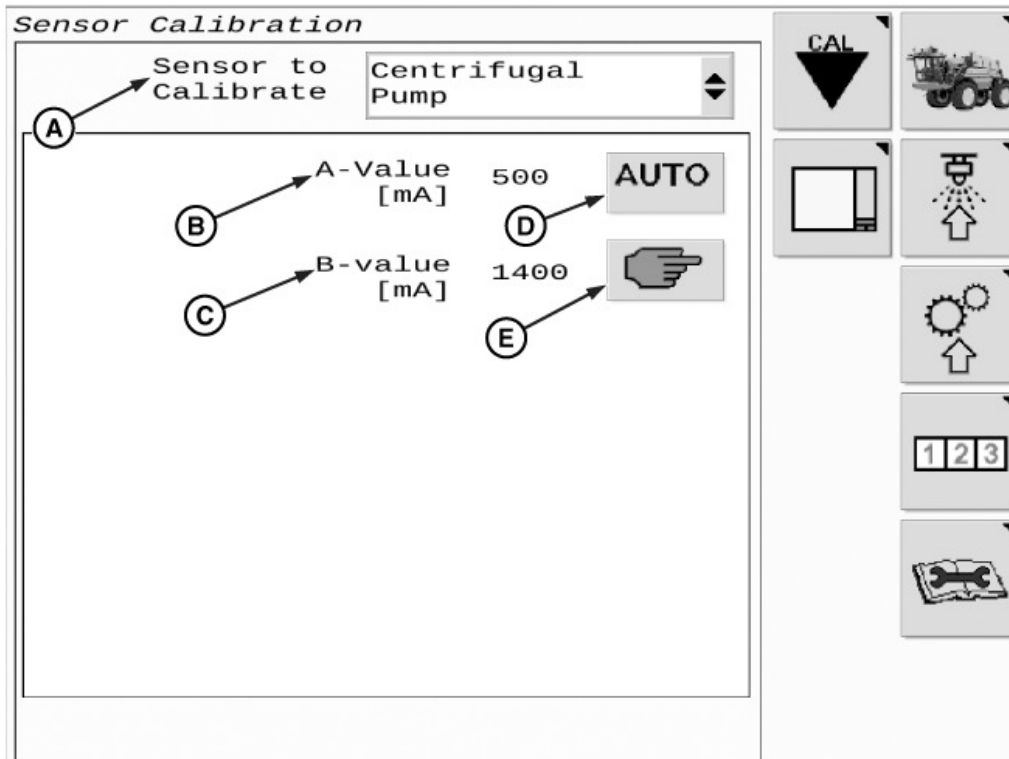
The H₂O Tank calibration menu can be entered via the drop down menu in the field **Sensor to Calibrate**. It will show the current setting and the AUTO calibration button. This calibration is to set the sensor to zero for an empty H₂O (Rinse Water) tank.

For the H₂O Tank Sensor Cal. make sure that clean

water tank is completely empty (no water on tank sensor). Press the **CAL** button (E) to start the calibration. When complete the display returns to the previous screen **Sensor Calibration**.

awqniwx,1723640143883-19-14AUG24

Centrifugal Pump Calibration



- A—Sensor to Calibrate Menu
- B—A-Value [mA] (Minimum defined Pressure)
- C—B-Value [mA] (Maximum defined Pressure)

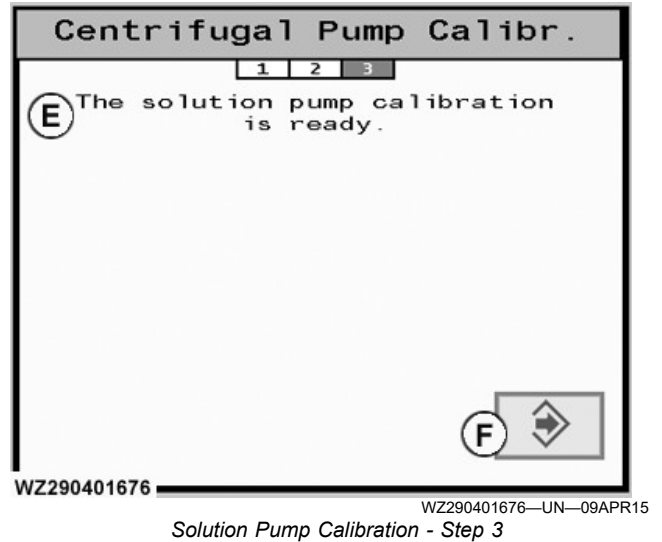
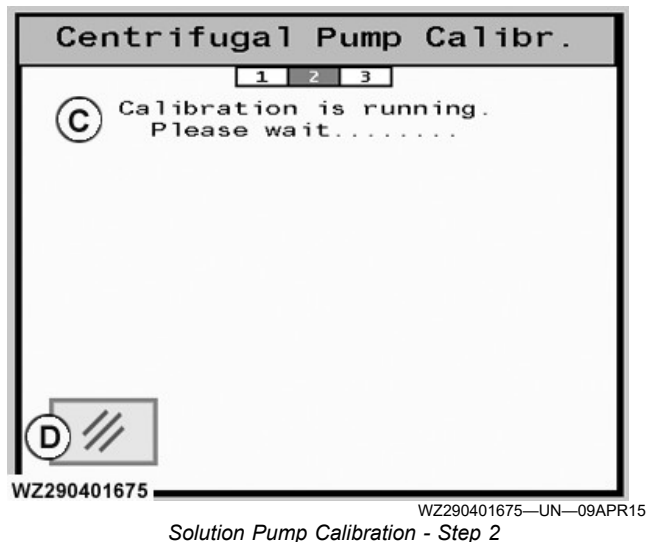
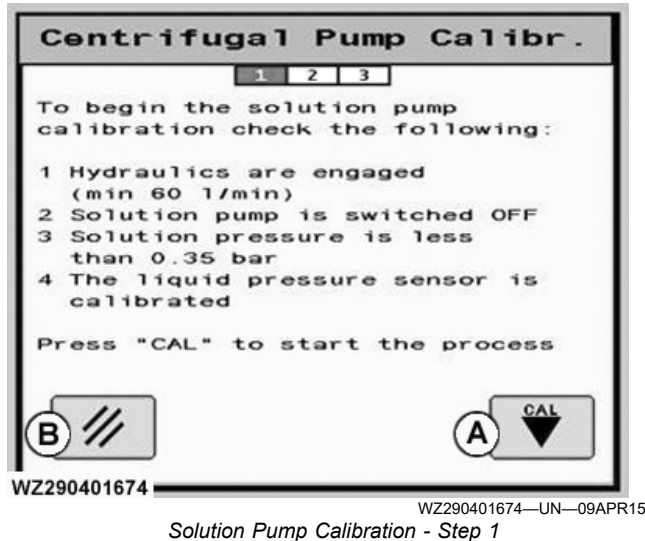
- D—AUTO Calibration Button
- E—Manual Calibration Button

TG644124—UN—22AUG24

The Centrifugal Solution Pump calibration menu can be entered via the drop-down menu in the field **Sensor to Calibrate**. The display shows the AUTO calibration button (D) and the current settings for the A-Value (B) and B-Value (C). If needed, the calibration values can be adjusted with the manual calibration button (E).

Expected value range for;

- A-Value from 450 through 750 [ADC]
- B-Value from 1250 through 1800 [ADC]



- A—Start Calibration Button
 B—Cancel Button
 C—Calibration is running. Please wait.
 D—Cancel Button
 E—The solution pump calibration is ready.
 F—Enter Button

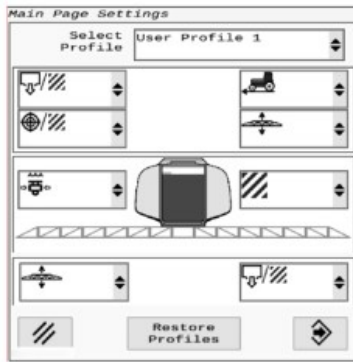
To calibrate the centrifugal pump the following conditions apply;

- Hydraulic oil is at operating temperature
- Engine at 2000 rpm
- Solution system and hoses do not contain any air
- Spray out for a minimum of 10 sec.
- Calibrate with at least 300 L of water in the solution tank

Follow the procedure for calibration once the conditions are satisfied. The calibration duration is about 3 mins. 30 secs.

- Press the AUTO calibrate button to enter the calibration menu.
- Step 1:** To begin the solution pump calibration check the following.
 - Hydraulics is engaged (MIN 60 L/min.)
 - Solution pump is switched OFF
 - Solution pressure is less than 0.35 bar
 - The liquid pressure sensor is calibrated
- Press "CAL" (A) to start the process.
- Step 2:** A message shows status of the process (C) Calibration is running. Please wait.
- Step 3:** The screen shows the message (E) The Solution pump calibration is ready.
- Press the **Enter** button (F) to complete the calibration.

Main Page Layout



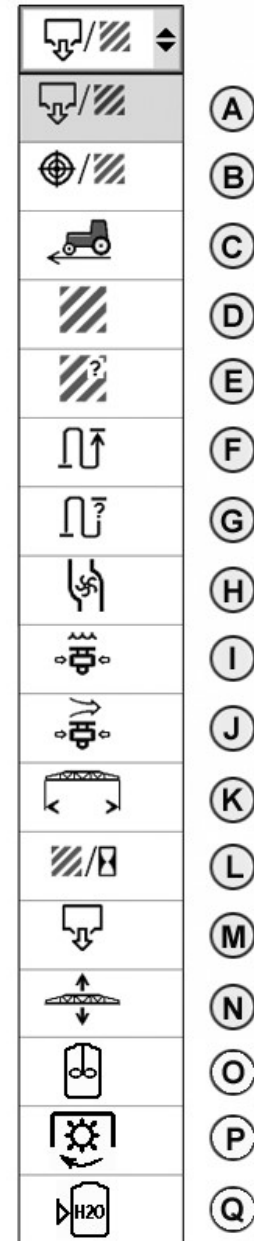
TG597399—UN—13OCT23

Main Page Layout

The **Main Page Layout** menu is entered via softkey [B] from **Machine Settings**.

There are six individual selectable fields with drop down menus and two fields set by the software in the lower part of the display area. Select in the desired position the required icon from the drop down menu. When you have finished your selection, save the changes by pressing **Enter**. A confirmation screen will appear. Follow the displayed instructions as to whether you want to **Just use the Layout** or **Save Layout as Profile**. The screen will return to the **Main page**.

Profiles



WZ290401581

WZ290401581—UN—08DEC11

Display Selection

- A—Applied rate
- B—Target rate
- C—Current speed
- D—Sprayed area
- E—Remaining area
- F—Sprayed distance
- G—Remaining distance
- H—Actual flow rate
- I—Liquid pressure
- J—Air pressure
- K—Spray boom working width
- L—Current performance
- M—Total sprayed volume
- N—Spray boom height (Automatic Boom Control™ only)

O—Agitation Operating Pressure
P—Pump Speed
Q—Rinse Water Tank Contents

Select Profile: in the (drop down menu) you can choose from the following options: **Standard**, **TF Machine**, **BoomTrac**, **TF + BoomTrac**, **User Profile 1** and **User Profile 2**. **Restore Default Profiles:** will reset all six profiles to the factory defaults.

Symbol List:

Cancel: returns to **Main page** without saving settings.

A — Applied rate: shows the actual application rate in L/ha.

B — Target rate: shows the target application rate in L/Ha. When spraying (main shut-off valve open), the operator can go directly to a boost selection screen (Boost Mode) by selecting softkey [D]. When not spraying, the operator can go to the **Job Settings** Menu by selecting softkey [G].

C — Current speed: shows the speed of the sprayer in km/h. If a simulated speed has been selected (see **General Settings** tab in **Machine Settings**) and the sprayer is not running, the simulated speed is shown.

D — Sprayed area: shows the sprayed area in hectares.

E — Remaining area: shows the remaining area that can be sprayed with the current tank content and actual application rate.

F — Sprayed distance: the distance traveled during the spraying of this field.

G — Remaining distance: shows the remaining distance that can be sprayed with the current tank content, boom width and actual application rate.

H — Actual flow rate: shows the actual total flow rate in L/min.

I — Liquid pressure: shows the liquid pressure in bar.

J — Air pressure: Shows air pressure.

K — Spray boom working width: shows the actual active working width of the boom.

L — Current performance: shows in ha/h the current performance at the present speed and settings.

M — Total sprayed volume: shows the sprayed volume of the current field in liters.

N — Spray boom height: (Automatic Boom Control only): shows the actual boom height when Automatic Boom Control is fitted.

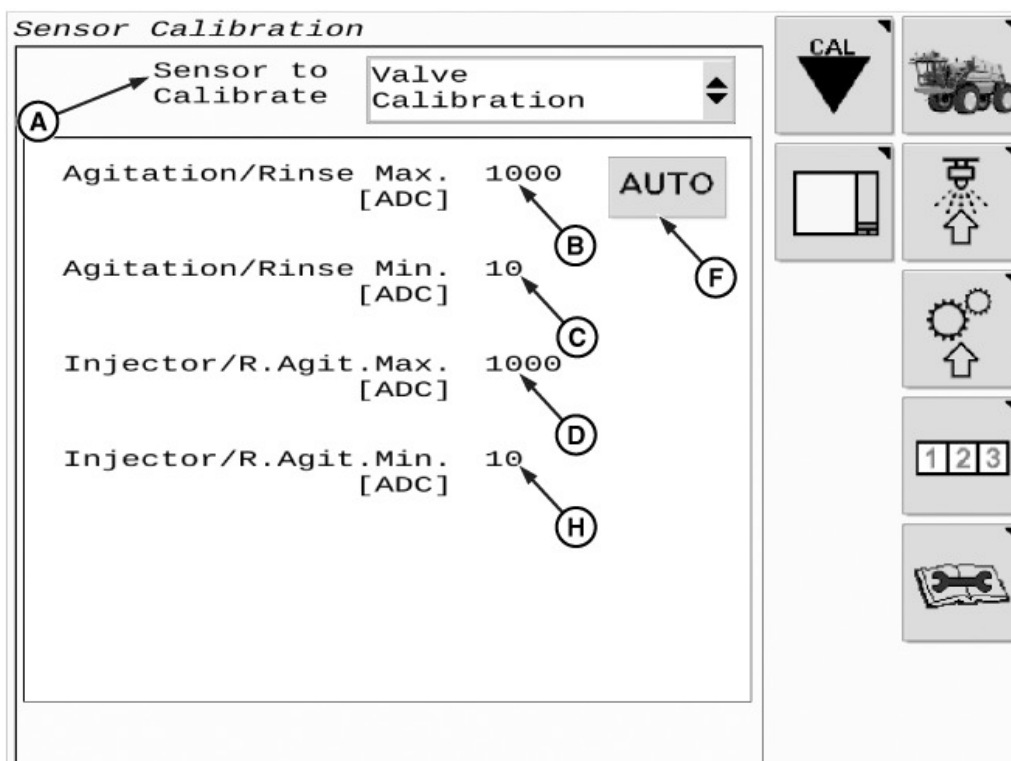
O — Agitation Operating Pressure: shows the working pressure of the agitation in bar.

P — Pump Speed: displays the pump shaft rotation speed in revolutions per minute.

Q — Rinse Water Tank Contents: shows the contents in liters.

cf4bjpj.1684837109529-19-24JAN25

Valve Calibration



TG644123—UN—22AUG24

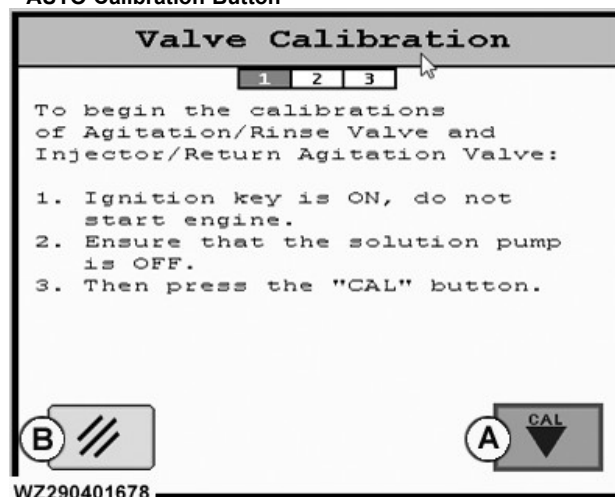
A—Sensor to Calibrate Menu
 B—Agitation/Rinse Max. [ADC]
 C—Agitation/Rinse Min. [ADC]

D—Injector/R.Agit.Max.
 E—Injector/R.Agit.Min.
 F—AUTO Calibration Button

The **Valve Calibration** menu can be entered via the drop-down menu in the field **Sensor to Calibrate**. The display shows the AUTO calibration button (F) and the current settings for the Agitation /Rinse Max. & Min. (B & C) and Injector/R.Agit.Max. & Min. (D & E).

The solution system has two valves which rely on feedback from an internal potentiometer. The calibration sets the minimum and maximum positions for each valve.

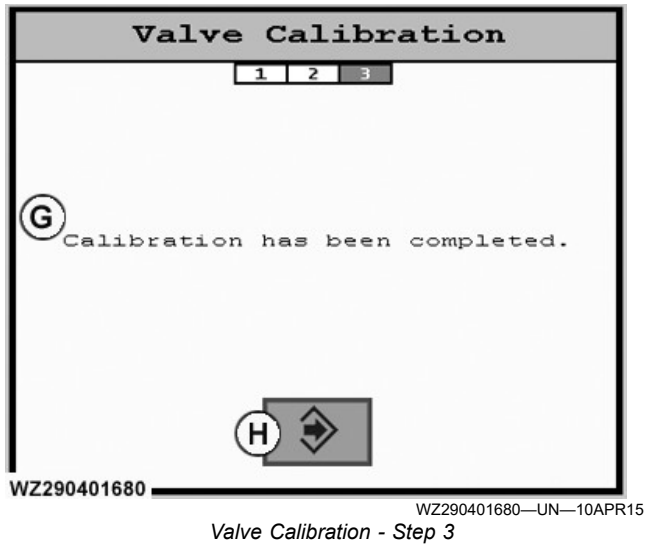
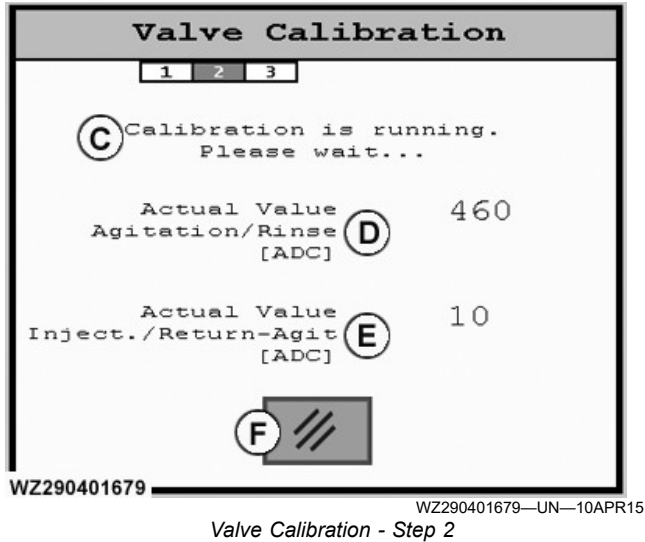
The **Agitation/Tank Rinse Valve** (32) and **Injector/Return Agitation Valve** (34) are listed in the **Functional Diagram** for the solution system. See **Functional Diagrams** in the front of the **Operation of the Machine** section for reference.



WZ290401678

WZ290401678—UN—10APR15

Valve Calibration - Step 1



A—Start Calibration Button

B—Cancel Button
C—Calibration is running. Please wait.
D—Actual Value Agitation/Rinse [ADC]
E—Actual Value Inject./Return-Agit. [ADC]
F—Cancel Button
G—Calibration has been completed.
H—Enter Button

1. Push the AUTO calibrate button to enter the calibration menu. See previous page for details.
2. Push the AUTO calibrate button to enter the calibration menu. See previous page for details
3. **Step 1:** To begin the calibrations of Agitation/Rinse Valve and Injector/Return Agitation Valve:
 - a. Ignition key is ON, **do not start** the engine.
 - b. Ensure that the solution pump is OFF
 - c. Push the “CAL” button.
4. **Step 2:** A message shows status of the process (C) Calibration is running. Please wait.
5. **Step 3:** The screen shows the message (G) Calibration has been completed.
6. Push the **Enter** button (H) to complete the calibration process.

awqniwx,1723640367941-19-14AUG24

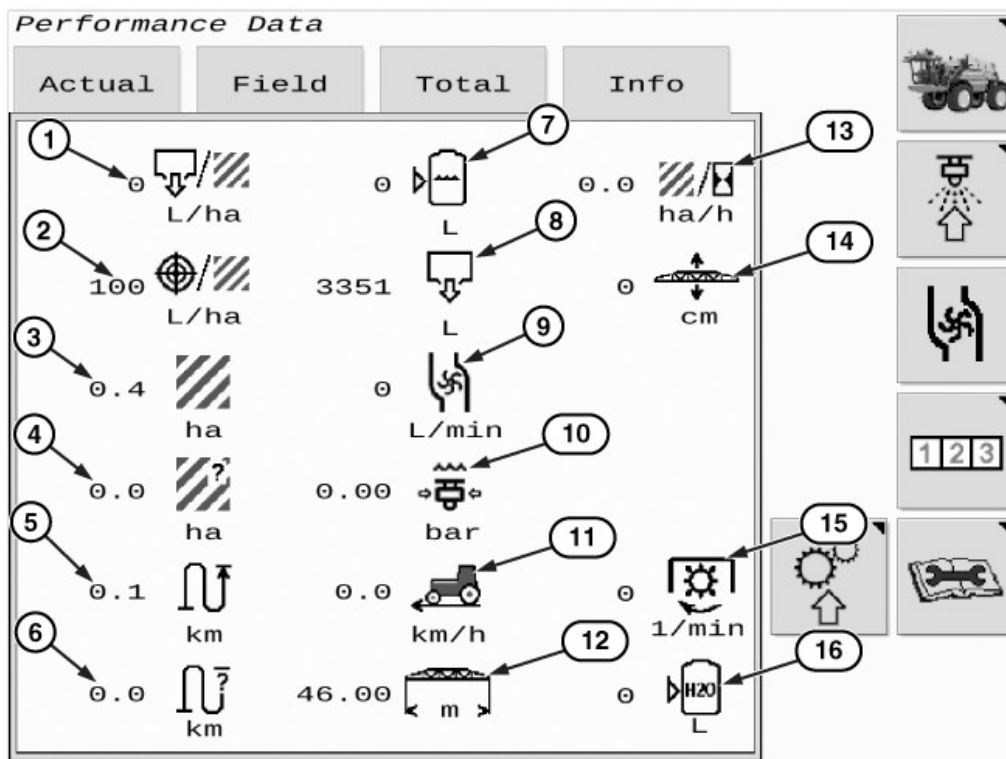
Performance Data

Performance Data can be found by selecting softkey [I] in the **Menu** field.

Performance Data page consists of four tabs: **Actual**, **Field**, **Total** and **Info**, which can be selected using the display control. **Actual** will always be the first screen to appear when softkey I has been selected.

cf4bipj,1684837133062-19-23MAY23

Info



Performance Data - Info

TG644122—UN—22AUG24

Info data can be found by selecting the (Info) tab in **Performance Data** (softkey [I]). This screen shows all actual data.

- 1—Applied rate (l/ha).
- 2—Target rate (l/ha).
- 3—Sprayed area (ha).
- 4—Remaining area (ha).
- 5—Sprayed distance (km).
- 6—Remaining distance (km).
- 7—Actual tank volume (l).
- 8—Sprayed volume (l).
- 9—Actual flow rate (l).
- 10—Liquid pressure (bar).
- 11—Current speed (km/h).
- 12—Working width (m).
- 13—Current performance (ha/h).

14—Boom height (cm) Automatic Boom Control only.

16—Pump Speed (l/min)

17—Rinse Water Tank Contents

awqniwx,1723640462576-19-14AUG24

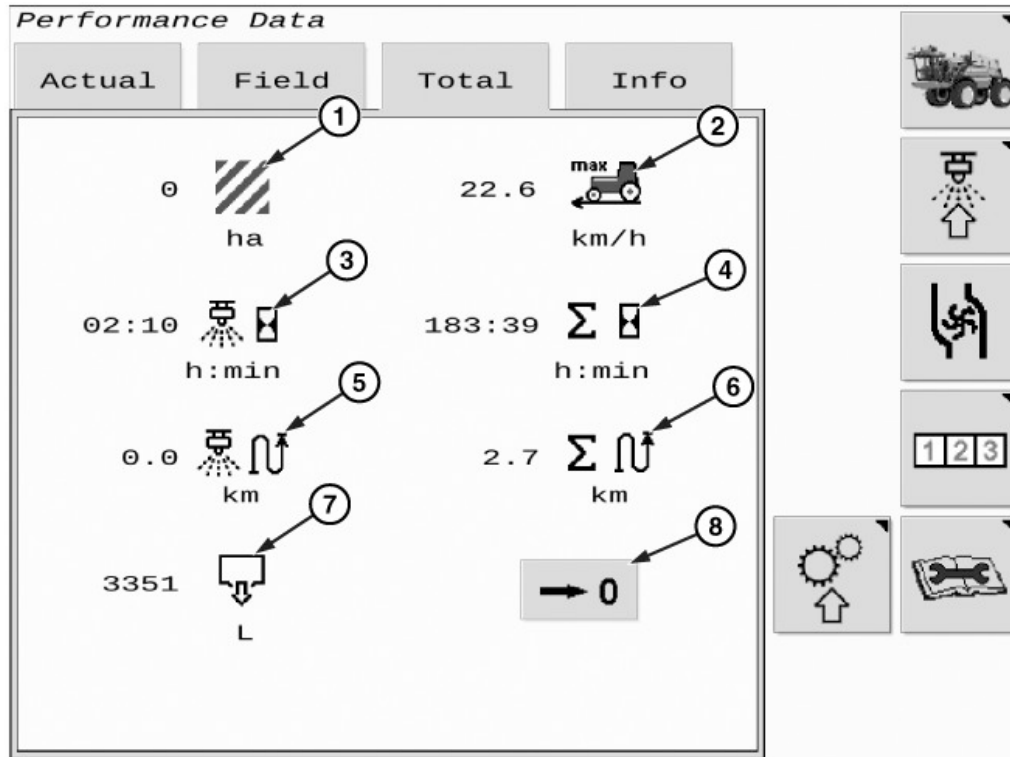
Diagnostics

Diagnostics can be found by selecting softkey [J] in the **Menu** field.

Diagnostics page consists of four tabs: **Info** readings, **Sensor** status, **Ctrl.U.** (Control Unit) status and recent **Problems**, which can also be selected using the display control. **Info Readings** will always be the first screen to appear when softkey [J] has been selected.

cf4bipj,1684837176537-19-23MAY23

Total



Performance Data - Total

TG644121—UN—22AUG24

Total data can be found by selecting the (Total) tab in **Performance Data** (softkey [I]). This screen shows the total data for all jobs done, since the sprayer has been installed.

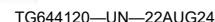
This page contains the following information stored in the memory:

- 1—Spray Area (ha): The number of hectares sprayed.
- 2—Maximum Speed (km/h): The maximum speed ever driven with the machine.
- 3—Spray Time (hrs): The total spraying time.

- 4—Total Time (hrs): The total time the controller (sprayer) has run.
- 5—Spray Distance (km): The total distance traveled during spraying.
- 6—Total Distance (km): The total distance traveled.
- 7—Spray Volume (l): The total number of liters sprayed.
- 8—Clear the Settings Button: all displayed values are reset to zero.

NOTE: Only the manufacturer can reset these data.

awqniwx,1723640527836-19-10OCT24

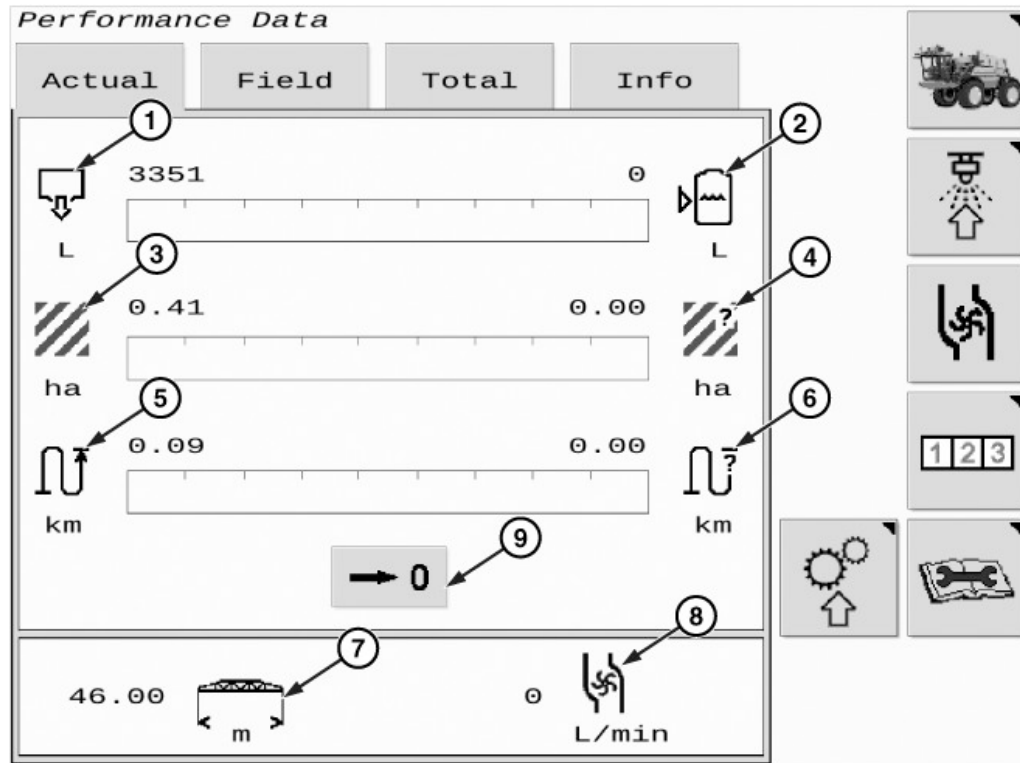


Performance Data - Field

Field: there are 16 different memories, where data can be stored. In **Job Settings**, the field memory (numbered from 1-16) can be entered where the data of the next job needs to be stored. Select the field (increment or decrement the field number with the scroll wheel on the display control); this lets the operator choose from one of the sixteen different memories.

- 4—Total Time (h:min): The total time the controller (sprayer) has run.
- 5—Spray Distance (km): The distance traveled during spraying.
- 6—Total Distance (km): The total distance traveled.
- 7 —Spray Volume (l): The total number of liters sprayed.
- 8—Clear the settings (zero values) for this field. A confirmation screen will appear. **Cancel** will leave the totals as they are, and **Enter** will clear the totals. If the memory is not cleared before a new job is started and this field is selected, then the data are cumulated. Automatically a warning appears that the field is about to be cleared. Press continue to clear the field. Button is only visible when the **Task Controller** in **Job 1** is disabled.

Actual



TG644119—UN—22AUG24

- 1—Sprayed volume
- 2—Remaining volume
- 3—Sprayed area
- 4—Remaining area
- 5—Sprayed distance

Actual performance data is found by selecting softkey [I] from the **Menu** field. It is the first tab to appear after activating the softkey.

The horizontal bar charts represent an overview of performance with regard to "What have I done" and "What can I do". The bars will recede to the left as spray

- 6—Remaining distance
- 7—Working width (actual)
- 8—Flow rate (actual)
- 9—Resets fields to zero

work is carried out, and the totals will update showing the machine performance.

Item (7) shows your operating working (section spraying) width. This will change dependent on which sections are open.

(8) shows the current flow rate in l/min.

awqniwx,1723642532884-19-14AUG24

Info Readings

Diagnostics

Info Sensor Ctrl.U. Problems

Device: Job Computer

Job Computer

Hardware Ver.: WZW10708
 Serial No.: 007353
 Software Ver.: 17.12
 Softw. Part No.: WZW11175

Machine Type: 340M
 Serial No.: V_340M
 Manufacturer: Deere & Company,
 Moline (USA)

Diagnostics - Info Readings

TG644118—UN—22AUG24

ISOBUS selection list

Job Computer

Multi-Function Control

BoomCtrl Controller

EPM Base

EPM Hydraulics 1

EPM Hydraulics 2

WZ290403000

WZ290403000—UN—08JUL20

Drop Down Selection List

Info Readings can be found by selecting the (Info Readings) tab in **Diagnostics** (softkey [J]).

This screen will give specific information on a **Device** via a drop down list. The data are determined by the machine type and the machine serial number in **Factory Settings**.

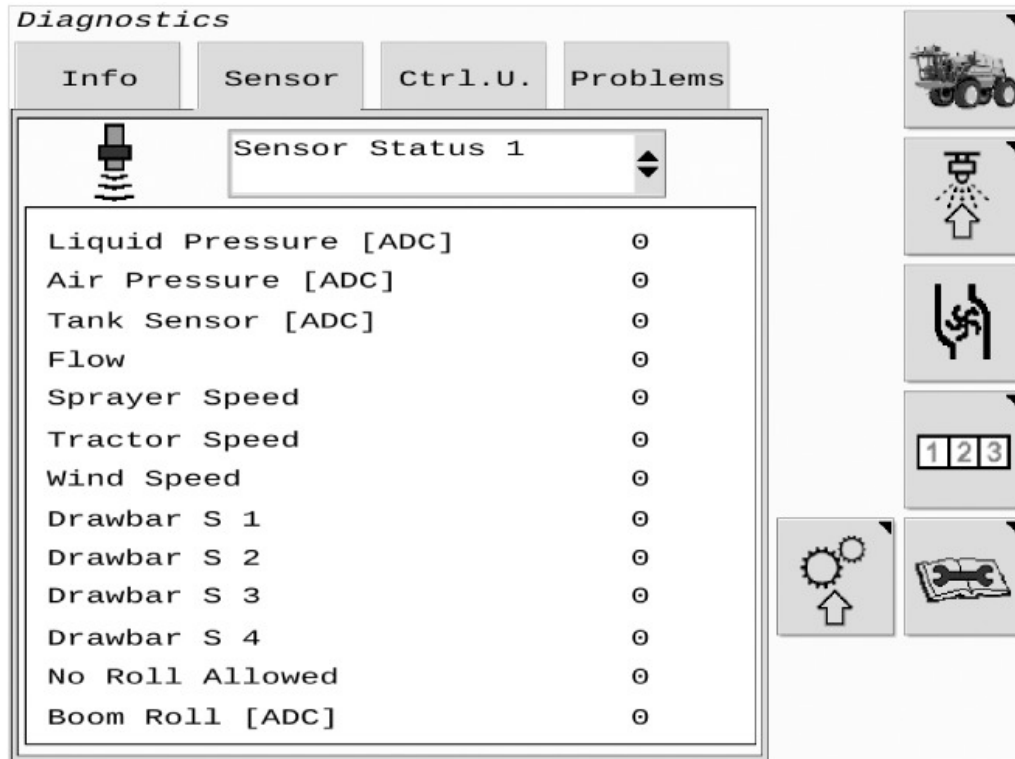
The devices which have been connected to the implement bus, will govern the contents of the drop down selection list.

On the left middle of the display is a button called **Change VT**. This is to move the application from the current display to another if the machine has multiple displays. On the next power up, the display that was last used for the application will be active. The button is only visible when multiple displays are connected to the CAN-bus of the machine.

Language button (middle right on the display) enables the operator to change the application displayed language.

awqniwx,1723642582872-19-14AUG24

Sensor Status



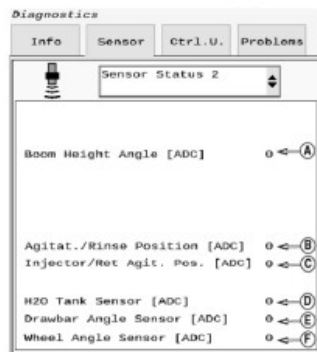
Diagnostic - Sensor Status 1

TG644117—UN—22AUG24

Sensor Status can be found by selecting the (Sensor Status) tab in **Diagnostics** (softkey [J]).

Via a drop down list you can select between the sensor status pages. In these pages the current status of all sensors fitted on the sprayer can be monitored.

Sensor Status 2

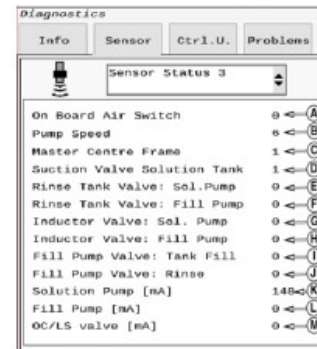


Diagnostic - Sensor Status 2

TG597408—UN—13OCT23

- A—Boom Height Angle [ADC]
- B—Agitat./Rinse Position [ADC]
- C—Injector/Ret Agit. Pos. [ADC]
- D—H₂O Tank Sensor [ADC]
- E—Drawbar Angle Sensor [ADC]
- F—Wheel Angle Sensor [ADC]

Sensor Status 3



Diagnostic - Sensor Status 3

TG597409—UN—13OCT23

- A—On Board Air Switch
- B—Pump Speed
- C—Master Center Frame
- D—Suction Valve Solution Tank
- E—Rinse Tank Valve: Sol. Pump
- F—Rinse Tank Valve: Fill Pump
- G—Inductor Valve: Sol. Pump
- H—Inductor Valve: Fill Pump
- I—Fill Pump Valve: Tank Fill
- J—Fill Pump Valve: Rinse
- K—Solution Pump [mA]
- L—Fill Pump [mA]
- M—OC/LS Valve [mA]

Sensor Status 4



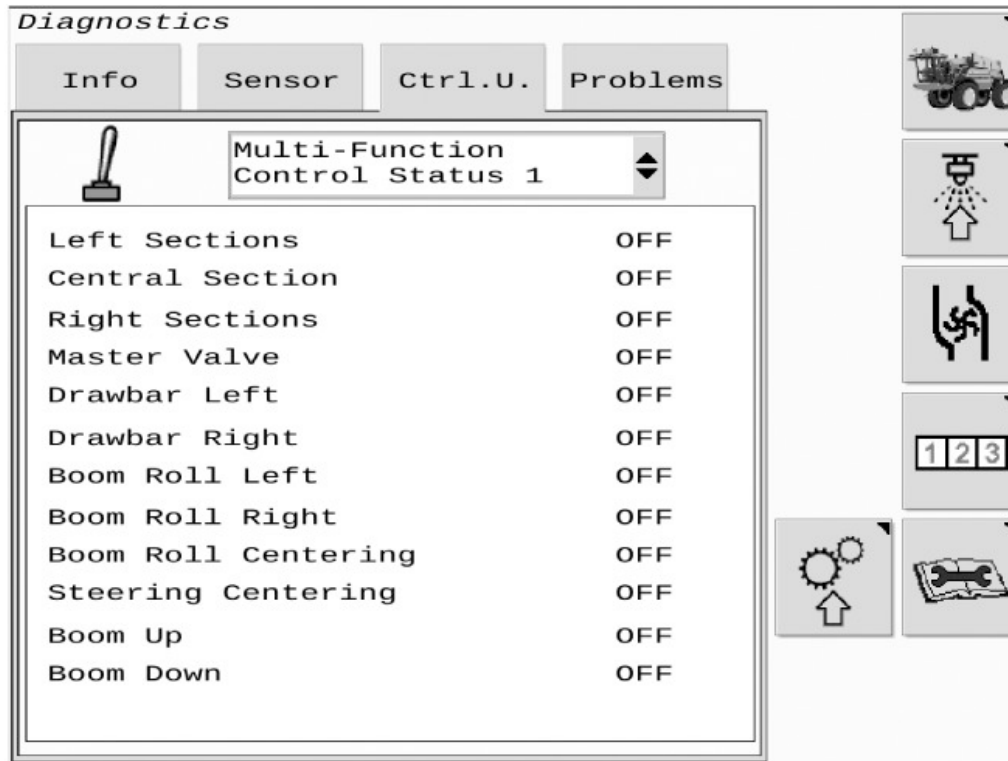
A—Boom Height L Outer [cm]
 B—Boom Height L Inner [cm]
 C—Boom Height R Inner [cm]
 D—Boom Height R Outer [cm]

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TG597410—UN—13OCT23

Diagnostic - Sensor Status 4

Ctrl. U. (Control Unit Status)



Diagnostics - Ctrl. U. (Control Unit Status)

TG644116—UN—22AUG24

Multi-Function Control Status (MFC) can be found by selecting the **Ctrl.U.** tab in **Diagnostics** (softkey [J]).

In these screens all switch functions can be monitored:

1. Select the **Multi-Function Control Status** page from the drop down list, there are two in all.
2. Turn the desired switch on and off and monitor the display to see if **Multi-Function Control Status** corresponds with switch setting.
3. If **Multi-Function Control Status** does not

correspond with switch setting, check switch fuse in the receiver box and replace if necessary. If **Multi-Function Control Status** and setting still do not correspond, check wiring and switch and replace as necessary.

Also in the drop down menu are:

- Load Center Status
- Regulation Valve Test
- Solution Command Valve Test 1

- Solution Command Valve Test 2

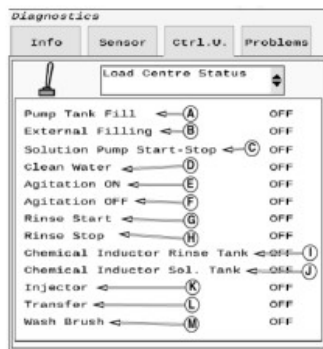
MFC Status (Joystick Status) Page 2



TG597412—UN—13OCT23

Diagnostics - Multi-Function Control Status 2

Load Center Status

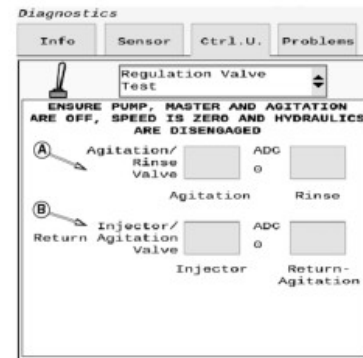


TG597413—UN—13OCT23

Ctrl. U. - Load Center Status

- A—Pump Tank Fill
- B—External Filling
- C—Solution Pump Start-Stop
- D—Clean Water
- E—Agitation ON
- F—Agitation OFF
- G—Rinse Start
- H—Rinse Stop
- I—Chemical Inductor Rinse Tank
- J—Chemical Inductor Sol. Tank
- K—Injector
- L—Transfer
- M—Wash Brush

Regulation Valve Test



TG597414—UN—13OCT23

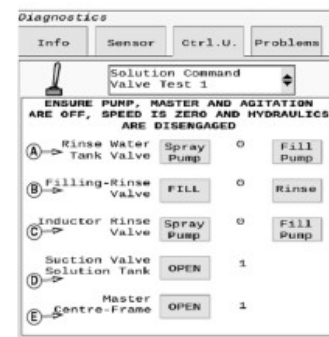
Ctrl. U. - Regulation Valve Test

- A—Agitation/Rinse Valve
- B—Injector/Return Agitation Valve

IMPORTANT: Ensure Pump and Master and Agitation are OFF, Speed is zero and Hydraulics are Disengaged.

While the button + (plus) or - (minus) is pressed the valve moves in the direction of the function indicated under the button until the valve has fully turned. The valve will stay in the changed position until changed back with the buttons or power is cycled on the sprayer.

Solution Command Valve Test 1



TG597415—UN—13OCT23

Ctrl. U. - Solution Command Valve Test 1

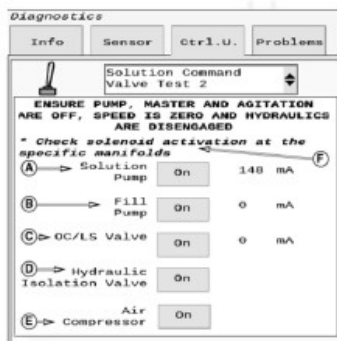
- A—Rinse Water Tank Valve - Spray Pump & Fill Pump
- B—Filling Rinse Valve - Fill & Rinse
- C—Inductor Rinse Valve - Spray Pump & Fill Pump
- D—Suction Valve Solution Tank - Open
- E—Master Center-Frame - Open

IMPORTANT: Ensure Pump and Master and Agitation are OFF, Speed is zero and Hydraulics are Disengaged.

The valve changes state to what the text on the button reads while it is pressed and held. When the button is released the valve returns to the original position. The feedback value is displayed in between the function

buttons. The value is based on feedback from the valve, and indicates (0 or 1) even if the valve is open or not.

Solution Command Valve Test 2



TG597416—UN—13OCT23

Ctrl. U. - Solution Command Valve Test 2

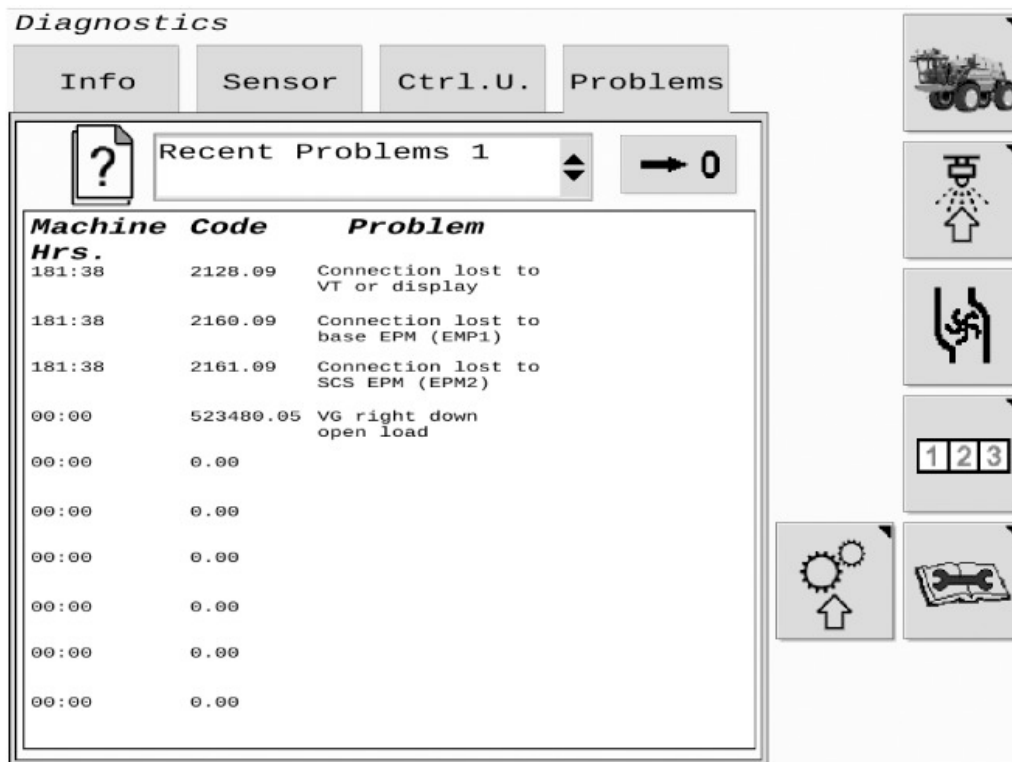
- A—Solution Pump mA
- B—Fill Pump mA
- C—OC/LS Valve mA
- D—Hydraulic Isolation Valve
- E—Air Compressor
- F—Check solenoid activation at the specific manifolds

IMPORTANT: Ensure Pump and Master and Agitation are OFF, Speed is zero and Hydraulics are Disengaged.

The solenoid valve changes state to what the button text reads. One press of the button turns the solenoid On. When the button is released the valve returns to the original position. Check solenoid activation (E) at the specific manifolds.

awqniwx,1723642694042-19-10OCT24

Recent Problems



Diagnostics - Recent Problems

TG644115—UN—22AUG24

Recent Problems can be found by selecting the (Recent Problems) tab in **Diagnostics** (softkey [J]).

Alarm Codes: the Alarm Codes are stored on one or more pages.

Clear Alarm Codes: to clear codes from the screen, select the **Reset** button located under **Recent Problems** tab.

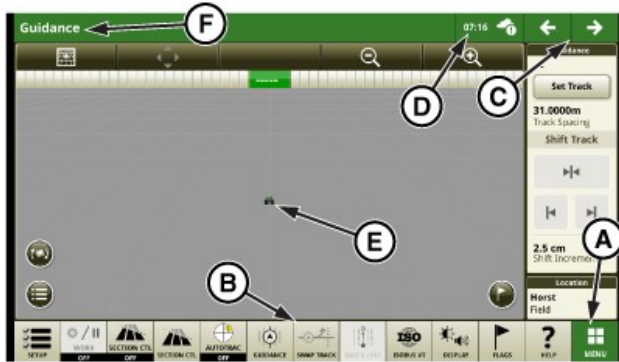
A new alarm is only stored if it was not previously stored during the last 12 minutes. This prevents filling the memory with the same alarm message when it keeps repeating. For each stored alarm code, the total time is also stored (time alarm occurred). The most recent alarm codes are shown first. If they do not fit on the first page an extra page is added.

All trouble codes can be found in the **Warning Screen**

Codes list in **GreenStar Sprayer Control System** section.

awqniwx,1723642348317-19-14AUG24

Display Run Page / Section Control (Option)



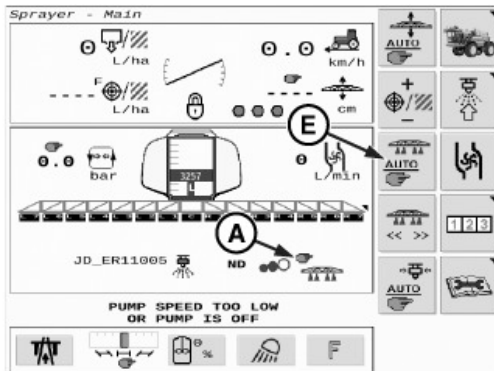
TG597418—UN—20OCT23

Display Run Page on Gen5 display - Example View

- A—Menu
- B—Shortcut Softkeys
- C—Next or Previous Run Page buttons
- D—Status Center
- E—Run Page
- F—Title Bar / Run Page Selection

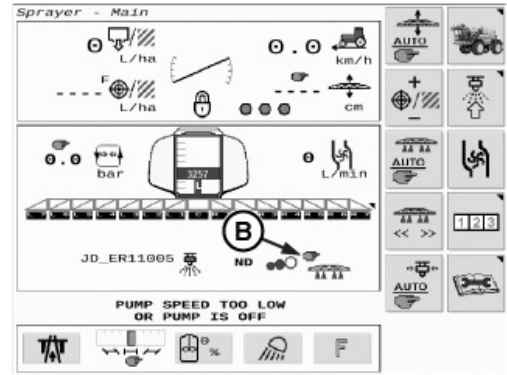
For the use and more explanation of the Run Page, refer to the John Deere Display manual.

Section Control Summary



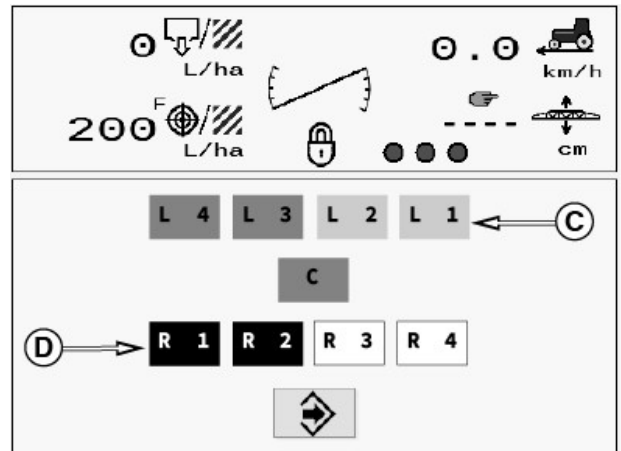
TG644112—UN—22AUG24

Caution Icon



TG644113—UN—22AUG24

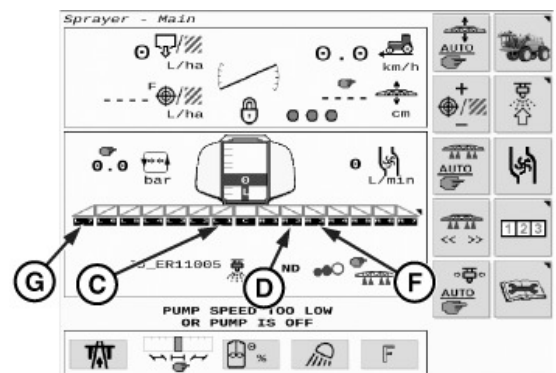
Pause Icon



WZ290403015

WZ290403015—UN—08JUL20

Pop-Up Screen - Manually Disabled Section (RED) with Section Control Active



TG644114—UN—22AUG24

Example Screen to show the various Enabled and Disabled Sections with Section Control Active

- A—Caution Icon
- B—Pause Icon
- C—RED Manually Disabled Section
- D—Black Enabled Section
- E—Application Section Control Automatic/Manual Softkey
- F—White Disabled Section from John Deere Section Control
- G—Gray IBS (Index Boom Sections) Disabled Section (Black text in the section)

A basic summary of the **John Deere Section Control** display features and operation is listed in the following.

For addition information, refer to the Operator's Manual supplied with the application.

Summary of Application Features	
Application Section Control Manual & Automatic Softkey (E)	Changing state between either Manual or Automatic mode when the sections are disabled (white) the IBS Reset button needs to be pressed to restart spraying again. This is a safety feature to stop inadvertent automatic spraying without the operator's knowledge with Section Control active.
Caution Icon (A)	With the Section Control active and sections spraying, when the sprayer is stopped (no movement) the sections turn white on the display and spraying is halted. A caution icon appears on-screen. Note: When the spray moves again spraying starts again automatically.
Pause Icon (B)	With, the Section Control active and the SprayMaster Switch selected to OFF (on the MFC) by the operator, the pause icon appears on the display. The Spray Sections turn white from the black state on the display to spraying has been halted.
RED Disabled Section (C)	When sections are disabled manually from the boom pop-up screen the disabled section are shown in RED (C). Section control does not use the RED sections. Section Control only works with enabled sections (Black). With the Pop-up screen visible on the display, the IBS Reset Button only enables all sections here even if they are RED. Note: In, another screen on the display the IBS Reset Button only resets the White disabled sections.
Gray Disabled Section (G)	With the Section Control enabled, pressing either the left or right IBS disables sections from the boom outer sections. The sections turn Gray to show that the IBS buttons disabled these sections. The left IBS button disables sections from the right side of the boom. The Right IBS button disables the sections from the left side of the boom. - Once a section has been disabled pressing the opposite IBS button enables the section again. - To enable all Gray sections in a single operation, press the IBS Reset button (middle button). Refer to Operating IBS (Index Boom Sections) in the Operation of the Machine section.
White Disabled Section (F)	A White disabled section indicates that either John Deere Section Control has switched the section Off.

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Warning Screen Codes

The following table is a list of the failure codes displayed on the screen of the sprayer.

Failure Mode Indicator (FMI), located on the top right of the warning screen.

SPN Number	FMI Number	Code Description	FMI Name
0	00	Unknown Code - See your John Deere dealer or other service provider.	
168	3	High Battery Voltage	Voltage Above Normal, or Shorted to High Source
168	4	Low Battery Voltage	Voltage Below Normal, or Shorted to Low Source
639	14	CAN Error - CAN Message Overflow	CAN Bus 1 is offline, a bus-off condition has occurred
1044	5	Solution pump open load	Current Below Normal or Open Circuit
1044	6	Solution pump short to ground or over current	Current Above Normal or Grounded Circuit
1883	0	PTO Speed Too High	Data Valid but Above Normal Operational Range - Most Severe Level
2128	9	Connection to VT Lost (Display)	Abnormal Update Rate
2160	9	Connection To EPM1 Lost (Base)	Abnormal Update Rate
2161	9	Connection To EPM2 Lost (Hydraulic 1)	Abnormal Update Rate
2162	9	Connection To EPM3 Lost (Hydraulic 2)	Abnormal Update Rate
2163	9	Connection To EPM4 Lost (option)	Abnormal Update Rate
2164	9	Connection To EPM5 Lost (TF-1)	Abnormal Update Rate
2165	9	Connection To EPM6 Lost (TF-2)	Abnormal Update Rate
2199	9	Connection To Control Unit Lost (MFC)	Abnormal Update Rate
2205	9	Connection To BoomTrac Lost	Abnormal Update Rate
2394	5	Work Light Open Load	Current Below Normal or Open Circuit
2394	6	Work Light short to ground or over current.	Current Above Normal or Grounded Circuit
3133	0	Solution pump pressure too high	

MSpray System

SPN Number	FMI Number	Code Description	FMI Name
3133	1	Solution pump dry run shut off The solution pump automatically shuts off by the system to prevent damage.	Data Valid but Below Normal Operating Range - Most Severe Level
520250	6	Master Valve Air short to ground or over current.	Current Above Normal or Grounded Circuit
520251	5	Section Valve Center Air open load	Current Below Normal or Open Circuit
520251	6	Section Valve Center Air short to ground or over current.	Current Above Normal or Grounded Circuit
520252	5	Section Valve Air R7 open load	Current Below Normal or Open Circuit
520252	6	Section Valve Air R7 short to ground or over current.	Current Above Normal or Grounded Circuit
520253	5	Section Valve Air R6 open load	Current Below Normal or Open Circuit
520253	6	Section Valve Air R6 short to ground or over current.	Current Above Normal or Grounded Circuit
520254	5	Section Valve Air R5 open load	Current Below Normal or Open Circuit
520254	6	Section Valve Air R5 short to ground or over current.	Current Above Normal or Grounded Circuit
520300	2	Left BoomTrac Sensor out of range Below 5 mA and above 19 mA are out of range, signal strength attenuated.	Data Erratic, Intermittent or Incorrect
520301	2	Right BoomTrac Sensor out of range. Below 5 mA and above 19 mA are out of range, signal strength attenuated.	Data Erratic, Intermittent or Incorrect
520402	5	Pendulum Lock On open load	Current Below Normal or Open Circuit
520402	6	Pendulum Lock On short to ground or over current.	Current Above Normal or Grounded Circuit
520403	5	Pendulum Lock Off open load	Current Below Normal or Open Circuit
520403	6	Pendulum Lock Off short to ground or over current.	Current Above Normal or Grounded Circuit
520436	6	Chemical Inductor Valve short to ground or over current	Current Above Normal or Grounded Circuit
520445	6	Sump Valve 2 to Tank short to ground or over current	Current Above Normal or Grounded Circuit
520503	5	Right Outer Tip open load	Current Below Normal or Open Circuit
520503	6	Right Outer Tip short to ground or over current.	Current Above Normal or Grounded Circuit
520504	5	Left Outer Tip open load	Current Below Normal or Open Circuit
520504	6	Left Outer Tip short to ground or over current.	Current Above Normal or Grounded Circuit
520601	5	Free Function or beacon light open load.	Current Below Normal or Open Circuit
520601	6	Free Function or beacon light short to ground or over current.	Current Above Normal or Grounded Circuit
520704	0	Pump 1 Oil Level High	Data Valid but Above Normal Operational Range - Most Severe Level
520704	1	Pump 1 Oil Level Low	Data Valid but Below Normal Operational Range - Most Severe Level
520705	0	Pump 2 Oil Level High	Data Valid but Above Normal Operational Range - Most Severe Level
520705	1	Pump 2 Oil Level Low	Data Valid but Below Normal Operational Range - Most Severe Level
521316	6	Air Regulator Bridge A short to ground or over current.	Current Above Normal or Grounded Circuit
521317	6	Air Regulator Bridge B short to ground or over current	Current Above Normal or Grounded Circuit
521318	6	Agitation Regulator Bridge B short to ground or over current.	Current Above Normal or Grounded Circuit
521319	6	Agitation Regulator Bridge A short to ground or over current.	Current Above Normal or Grounded Circuit
521320	5	TF-Compressor ON valve open load	Current Below Normal or Open Circuit
521320	6	TF-Compressor ON valve short to ground or over current.	Current Above Normal or Grounded Circuit
521325	5	Nozzle Bank 2 open load.	Current Below Normal or Open Circuit
521325	6	Nozzle Bank 2 short to ground or over current	Current Above Normal or Grounded Circuit
521326	6	Power Section R1 to R5 short to ground or over current	Current Above Normal or Grounded Circuit
521327	6	Power Section L1 to L5 short to ground or over current.	Current Above Normal or Grounded Circuit
521328	6	Power Section C, L6-7, R6-7 short to ground or over current.	Current Above Normal or Grounded Circuit
521329	6	Power Solution Command Valves short to ground or over current	Current Above Normal or Grounded Circuit

MSpray System

SPN Number	FMI Number	Code Description	FMI Name
521330	6	Power Solution Command Switches short to ground or over current.	Current Above Normal or Grounded Circuit
521331	6	Pressure Regulator 1 Bridge A short to ground or over current	Current Above Normal or Grounded Circuit
521332	6	Pressure Regulator 1 Bridge B short to ground or over current.	Current Above Normal or Grounded Circuit
521333	6	Pressure Regulator 2 Bridge A short to ground or over current.	Current Above Normal or Grounded Circuit
521334	6	Pressure Regulator 2 Bridge B short to ground or over current	Current Above Normal or Grounded Circuit
521337	5	Auto Dilute Pump Hydraulic Valve open load	Current Below Normal or Open Circuit
521337	6	Auto Dilute Pump Hydraulic Valve short to ground or over current.	Current Above Normal or Grounded Circuit
521338	5	Centrifugal Filling hydraulic valve open load	Current Below Normal or Open Circuit
521338	6	Centrifugal Filling hydraulic valve short to ground or over current.	Current Above Normal or Grounded Circuit
521339	5	Tank Rinse valve open load	Current Below Normal or Open Circuit
521339	6	Tank Rinse Valve short to ground or over current	Current Above Normal or Grounded Circuit
521343	6	Injector Valve Chemical Inductor short to ground or over current.	Current Above Normal or Grounded Circuit
521344	6	Power Master Valve TF short to ground or over current	Current Above Normal or Grounded Circuit
521345	5	Circulation Return Valve (Tank/Pump selector) open load.	Current Below Normal or Open Circuit
521345	6	Circulation Return Valve (Tank/Pump selector) short to ground or over current.	Current Above Normal or Grounded Circuit
521347	5	On Board Air Compressor open load	Current Below Normal or Open Circuit
521347	6	On Board Air Compressor short to ground or over current.	Current Above Normal or Grounded Circuit
521353	5	Master Valve Circulation (rear) open load	Current Below Normal or Open Circuit
521353	6	Master Valve Circulation (rear) short to ground or over current	Current Above Normal or Grounded Circuit
521354	5	Clean Water Valve open load	Current Below Normal or Open Circuit
521354	6	Clean Water Valve short to ground or over current	Current Above Normal or Grounded Circuit
521355	5	Sump Valve 1 to Tank open load	Current Below Normal or Open Circuit
521355	6	Sump Valve 1 to Tank short to ground or over current	Current Above Normal or Grounded Circuit
521356	5	Sump Valve 1 to Drain open load	Current Below Normal or Open Circuit
521356	6	Sump Valve 1 to Drain short to ground or over current	Current Above Normal or Grounded Circuit
521357	5	Hydraulic Pump Drive Valve open load	Current Below Normal or Open Circuit
521357	6	Hydraulic Pump Drive Valve short to ground or over current	Current Above Normal or Grounded Circuit
521358	6	Sump Valve 2 to Centrifugal Filling short to ground or over current	Current Above Normal or Grounded Circuit
522939	9	Solution Pump Speed Sensor Error	
522939	10	Solution Pump Speed Sensor; speed sensor operating erratically The pump speed sensor is defective or the solution pump is not running/turning	Abnormal Rate of Change
523219	6	Power M1, M2, Edge Nozzle, Agitation, Circulation return short to ground or over current	Current Above Normal or Grounded Circuit
523382	5	Agitation Open Load	Current Below Normal or Open Circuit
523382	6	Agitation short to ground or over current.	Current Above Normal or Grounded Circuit
523392	5	Section Valve Air R4 open load	Current Below Normal or Open Circuit
523392	6	Section Valve Air R4 short to ground or over current.	Current Above Normal or Grounded Circuit
523395	5	Section Valve Air R3 open load	Current Below Normal or Open Circuit
523395	6	Section Valve Air R3 short to ground or over current.	Current Above Normal or Grounded Circuit
523396	5	Section Valve Air R2 open load	Current Below Normal or Open Circuit
523396	6	Section Valve Air R2 short to ground or over current.	Current Above Normal or Grounded Circuit

MSpray System

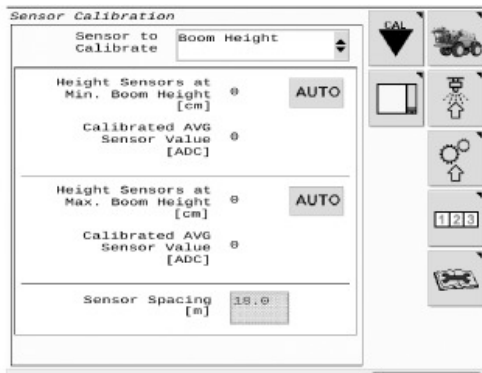
SPN Number	FMI Number	Code Description	FMI Name
523397	5	Section Valve Air R1 open load	Current Below Normal or Open Circuit
523397	6	Section Valve Air R1 short to ground or over current	Current Above Normal or Grounded Circuit
523398	5	Section Valve Air L7 open load	Current Below Normal or Open Circuit
523398	6	Section Valve Air L7 short to ground or over current	Current Above Normal or Grounded Circuit
523399	5	Section Valve Air L6 open load	Current Below Normal or Open Circuit
523399	6	Section Valve Air L6 short to ground or over current	Current Above Normal or Grounded Circuit
523400	5	Section Valve Air L5 open load	Current Below Normal or Open Circuit
523400	6	Section Valve Air L5 short to ground or over current	Current Above Normal or Grounded Circuit
523401	5	Section Valve Air L4 open load	Current Below Normal or Open Circuit
523401	6	Section Valve Air L4 short to ground or over current.	Current Above Normal or Grounded Circuit
523402	5	Section Valve Air L3 open load	Current Below Normal or Open Circuit
523402	6	Section Valve Air L3 short to ground or over current	Current Above Normal or Grounded Circuit
523403	5	Section Valve Air L2 open load	Current Below Normal or Open Circuit
523403	6	Section Valve Air L2 short to ground or over current	Current Above Normal or Grounded Circuit
523404	5	Section Valve Air L1 open load	Current Below Normal or Open Circuit
523404	6	Section Valve Air L1 short to ground or over current.	Current Above Normal or Grounded Circuit
523409	5	Drawbar Right open load	Current Below Normal or Open Circuit
523409	6	Drawbar Right short to ground or over current.	Current Above Normal or Grounded Circuit
523410	5	Drawbar Left open load	Current Below Normal or Open Circuit
523410	6	Drawbar Left short to ground or over current.	Current Above Normal or Grounded Circuit
523411	5	Height Adjustment Up open load	Current Below Normal or Open Circuit
523411	6	Height Adjustment Up short to ground or over current.	Current Above Normal or Grounded Circuit
523412	5	Boom Tilt Left open load.	Current Below Normal or Open Circuit
523412	6	Boom Tilt Left short to ground or over current.	Current Above Normal or Grounded Circuit
523413	5	Boom Tilt Right open load	Current Below Normal or Open Circuit
523413	6	Boom Tilt Right short to ground or over current	Current Above Normal or Grounded Circuit
523414	5	Height Adjustment Down open load	Current Below Normal or Open Circuit
523414	6	Height Adjustment Down short to ground or over current	Current Above Normal or Grounded Circuit
523417	5	OC/LS Solenoid open load	Current Below Normal or Open Circuit
523417	6	OC/LS Solenoid short to ground or over current.	Current Above Normal or Grounded Circuit
523418	5	Horn open load	Current Below Normal or Open Circuit
523418	6	Horn short to ground or over current	Current Above Normal or Grounded Circuit
523422	5	Section Valve Center Water open load	Current Below Normal or Open Circuit
523422	6	Section Valve Center Water short to ground or over current.	Current Above Normal or Grounded Circuit
523423	5	Right Fence/Edge Spray Nozzle open load	Current Below Normal or Open Circuit
523423	6	Right Fence/Edge Spray Nozzle short to ground or over current.	Current Above Normal or Grounded Circuit
523424	5	Section Valve Water R7 open load	Current Below Normal or Open Circuit
523424	6	Section Valve Water R7 short to ground or over current.	Current Above Normal or Grounded Circuit
523426	5	Section Valve Water R6 open load	Current Below Normal or Open Circuit
523426	6	Section Valve Water R6 short to ground or over current	Current Above Normal or Grounded Circuit
523430	5	Section Valve Water R5 open load	Current Below Normal or Open Circuit
523430	6	Section Valve Water R5 short to ground or over current	Current Above Normal or Grounded Circuit
523432	5	Section Valve Water R4 open load	Current Below Normal or Open Circuit
523432	6	Section Valve Water R4 short to ground or over current	Current Above Normal or Grounded Circuit
523434	5	Section Valve Water R3 open load	Current Below Normal or Open Circuit
523434	6	Section Valve Water R3 short to ground or over current.	Current Above Normal or Grounded Circuit
523435	5	Section Valve Water R2 open load	Current Below Normal or Open Circuit
523435	6	Section Valve Water R2 short to ground or over current	Current Above Normal or Grounded Circuit
523439	5	Section Valve Water R1 open load	Current Below Normal or Open Circuit
523439	6	Section Valve Water R1 short to ground or over current	Current Above Normal or Grounded Circuit

MSpray System

SPN Number	FMI Number	Code Description	FMI Name
523443	5	Left Fence/Edge Spray Nozzle open load	Current Below Normal or Open Circuit
523443	6	Left Fence/Edge Spray Nozzle short to ground or over current.	Current Above Normal or Grounded Circuit
523444	5	Section Valve Water L7 open load	Current Below Normal or Open Circuit
523444	6	Section Valve Water L7 short to ground or over current	Current Above Normal or Grounded Circuit
523446	5	Section Valve Water L6 open load	Current Below Normal or Open Circuit
523446	6	Section Valve Water L6 short to ground or over current	Current Above Normal or Grounded Circuit
523448	5	Section Valve Water L5 open load	Current Below Normal or Open Circuit
523448	6	Section Valve Water L5 short to ground or over current.	Current Above Normal or Grounded Circuit
523450	5	Section Valve Water L4 open load	Current Below Normal or Open Circuit
523450	6	Section Valve Water L4 short to ground or over current.	Current Above Normal or Grounded Circuit
523452	5	Section Valve Water L3 open load	Current Below Normal or Open Circuit
523452	6	Section Valve Water L3 short to ground or over current.	Current Above Normal or Grounded Circuit
523453	5	Section Valve Water L2 open load	Current Below Normal or Open Circuit
523453	6	Section Valve Water L2 short to ground or over current.	Current Above Normal or Grounded Circuit
523454	5	Section Valve Water L1 open load	Current Below Normal or Open Circuit
523454	6	Section Valve Water L1 short to ground or over current	Current Above Normal or Grounded Circuit
523465	5	Boom Fold Tip Left Out open load	Current Below Normal or Open Circuit
523465	6	Boom Fold Tip Left Out short to ground or over current	Current Above Normal or Grounded Circuit
523466	5	Boom Fold Tip Left In open load	Current Below Normal or Open Circuit
523466	6	Boom Fold Tip Left In short to ground or over current.	Current Above Normal or Grounded Circuit
523467	5	Boom Fold Left In open load	Current Below Normal or Open Circuit
523467	6	Boom Fold Left In short to ground or over current	Current Above Normal or Grounded Circuit
523468	5	Boom Fold Left Out open load	Current Below Normal or Open Circuit
523468	6	Boom Fold Left Out short to ground or over current.	Current Above Normal or Grounded Circuit
523469	5	Boom Fold Right Out open load	Current Below Normal or Open Circuit
523469	6	Boom Fold Right Out short to ground or over current	Current Above Normal or Grounded Circuit
523470	5	Boom Fold Right In open load	Current Below Normal or Open Circuit
523470	6	Boom Fold Right In short to ground or over current	Current Above Normal or Grounded Circuit
523471	5	Boom Fold Tip Right In open load	Current Below Normal or Open Circuit
523471	6	Boom Fold Tip Right In short to ground or over current	Current Above Normal or Grounded Circuit
523472	5	Boom Fold Tip Right Out open load	Current Below Normal or Open Circuit
523472	6	Boom Fold Tip Right Out short to ground or over current	Current Above Normal or Grounded Circuit
523479	5	Variable Geometry Left Down open load	Current Below Normal or Open Circuit
523479	6	Variable Geometry Left Down short to ground or over current	Current Above Normal or Grounded Circuit
523480	5	Variable Geometry Right Down open load	Current Below Normal or Open Circuit
523480	6	Variable Geometry Right Down short to ground or over current	Current Above Normal or Grounded Circuit
523481	5	Variable Geometry Left Up open load	Current Below Normal or Open Circuit
523481	6	Variable Geometry Left Up short to ground or over current	Current Above Normal or Grounded Circuit
523482	5	Variable Geometry Right Up open load	Current Below Normal or Open Circuit
523482	6	Variable Geometry Right Up short to ground or over current	Current Above Normal or Grounded Circuit
523652	2	Control Unit Identification Error	Data Erratic, Intermittent or Incorrect
523862	2	ECU Supply Voltage out of Range	Data Erratic, Intermittent or Incorrect

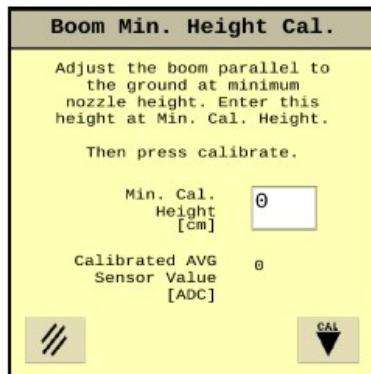
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Boom Height Calibration



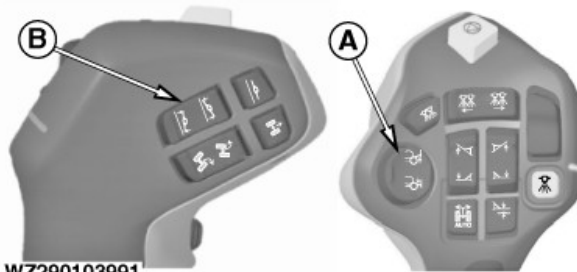
TG644111—UN—22AUG24

IMPORTANT: Make sure that the boom roll is at it center position (the booms are exactly horizontal).



TG597388—UN—20OCT23

Automatic - Boom Min. Height Cal.



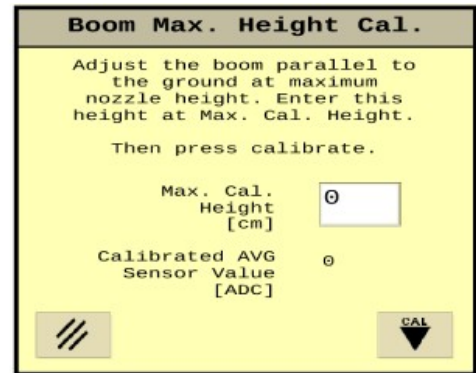
WZ290103991

WZ290103991—UN—19AUG20

A—Boom Raise/Lower Button
B—Boom Roll Button

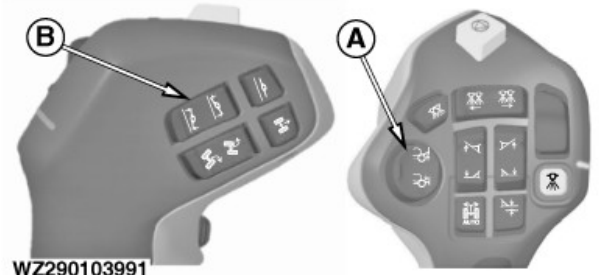
1. Push the Auto Button 'Height Sensor at Min. Boom Height' in Boom Height Sensor Calibration page.
2. Lower the boom with the MFC (A) to the lowest position.
3. Measure the distance between a nozzle tip and the ground.
4. Insert this value in the Min. Cal. Height field.
5. Push the CAL button to confirm the minimum height setting.

The display returns to the Boom Height Sensor Calibration page.



TG597387—UN—20OCT23

Automatic - Boom Max. Height Cal.



WZ290103991

WZ290103991—UN—19AUG20

A—Boom Raise/Lower Button
B—Boom Roll Button

6. Push the Auto Button 'Height Sensor at Max. Boom Height' in Boom Height Sensor Calibration page.
7. Lift the boom with the MFC (A) to the highest position.
8. Measure the distance between a nozzle tip and the ground.
9. Insert this value in the Max. Cal. Height field.
10. Push the CAL button to confirm the maximum height setting.

The display returns to the Boom Height Sensor Calibration page.

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Standard Spray System

Standard Spraying System Unit

The machine is equipped with an autonomous filling system that consists of a pump, a series of valves, a draft device, and a set of filters.

The filling times vary according to the characteristics of the pump installed on the machine.

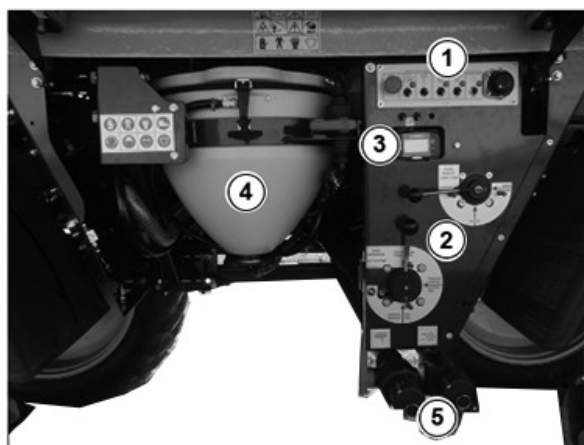
IMPORTANT: Filling procedure can be combined with the mixing of chemicals and the washing of their containers.

The system and its components do not allow the return of substances from the main tank to the intake device.

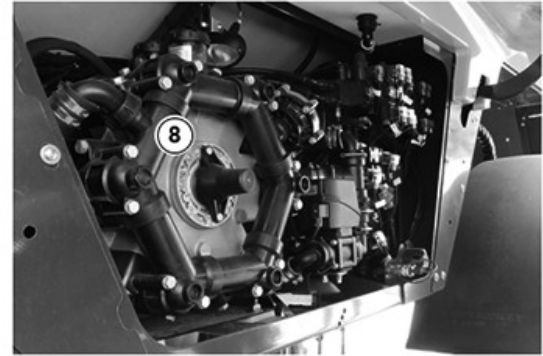
The filling system is self-priming, so it does not require the presence of liquids inside the pump or in the main tank.

IMPORTANT: Before preparing the treatment, check that the spraying system circuit has been washed.

The system allows the mixing/injection of chemical products to be sprayed. These solutions are prepared inside the eductor and conveyed through the circuits to the main tank.



APY64382—UN—09JUL21



APY64383—UN—09JUL21

- 1—Control Dashboard
- 2—Function Selectors of the Intake and Supply Pump
- 3—Visio Monitor
- 4—Eductor
- 5—Discharges and Couplings

The system allows optimization of the active ingredient of chemical products and elimination of the toxic residues from the packaging through a dedicated washing procedure of the containers that takes place without direct contact between the operator and the chemicals.

- 6—Quick Coupler Syphon Pipe (membrane pump)
- 7—Centrifuge Pump (if equipped)
- 8—Membrane Pump (right hood for maintenance)
- 9—Hydraulic Hose Reel (if equipped)

The spraying system unit is located under the left and right bonnets and at the rear of the machine.

The main components of the spraying system include:

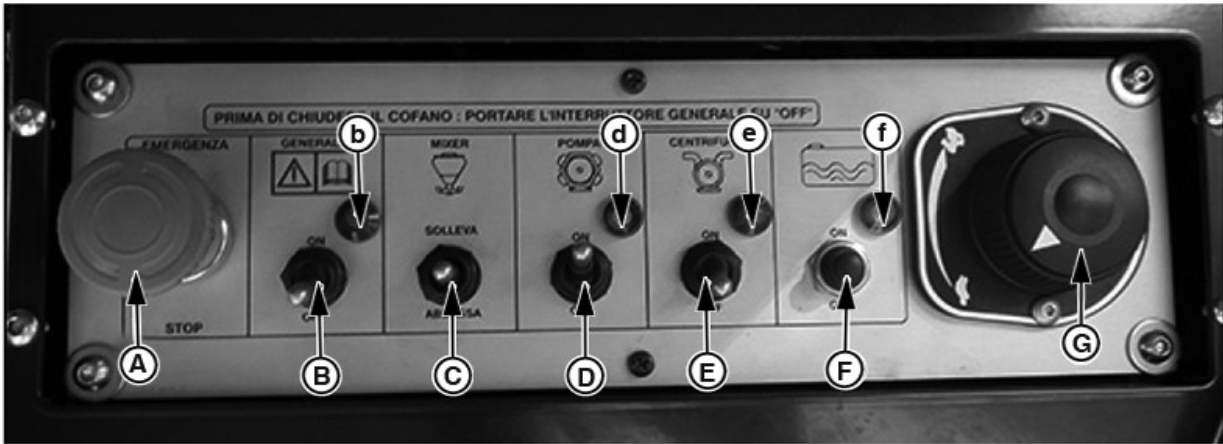
Reference	Description
1	Control Dashboard
2	Function Selectors of the Intake and Supply Pump
3	Visio Monitor
4	Eductor
5	Discharges and Couplings
6	Quick Coupler Syphon Pipe (membrane pump)
7	Centrifuge Pump (if equipped)
8	Membrane Pump (right hood for maintenance)
9	Hydraulic Hose Reel (if equipped)

KWPZAG2.0000A50-19-03SEP21

Controls Dashboard

CAUTION: The button (F) and its light (f) are only present on the sprayer installed by the manufacturer.

The main control panel is located under the left hood and allows the loading, mixing and spraying operations to be carried out from the machine side station.



APY64384—UN—09JUL21

Reference	Description	Action
A	Emergency Button	Emergency Motor Stop
B	Main Switch	Controls Dashboard Functions Activation/Deactivation
b	Light	Controls Dashboard Signaling Active
C	Switch	Eductor Tank Hydraulic Lifting/Lowering
D	Switch	Diaphragm Pump Activation/Deactivation
d	Light	Diaphragm Pump Active (ON state)
E	Switch (if equipped)	Centrifuge Pump Activation/Deactivation
e	Light	Centrifuge Pump Active (ON state)
F	Button	Switching Recirculation Function ON/OFF
f	Light	Closing of Recirculation Function Active (ON State)
G	Potentiometer	Diesel Engine RPM Accelerator

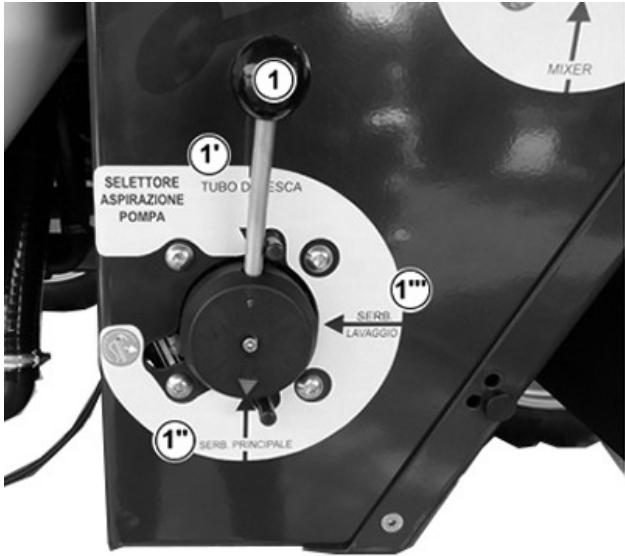
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Pump Operation Selectors (Intake and Supply)

The pump function selection panel allows managing of the flow in intake and in supply of the hydraulic spraying system.

With the two selector levers it is possible to choose the source of water intake and at the same time its destination.

Specifically, with the pump operation selector (1) it is possible to choose the source of water in the machine while with the pump supply selector (2) it is possible to then decide how to use it.

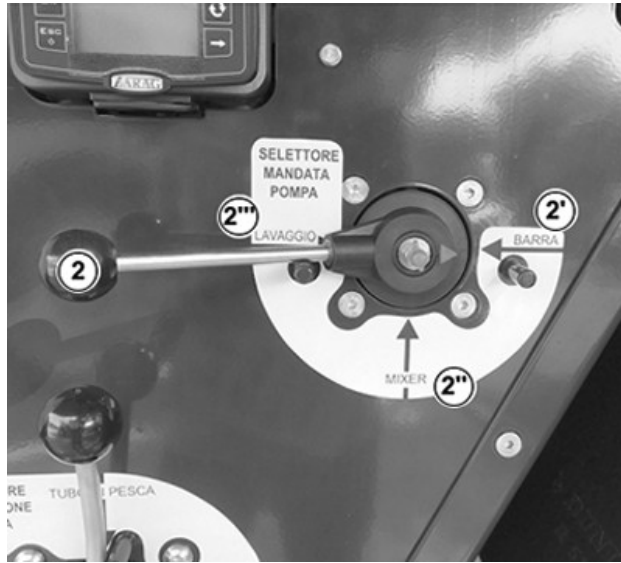


APY64385—UN—09JUL21

Pump Operation Selectors

- 1—Pump Operation Selector
- 1'—Quick Coupler Suction Hose for Membrane Pump

- 1"—Main Tank
1"—Clean Water Tank for Washing



APY64365—UN—09JUL21

Pump Supply Selector

- 2—Pump Supply Selector
2"—Spraying Booms

- 2"—Chemical Product Eductor (mixer)
2"—Inner Walls of the Main Tank (washing)

Special nozzles inside the main tank ensure the stirring [mixing] of the solution at all phases of the process. Their operation is controlled by a switch in the cabin.

KWPZAG2,0000A52-19-03SEP21

Basic Procedure

CAUTION: The basic procedure described below ensures safe and proper machine operation and work. It must be performed before the filling, mixing, spraying, and washing procedures.

Usually the machines are equipped with the membrane pump or, on request, also with the centrifugal pump. The following basic procedure applies to both versions of the machine.

In the cab:

1. Start up the machine.
2. Insert the handbrake.



APY64387—UN—09JUL21

- K—Stirring Valve Switch

3. To mix the chemical, turn on the stirring valve switch (K) which activates the stirring valve.

- H—Recirculation Switch

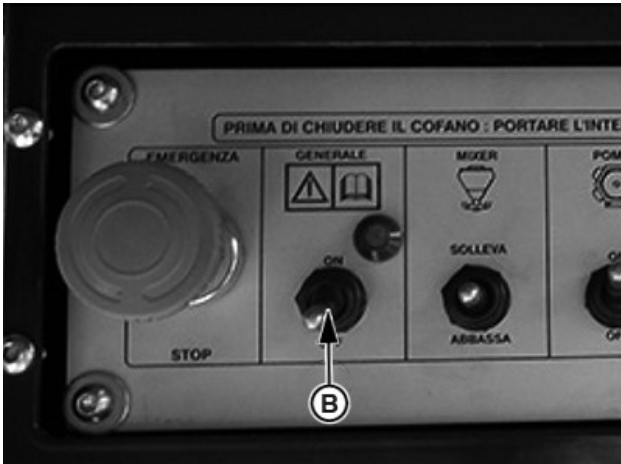
CAUTION: In order to obtain a uniform mixture, it is essential to keep the agitation function active inside the main tank, during and after the mixing phase. If the product used generates a lot of foam, it is recommended to use a special product that prevents the formation of foam. It is advisable to switch it off when the last few liters of the product are present in the main tank to avoid the formation of foam.

4. Make sure the function that closes recirculation using the recirculation switch (H) is OFF(light off).
5. Leave the cab and go to the left side of the machine.

IMPORTANT: Do not remain seated in the cabin during all the following operations:

On the left side of the machine:

1. Lift the left bonnet.



APY64388—UN—09JUL21

B—Main Switch

2. Turn on the main switch (B) in the spray control panel.

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Visio Monitor

CAUTION: If there is water in the tank, set its total desired quantity and the device will automatically calculate how much more water is needed to reach this level.

IMPORTANT: For all the functions of the visio monitor, refer to the relevant ARAG Operation and maintenance manual supplied with the machine.



APY64389—UN—09JUL21

A—OK Key
B—ESC Key

Visio monitor is a device that allows real-time reading of the level of water present in the main tank. To start the visio monitor, switch on the spraying computer in the cab.

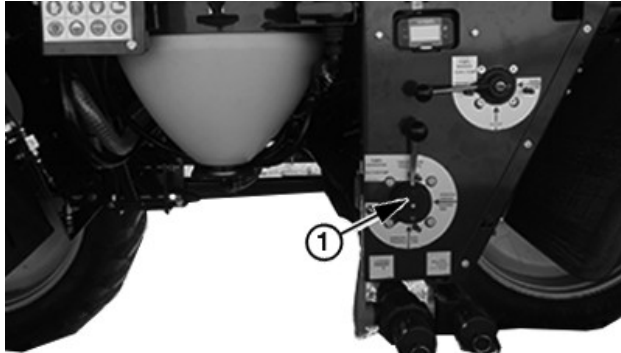
When the machine is equipped with the membrane

C—Navigation Key
D—Navigation Key

pump only, the visio monitor, once switched on, allows the reading in real time of the filling level of the main tank.

When the machine is also equipped with a centrifugal pump, the visio is fitted with the autostop function, which allows water to be started directly with the display

controls, and automatically interrupted when the desired level is reached. To set the fill level with automatic autostop shutdown, proceed as follows:



APY64390—UN—09JUL21

1—Water Loading System Selector

1. Choose a water loading system with water loading system selector (1).
2. Press the navigation key (D), which corresponds to the word Filling on the display.
3. Press the navigation key (D) again when the word Quantity appears.
4. Press navigation key (C) and navigation key (D) to set the desired quantity of water, then press OK key (A).
5. Turn on the centrifugal pump switch.
6. Press start with the navigation key (C). At this point the pump starts to withdraw water from the source, stopping automatically when the desired level is reached.

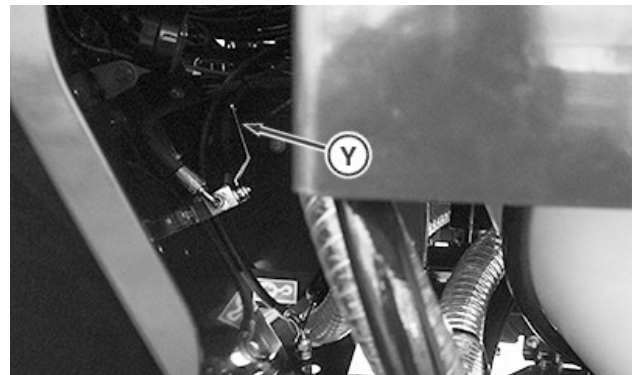
KWPZAG2,0000A54-19-24JAN25

Eductor

CAUTION: Behind the eductor, on its left, there is the lever (Y) which enables/disables the hydraulic handling of the eductor itself. The lever (Y) must be in closed position during road transport.



APY64391—UN—09JUL21



APY65296—UN—31AUG21

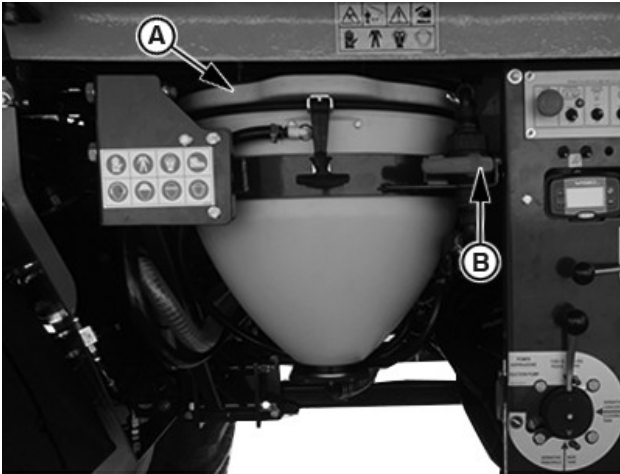
Y—Level

Eductor is the tank in which a solution of water and chemicals is prepared. The solution is conveyed into the main tank for spraying through the system circuit.

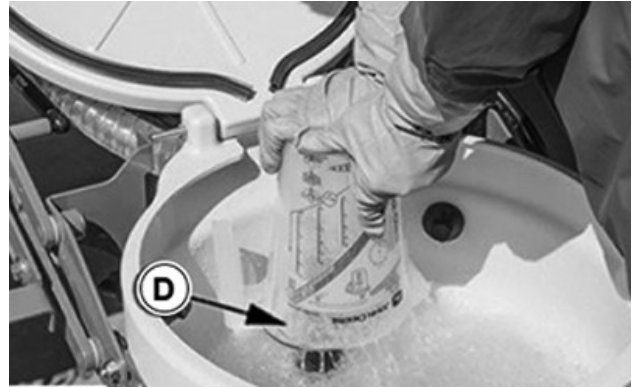
The instrument, designed for maximum ergonomics and safety, is equipped with a servo-assisted mechanism that allows the positioning of the eductor at an optimal height for the operator; the automatic movement is controlled by keeping the lever of the dedicated switch on the control panel raised or lowered. See Standard Spray System section.

In order to move up and down the eductor, open the lever (Y) and activate the switch in the command dashboard. Once lowered to the desired height. Close the lever once lowered to the desired position.

To lift up the eductor, open the lever (Y), activate the switch until it has completely returned to original position, then close the lever (Y).



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APY64394—UN—09JUL21



APY64393—UN—09JUL21

Reference	Description	Action
A	Cover	Opening: Unscrew Anti-Clockwise Closing: Screw Clockwise
B	Red Lever	Opens and closes the water flow in the eductor from the source selected with selector.
C	Black Valve	Operate the central bottle washer or washer-eductor nozzle (D).
D	Washer-Eductor Nozzle	Washer Eductor/Bottle Washer

Liquid Mixing/Micro granules Mixing

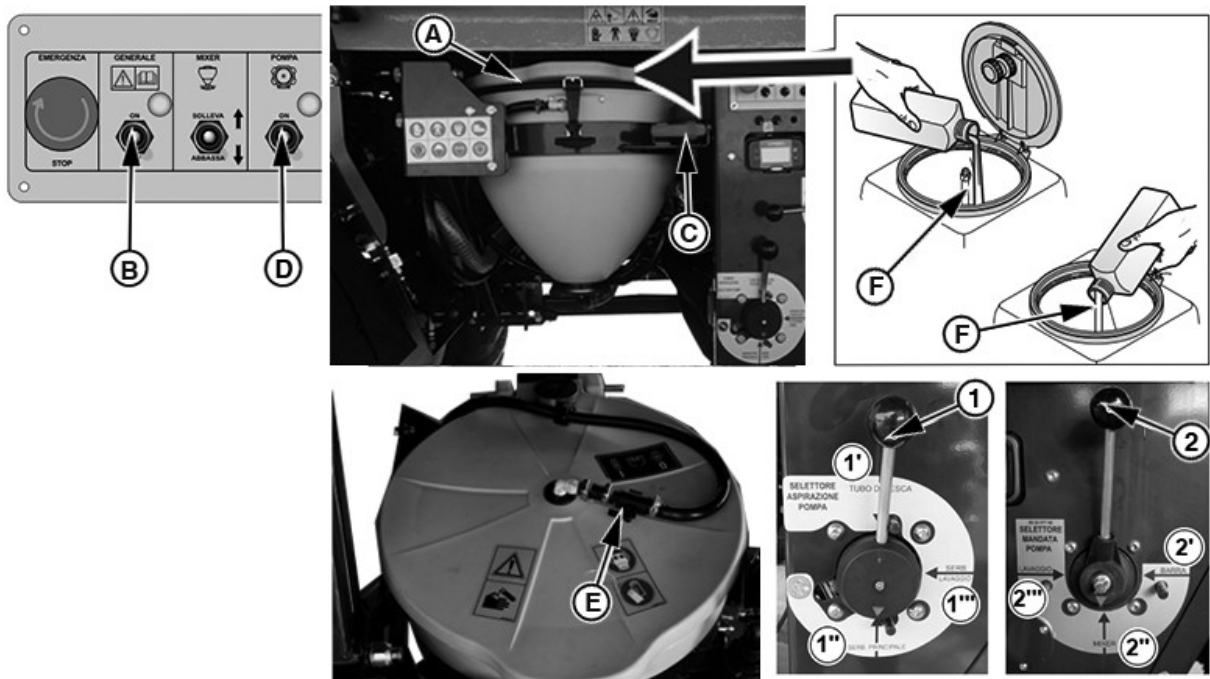
IMPORTANT: To avoid the formation of foam inside the spraying tank, close the intake valve as soon as liquid injection has finished, thus preventing the introduction of air into the main tank.

The manufacturer declines all responsibility for damage resulting from improper use of the equipment and/or from failure to follow the instructions in this manual.

1. Position the pump operation selector (1) on (1'') main tank.
2. Activate the main control switch (B) on the external control dashboard.
3. Activate the pump (D).
4. Make sure that the cover (A) is closed.

5. Turn the pump supply selector (2) on chemical product eductor (mixer) position (2'').
6. Open the agitation valve (C).
7. Open the cover (A).
8. Pour the product into the eductor.
9. Insert the container into the washing device (F).
10. Open the black valve (E) for approximately 20 seconds then close it.
11. Close the cover (A).
12. Close the agitation valve (C) and return the pump supply selector (2) to spraying booms (2') position to activate the spraying unit.
13. Switch off the control dashboard main control switch (B).
14. Store the used and washed containers in a

dedicated place, inaccessible to unauthorized persons.



TG648227—UN—20SEP24

- A—Cover
B—Main Control Switch
C—Agitation Valve
D—Pump
E—Black Valve
F—Washing Device
1—Pump Operation Selector
Loading Water and Mixing

CAUTION: If chemical products are mixed in powder form, to avoid lumps and to obtain a more homogeneous product, close the cover and activate the red lever of the gun to also mix with the aid of the central nozzle.

CAUTION: To carry out the above operation, make sure that the cover of the eductor is perfectly closed (turn it clockwise until it engages).

To avoid any injury of the operator and damage to the machine, always monitor the eductor filling level in order to prevent the fluid spilling over the edge. Never exceed 4/5 of the capacity of the eductor.

CAUTION: To avoid the formation of foam inside the spraying tank, immediately close the injection tap as soon as liquid has been injected to prevent the introduction of air into the main tank.

- 1'—Quick Coupler Suction Hose for Membrane Pump
1''—Main Tank
1'''—Clean Water Tank for Washing
2—Pump Supply Selector
2'—Spraying Boom
2''—Chemical Product Eductor (mixer)
2'''—Inner Walls of the Main Tank (washing)

CAUTION: To wash eductor after the mixture has been added to the main tank and is circulating, proceed as follows:

IMPORTANT: Follow the instructions on the labels of the crop protection products regarding safe handling procedures to be adopted. The use of non-approved products or incompatible mixtures is not permitted.

1. Perform the basic procedure.
2. Lower the eductor as indicated previously.
3. Use pump operation selector to choose, choose which water to use based on the load source. Then place the selector in the position:
 - Pump operation selector (1') if the water is being simultaneously loaded through a syphon pipe and a membrane pump (in intake).
 - Main tank (1'') if the water is being simultaneously loaded from an external source by pressure, or if water is already present in the main tank.
 - Clean water tank for washing (1''') if the water is being simultaneously loaded or is already present in the wash-circuit tank.

4. Position the supply pump supply selector (2) in position chemical product eductor (mixer) (2") relative to the mixing.
5. Turn the eductor cover anti-clockwise to open it.
6. Turn on the membrane pump to operate the eductor.
7. Open the red lever to the left of the eductor so that the water begins to fill it.
8. Open the discharge tap to open the eductor delivery to the main tank. Adjust the tap seeking a balance between filling and supply, i.e. so that the water in the eductor is kept at a constant level at approximately 1/5 of its capacity. Alternatively, it is possible to pre-mix in that minimum of initial water keeping the loading and supply taps closed, and then reopen the loading tap to the point at which eductor is full before draining into the tank all the pre-mixing by completely opening the supply tap.
9. Add the chemical to the eductor water.

IMPORTANT: To improve the mixing of the dilution of powdered products, ensure that there is some water in the eductor before pouring the chemical. It reduces the risk of damaging eductor walls by pure product, which makes cleaning more difficult.

10. If necessary, rinse the product container using the gun or the central nozzle of the eductor, which can be operated using the specific black lever.
11. Close the black cover of the eductor by turning it clockwise until it clicks into place.
12. Close the red water loading lever, after mixing has been complete.
13. Completely open the central tap to send the product into the main tank.
14. As soon as the product is injected into the main tank, turn off the tap.
15. Close the eductor cover properly by turning it clockwise.
16. Operate the black lever to perform internal washing of the eductor with the central nozzle.
17. Turn off the membrane pump.
18. Turn the intake selector to clean water tank for washing (1") position relative to the circuit washer.
19. Close the delivery tap after eductor has been rinsed and unloaded into the tank by opening the tap.
20. Place the eductor in a high position by modifying the relative control on the control panel.
21. At this point, in order to spray, turn the intake

selector to main tank (1") position relative to the main tank and the delivery selector into the spraying boom (2') position relative to the booms.

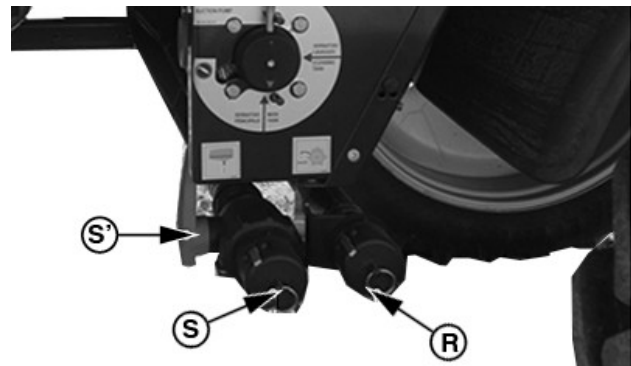
22. Once all the operations have been completed, turn off the main switch on the control panel.
23. Close the hood and get into the cab to continue the work.

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Connect Couplings and Drains (Membrane Pump)

CAUTION: Ensure that tap S is closed firmly before disconnecting the pipe connected to the S coupling.

In the water-loading operations described in the following paragraphs, the main loading and unloading points are located close to the mixing unit under the right hood.



APY64396—UN—09JUL21



APY64397—UN—09JUL21

S—Tap
S'—Cap of the Main Tank
R—Siphon Pipe Connection
P—Coupling

Reference	Description
R	Coupling (P) siphon pipe connection cap for water intake loading with diaphragm pump
S	Cap of the main tank discharge or loading water with external pump
S'	Tap for opening of the load/discharge valve of the main tank

To assemble the quick coupling tube proceed as follows:

1. Unhook the closing cap of the siphon pipe connection (R).
2. Insert the quick coupling into the connection.
3. Push downwards the two clamping levers of the coupling (P).

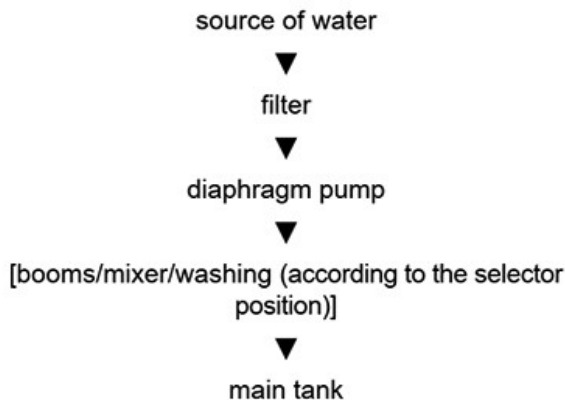
Repeat the operations in reverse order to disengage the tube.

Water Loading and Spraying Preparation (Membrane Pump)—Intake Side

The following procedure describes how water can be loaded into the main tank from a ditch, a river or a lake or from other similar sources, through the siphon pipe supplied with the machine and, at the same time, how to mix the water with the chemical inside the dedicated eductor.

As an alternative to mixing it is possible to wash the circuit.

The loading of water in intake through a siphon pipe brings water into the tank following this path:



APY65203—UN—20JUL21

1. Perform the base procedure.
2. Remove the cap from the load connection (R) by releasing the two clamps.
3. Insert the quick-fit siphon pipe to the load connection by tightening the two hooks.
4. Rotate the intake selector into the position relative to the siphon pipe.
5. Turn on the switch of the pump that will start to withdraw the water.

CAUTION: The filling speed of the tank as well as the mixing and incorporation yield are directly proportional to the engine revolutions. To change the revolutions with respect to the speed of 1900 rpm, use the relative potentiometer.

6. While the water is loaded, it is possible to

simultaneously mix the chemical product or to wash the circuit. Move selector (2) to the desired position afterwards. If there is a risk that the filling process will be over before the mixing/injection and washing of the containers is complete, turn the pump operator selector to main tank position to be able to complete the operations using the liquid already present inside the tank.

7. Use the visio monitor to check the level of water loading in the tank and wait until the desired level is reached.
8. Switch off the pump after the desired level has been reached.
9. Disconnect the siphon pipe.
10. Close the attachment cap.
11. At this point, to carry out spraying or washing, turn the pump supply selector to spraying boom position relative to the booms or inner walls of the main tank (washing) relative to washing and consult the specific instructions.
12. Once all the operations have been completed, switch off the main switch on the control panel close the hood and get into the cab to continue working.

Loading of Water into Tanks With an External Pump

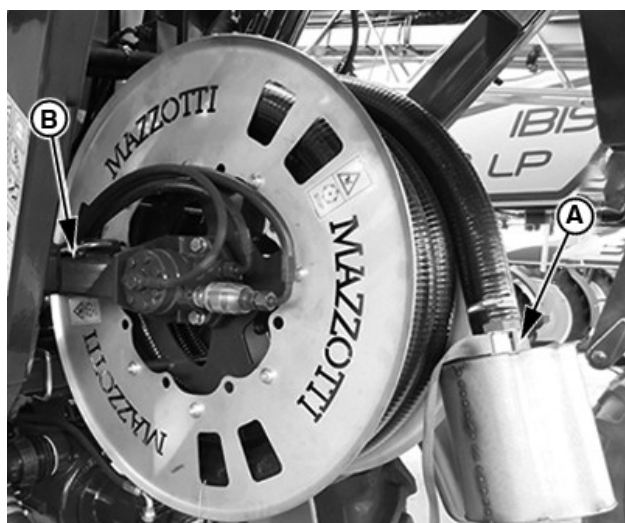
To load clean water into the washing tank located inside the main tank, it is necessary to draw from a source fitted with an external pump, through a tube or a suitable hose.

The fill level of the tank must be monitored visually, proceed as follows:

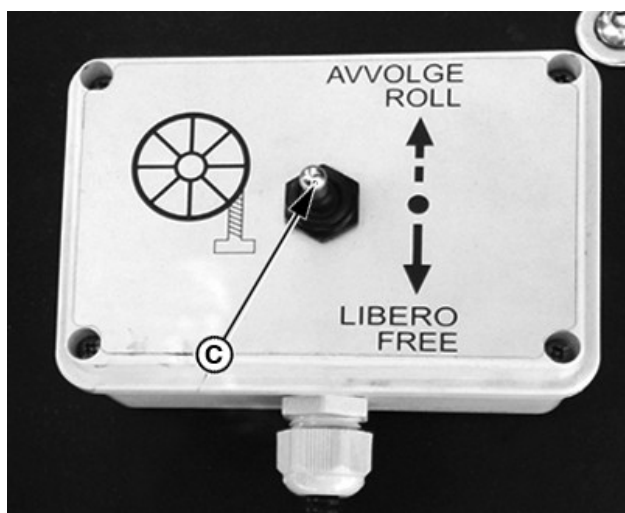
1. Climb up the ladder next to the cab until tank lids are within reach.
2. Remove the cover of the circuit washing tank.
3. Load clear water through a hose until the tank is completely filled.
4. Replace the cover.

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Hydraulic Hose Reel



APY64398—UN—09JUL21



APY64399—UN—09JUL21

A—Belt
B—Mechanical Block
C—Switch

The hydraulic hose reel performs the same functions as the quick-fit siphon pipe, but is mounted on a hose reel that facilitates its use.

Water intake is carried out by a dedicated centrifugal pump, which can be activated from the control panel by means of the relative switch.

The device allows rolling up and, at the same time, supplying of the hose necessary for direct filling of the main tank.

It is located at the rear of the machine.

When not in use, the pipe unwinding must be kept locked and safe by:

- The belt (A) connected between pipe and coil
- The mechanical block (B) inserted (if equipped)
- The switch (C) in central neutral position

The release of the hose reel takes place:

- By pulling and rotating the block (B) clockwise until it is connected onto the tubular support of the hose reel itself.
- Using switch (C) according to the following three positions.

0	Rotation locked
LIBERO/FREE	Rotation of the hose reel is released and free to turn.
AVVOLGE/ ROLL	Holding the switch lever up, the coil will wind the tube. Always wind it a little at a time, accompanying it with one hand. If the hose reel does not work, make sure that the mechanical block (B) is not inserted.

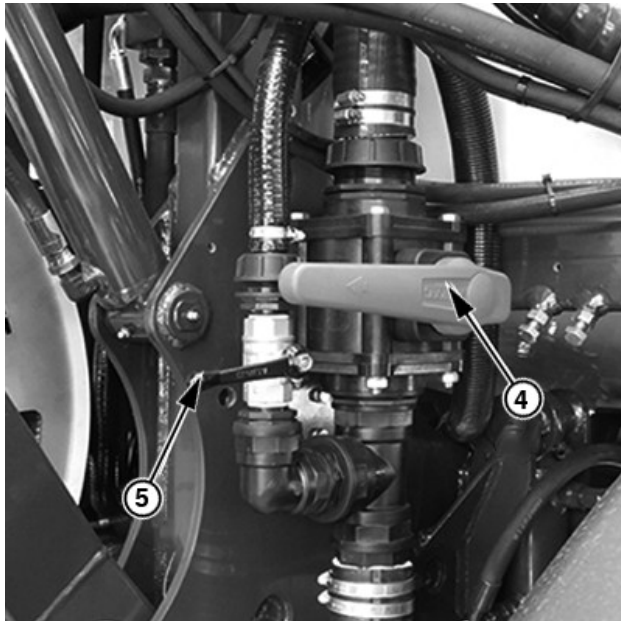
NOTE: Periodically, as maintenance operation, it may be useful to grease the extension and the points indicated with the appropriate stickers.

KWPZAG2.0000A57-19-24JAN25

Centrifugal Pump



APY64400—UN—09JUL21



APY64401—UN—09JUL21

- 1—Centrifugal Pump
4—Tap
5—Tap

The centrifugal pump (1) sucks the water with the siphon pipe from an external source and pushes the fluid into the main tank.

Use the tap (4) to open/close the delivery line to the main tank or to tap (5) to open/close the delivery line to the circuit washing tank.

To activate (light e illuminated) or deactivate (light e OFF) operation of the centrifugal pump (1) use the selector on the control dashboard panel.

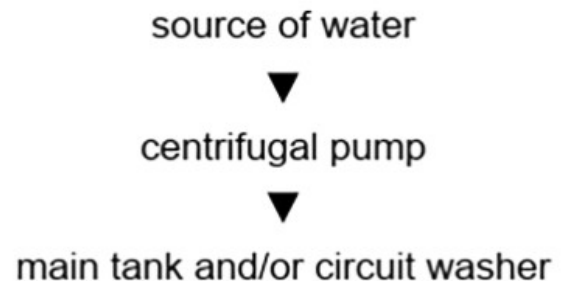
Water Loading with Centrifugal Pump—Intake Side

CAUTION: If the hose reel does not work, it means that the centrifugal pump switch has been switched on.

IMPORTANT: The washing water tank is not equipped with a filling sensor so once it has been completely filled, it may overflow. To avoid this, visually check the filling level using the relative red float. When this rises upwards until it is no longer visible, it means that the tank is full.

The following procedure describes how to load the water into the main tank or into the washing tank, withdrawing it from a ditch, a river or a lake or from other similar sources, through the siphon pipe mounted on the hose reel.

The loading of the water in intake by means of a siphon pipe on a hose reel brings the water into the tank following this path:



APY65304—UN—13AUG21

1. Perform the basic procedure.
2. Remove the safety belt from the tube.
3. Remove the mechanical safety lock (if any).
4. Bring the hydraulic hose reel switch to the libero/ free position to release the roller rotation. Now the pipe is free and can be unrolled choose the water source, immerse the stainless steel filter into the water source.
5. Once the tube is positioned, turn the hose reel switch back to the central position to block its rotation.
6. In the spray control panel, turn on the centrifugal pump acting on the relative switch, starting withdrawal of the water.
7. As soon as the visio monitor indicates that the desired water level in the main tank has been reached, turn off the centrifugal pump. The machine has the autostop function (see the settings of the visio paragraph). If the visio monitor is not present, check the water level through the relative level rod.

KWPZAG2,0000A58-19-24JAN25

8. After loading, disconnect the main switch of the control panel.
9. Rewind the hose by moving the hose reel switch to the avvolge/roll position. Perform the operation slowly, accompanying the tube with your hand, until it is completely wound up.
10. Close previously opened valves.
11. Reposition the mechanical safety device of the hose reel.
12. Reconnect the safety belt.
13. Turn the hose reel switch to 0 position.
14. At this point, to carry out spraying or washing, turn the corresponding taps accordingly. See Standard Spray System section.
15. After all the operations, close the hood and get into the cab to continue the work.

KWPZAG2.0000A59-19-24JAN25

Spraying Pump

IMPORTANT: During the filling and mixing operations it is possible to vary the speed of the pump based on the number of engine revolutions using the regulator positioned in the cab or the regulator positioned on the control dashboard panel.

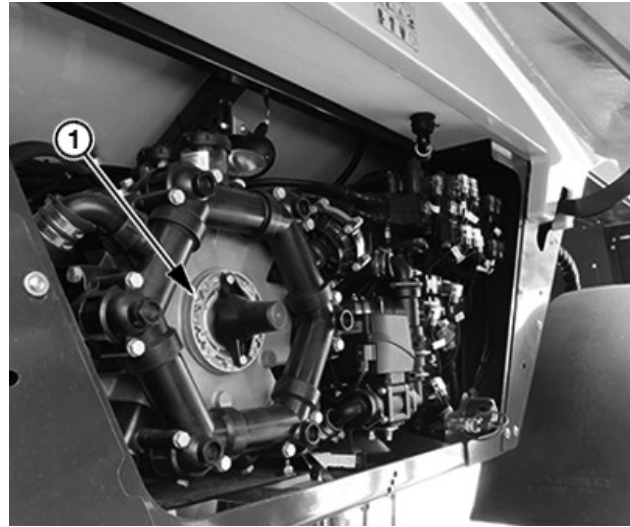
The spraying pump (1) generates the pressure necessary to feed the flow of crop protection solutions into the circuits.

It is located in the right side compartment of the machine.

Preparation for Spraying

IMPORTANT: If the main switch is not turned off and another function such as centrifugal pump has been left ON by mistake, booms do NOT work because the hydraulic oil would be used by the active function.

IMPORTANT: If the filling and mixing have taken place with the “system clean”, it can be assumed that the liquid present in the piping that runs from the sectoral valves to the nozzles does not contain a pesticide solution else need to remove the washing liquid.



APY64402—UN—09JUL21

1—Spraying Pump

After completing the water loading procedure as described in the previous paragraphs and taking into account the instructions provided in the general machine manual, follow the instructions below to proceed with spraying:

1. Turn the intake selector to the position relative to the main tank.
2. Turn the supply selector to the position relative to the spray booms.
3. Turn on the membrane pump so that the product in the tank continues to mix.
4. Lower the engine rpm to a minimum.
5. Turn off the main switch on the control panel.
6. Close the hood and get into the cab to continue the spraying work.
7. Position the machine in a place suitable for complete opening of the spraying booms.
8. Carry out the booms opening procedure described in the chapter of the hydraulic booms.
9. Proceed with the spraying procedure after setting up the computer.

KWPZAG2.0000A5A-19-03SEP21

Spraying Control Unit

The electronic volumetric spraying control unit with SeleTron includes general closing and pressure regulation.

The system is protected by a maximum pressure valve (set at the maximum pressure indicated on the identification plate).

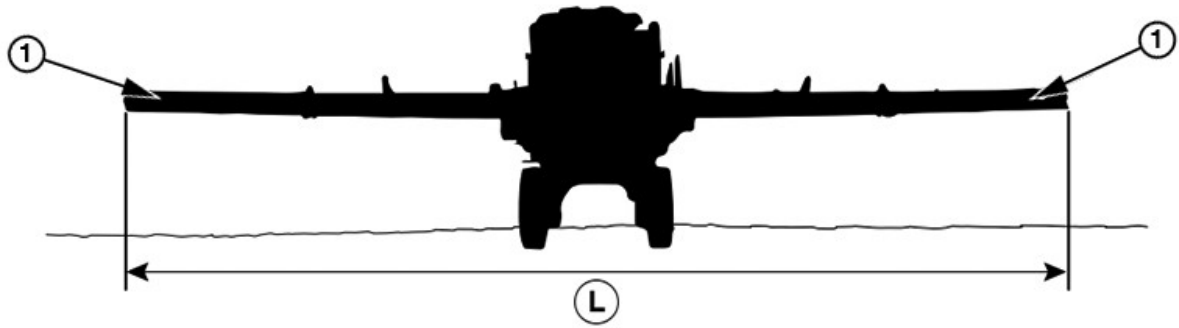
All parts in contact with the chemical are made of polypropylene, viton, and stainless steel. The group is completed with a supply filter for spraying (low, medium,

and high volume), a digital flow meter, and a digital pressure sensor.

The group works autonomously. No intervention by the operator during the normal work cycle is required.

KWPZAG2,0000A5B-19-03SEP21

Boom



APY64403—UN—09JUL21

1—Hydraulic Boom

The hydraulic booms (1) are the terminal device that ensures the correct distribution of crop protection products onto the surface to be sprayed.

Their structure consists of steel lattices on which relevant diffuser nozzles are installed.

The movement is generated by hydraulic cylinders

L—Length

controlled by the joystick located inside the machine's cab.

The machine can be equipped with different types of booms, depending on the application.

The main features are the length and type of nozzles used.

Description	Length (m)
Ti-m Hydraulic booms with SeleTron	18 m
	19 m
	21 m
	24 m
	28 m
	30 m

KWPZAG2,0000A5C-19-03SEP21

Nozzles

CAUTION: Do NOT blow directly with the mouth. Do NOT use methods or instruments other than those specifically indicated (brush/compressed air).

IMPORTANT: Keep the nozzles clean by using a nylon or compressed air brush if necessary. Periodically check and keep the anti-drop membranes efficient.

IMPORTANT: When replacing nozzles, refer to relevant regulations and periodic calibration information to ensure the minimum uniform coverage, which varies depending on various factors (use, material, etc.).



APY64404—UN—09JUL21

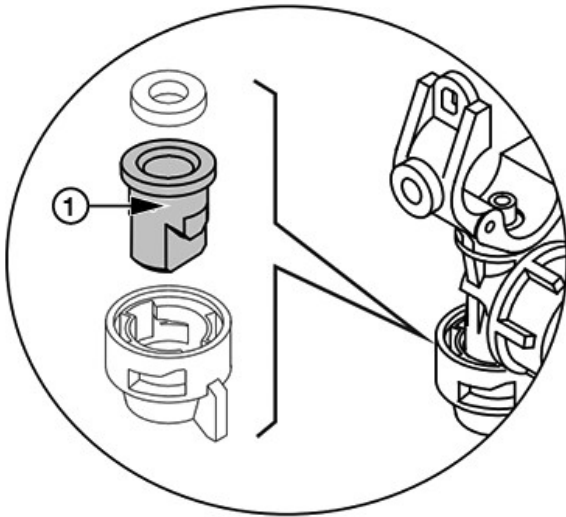
1—Nozzle

The nozzles (1) are the terminals that differentiate the type of diffusion of the treated product.

They can be replaced according to requirement or the type of chemical to be sprayed.

Consult the tables of flow rates per hectare at the end of the Specifications section.

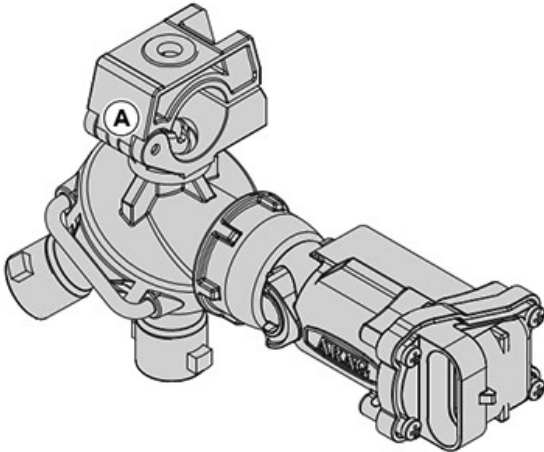
Poor maintenance or excessive wear of the nozzles causes insufficient distribution quality.



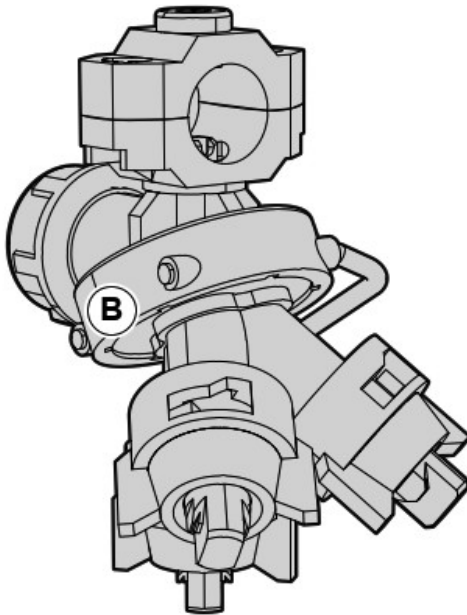
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Type of Nozzles Available

Ref	Type	Description
A	Triple Jet	3-way jet for the simultaneous assembly of 3 nozzles. Membrane anti-drop with SeleTron valve connection. Intermediate stop position. Maximum operating pressure: 8 bar.
B	Triple Jet	3-way jet for the simultaneous assembly of 3 nozzles. membrane anti-drip and self-aligning head. Intermediate stop position. Maximum operating pressure: 12 bar.



APY64406—UN—09JUL21



APY64407—UN—09JUL21

A—Triple Jet
B—Triple Jet

The nozzles work best with an operating pressure of between 2 and 10 bar (depending on the type of nozzle fitted).

Refer to the final appendix of this manual with the tables showing the international nozzle identification codes.

The tables provide information on the travel speed that the machine must maintain during work, based on the nozzle mounted.

Therefore, for example, to spray 200 litres of product per hectare of soil, in the row corresponding to the assembled nozzle and the relative booms (between 2 and 4), identify the value closest to 200, and obtain the

operating speed in the relevant column. In this case, by fitting a nozzle cod. AFC11004, the operating speed of the machine must be as specified.

Specification

Machine—Speed. 10 km/h (approximately)

If the operating speed should be slower, a smaller nozzle should be used. Conversely, a higher speed requires a larger nozzle.

Nozzles Flow Rate

To check the flow rate of the nozzles, it is necessary to collect the liquid drained from each nozzle through the graduated container supplied with the machine.

IMPORTANT: Operate with the machine stopped and the boom open.

- Activate dispensing with manual control.
- Adjust the pressure as specified.

Specification

Nozzle—Pressure. 3 bar

- Collect the water supplied by each nozzle for a period of one minute.
- Compare the values obtained with the data in the nozzle tables. If the difference exceeds 10%, proceed with replacement of the nozzles.
- Replace the polymer and metal nozzles approximately once a year and the ceramic nozzles every 2-3 years.

KWPZAG2,0000A5D-19-03SEP21

Air Sleeve

IMPORTANT: Check Cab, Controls and Instruments section to identify the proper air sleeve activation commands.

The air sleeve is an additional device consisting of a conveyor/fan group driven hydraulically by an autonomous system specifically designed for the intended use.

The controls integrated in the cab allow activation of the fan (ON/OFF), proportional regulation of the flow intensity and adjustment of the angle of incidence of the flow with respect to the nozzles and to the ground.

The air flow diffusion takes place through dedicated sleeves connected to the conveyor which reach the ends of the booms.

The air sleeve is available in two versions with different flow rates and yields:

Standard Spray System

	ø Fan	Max Absorption
Air Sleeve 620	620 mm	15 hp
Air Sleeve 820	820 mm	35 hp
Air Sleeve 920	920 mm	45 hp

Air sleeve type should be chosen based on the length and the type of crop.

The air sleeve offers significant advantages:

- It allows operating in wind conditions in which spraying with traditional sprayers is prohibited.
- It offers a significant reduction in volume/ha and in most cases also in the amount of active ingredient.
- It guarantees uniform coverage even when working on bare ground due to regulation of the flow.
- It ensures excellent wetting even in crops with highly developed foliage systems.

The climatic and environmental conditions and the type of work to be carried out are fundamental variations in the use of the air sleeve system.

Observe a number of general rules to operate in the most correct manner:

- In the event of a side wind with respect to the direction of travel, it may be difficult to control the drift during treatments on undeveloped vegetation.
- When possible, operate with front or rear wind using the inclination controls and on the flow intensity.
- The wind is not a problem in the following cases: weeding on bare soil (using nozzles suitable for the recommended pressures) and treatments of crops with highly developed foliage systems.

Anti-Drift on Bare Ground

This configuration allows the smaller drops to be collected in the air stream which are transported to the ground without creating turbulence that affects the precision of the fan.

Nozzles	AFC -CFA-AIXR
Pressure (bar)	2+6
Sleeve Inclination (degrees)	Flow of air decoupled from the nozzles (30°/45° opposite to the operating direction).
Air Flow Inside the Air Sleeve	Minimum
Machine Operational Speed (km/h)	5—10
Distance of the Nozzles from the Ground (cm)	50—60

Leaf/Anti-Drift Penetration on Undeveloped Crops

This configuration tends to achieve the best result by combining good leaf penetration with drift reduction.

Nozzles:	AFC -CFA-AIXR	DUALCONE Single Nozzle 01-015-02
Pressure (bar)	2—5	2—6
Sleeve Inclination (degrees)		
Air Flow Inside the Air Sleeve	The air flow must have an intensity that allows obtaining good penetration in the leafy plant of the vegetation, possibly without drift. Both the speed and the inclination of the flow must be adapted visually by the operator, depending on the wind direction and the operating speed.	
Machine Operational Speed (km/h)	5—8	
Distance of the Nozzles from the Ground (cm)	30—50	

Leaf/Anti-Drift Penetration on Highly Developed Crops

This operating configuration allows (while producing very small drops and a high coefficient of adhesion to the leafy plant) excellent covering without the vegetation being washed away. It also allows a significant reduction in the volumes of liquid to be sprayed (40% + 70%) and in the active ingredient to be used per hectare.

The high quantities distributed with traditional sprayers,

causing washing away of the vegetation, disperse most of the active ingredient used on the ground.

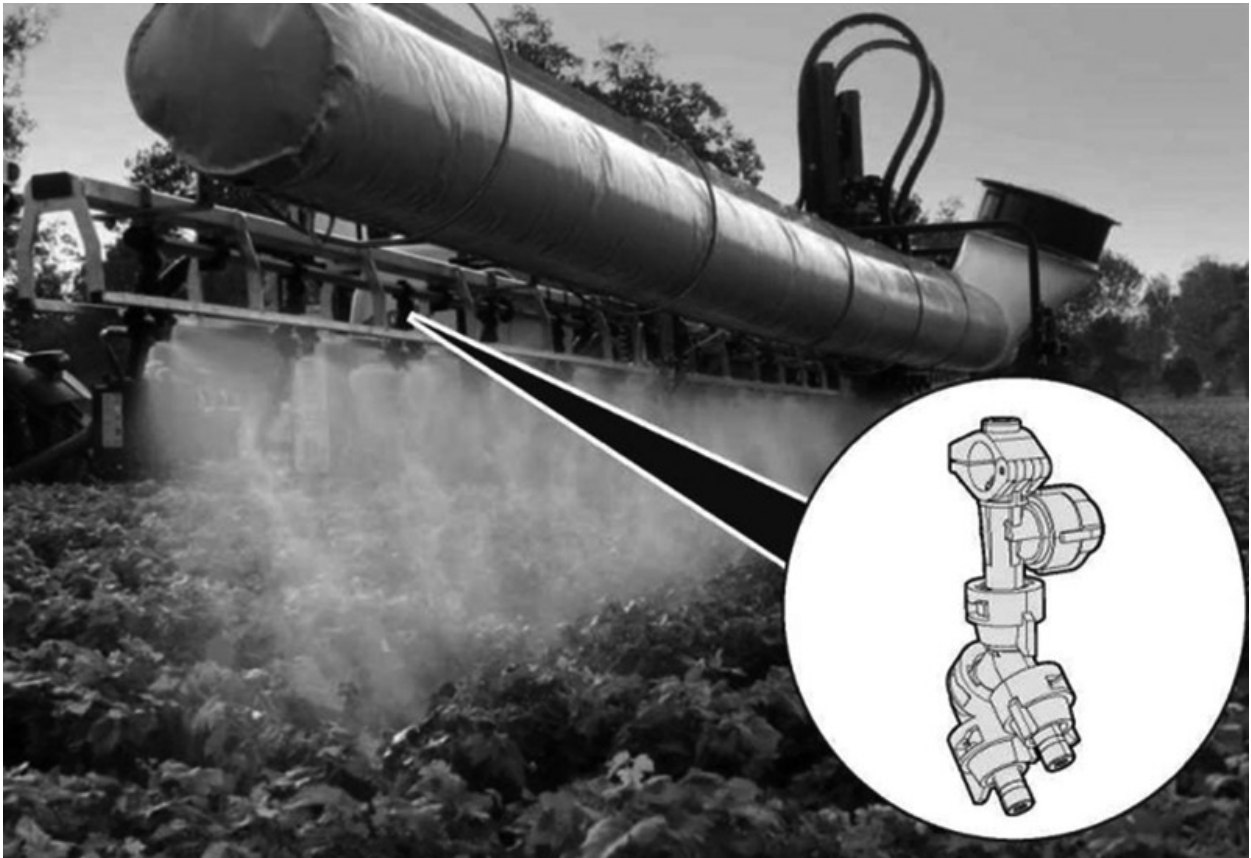
Furthermore, by distributing high volumes of liquid with high flow nozzles, large drops are produced which have poor adhesion and persistence on the vegetation and tend to slide towards the ground.

The use of high flow nozzles inhibits the effect and makes use of the air sleeve system unnecessary, increasing fuel consumption.

Standard Spray System

Nozzles	AFC -CFA-AIXR	DUALCONE with Double Nozzle 01-015-02
Pressure (bar)	3—8	3—10
Sleeve Inclination (degrees)	Air flow coupled to the nozzles (perpendicular to the ground).	
Air Flow Inside the Air Sleeve	Maximum	
Machine Operational Speed (km/h)	4—7	
Distance of the Nozzles from the Ground (cm)	50—80	

Dualcone Air Sleeve System



APY64408—UN—09JUL21

The Dualcone air sleeve system arises from the need to guarantee the best leaf coverage at low volumes while minimizing the dispersion of pesticides outside the target (aerial drift and dispersion on the ground).

The operation is based on the production of very fine and easily transportable drops that are injected directly by the air flow, which is the vector for correct deposition on the vegetation.

The system works best on highly developed foliage plants and is particularly suitable and effective in treatments with contact products.

In order to obtain the best results in the most difficult conditions, it is advisable to proceed at low speeds (max 4—5 km/h), thus leaving the air carrier sufficient persistence to ensure adequate handling and distribution under the leaf.

The Dualcone system is optimized for treatments from 100 to 300 lt/h at the recommended speeds (4-5 km/h). If necessary, any increase in volume should be achieved by reducing the speed and not by applying nozzles larger than those recommended.

The Dualcone system is particularly suitable for low volume treatment of nurseries (including arboreal), tomatoes, potatoes, onions, strawberries, and vegetables that offer similar or comparable vegetative situations to those listed. In order to prevent drift production, use of the dualcone system is not recommended in conditions of poor vegetative coverage. Anti-drift nozzles and/or air injection nozzles should be used in these conditions.

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Preparation for Treatment

IMPORTANT: Before a treatment with a chemical other than the previous treatment, thoroughly clean the machine and especially the pipes and nozzles.

IMPORTANT: If the following calculations are carried out accurately, the remaining quantities of the mixture can be kept to a minimum at the end of the treatment. In fact, elimination of the residual product in the protection of the environment is difficult.

Distribution Volume (Nozzles and Filters)

The result of the distribution also depends on the quantity of water used for dilution of the plant protection product.

The volume of mixture distributed per surface unit depends on the advancement rate during distribution and on the capacity of the nozzles (size and operating pressure).

For the choice of the volume of distribution, follow the instructions provided with the plant protection product.

Check that the nozzles necessary to guarantee the distribution to be obtained are mounted on the boom.

Refer to the relevant section in the Operator's Manual.

Use all the provided filters. Clean the filters periodically. To avoid problems with the machine operation. Filter the product carefully intended for treatment. Perfect filtering greatly affects the result of the phytosanitary treatment.

Observe the permitted combinations of filters and nozzles.

The mesh size of the supply filters must always be smaller than the nozzle holes used.

The filter cartridge fitted as standard in the delivery filter is equipped with a mesh size of 0.3 mm, corresponding to the value of 50 mesh (mesh/inch) and blue in colour.

This filter cartridge is suitable for nozzles starting from size '03'.

For '02' size nozzles, use a yellow 80 mesh (if equipped) filter cartridge.

For size nozzles '015' and '01', use a 100 mesh filter cartridge (if equipped).

The use of pressure filter cartridges with 80 or 100 meshes/inch can involve filtering of the active substance of certain anticyptogamic substances. For individual cases, consult the manufacturer of the fungicidal substance.

Calculations

IMPORTANT: Do NOT confuse the different products with each other.

IMPORTANT: The following calculations may be inaccurate if subsequent refills are performed with the tank not completely empty. Never fill the tank above its nominal capacity. The additional volume is used to guarantee environmental safety from the sprayer machine.

- Calculation number of complete fills: $\text{UPPER} \times \text{VOL/TANK} = \text{FILL}$ (consider only the whole number without decimals).
- Final filling quantity calculation: $(\text{UPPER} \times \text{VOL}) - (\text{TANK} \times \text{FILL}) = \text{FINAL}$ (the result are liters).
- Calculation quantity of plant protection product for complete filling: $\text{DOSE} \times (\text{TANK/VOL}) = \text{Quantity of Plant Protection Product to be introduced into the tank expressed with the same unit of measurement used for the dose (if possible, repeat the calculation for each of the plant protection products that are used in the mixture)}$.

IMPORTANT: Before starting the treatment operations, the following parameters must be known.

The number of refills to be performed to complete the treatment depends on the capacity of the tank, the volume of distribution, and the surface to be treated.

The treatment consists of a series of complete and one final partial refill (in particular cases they can all be complete fills or only one partial filling).

Calculation quantity of plant protection product for final filling: $\text{DOSE} \times \text{FINAL} = \text{Quantity of Plant Protection Product to be introduced into the tank expressed in the same unit of measurement used for the dose}$.

Parameter	UM	Description
TANK	l	Main Tank Nominal Capacity
UPPER	ha	Surface to be treated (consider only the area to be treated, without any edges and heads that should not be treated).
VOL	l/ha	Distribution Volume
DOSE	l/ha kg/ha g/ha	Phytosanitary doses that it has been decided to use.

Mix Filling and Preparation

IMPORTANT: Before proceeding to preparation for the treatment, check that the washing has been carried out.

IMPORTANT: Before filling/mixing operations, place the machine on a flat surface to avoid any chemical or mixture leakage and ensure the correct level indication.

The machine is equipped with an independent non-polluting filling system consisting of a pump, a series of valves, a draft device, and a set of filters.

The filling times vary according to the characteristics of the pump installed on the machine.

This procedure combines the filling operation and the mixing operation. It allows the product containers to be washed with clean water using the specific device on the eductor.

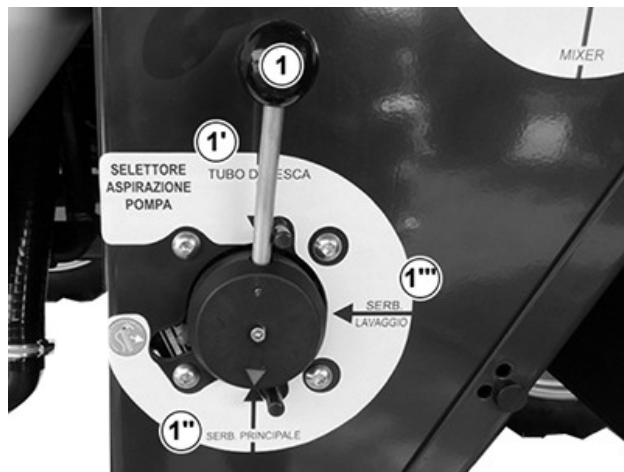
The design of the system and the installation of the components do not allow the return of substances from the main tank to the intake device.

The filling system is self-priming so it does not require the presence of liquids inside the pump or in the main tank.

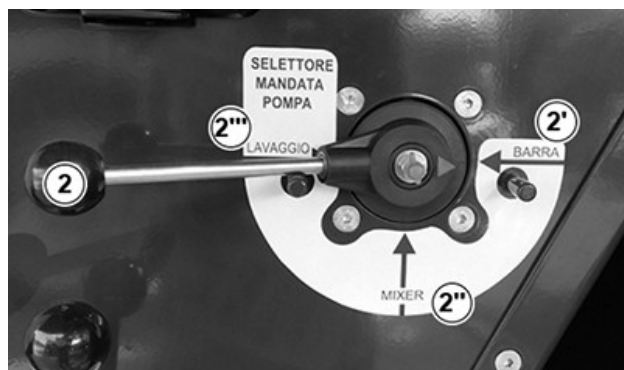
Distribution of Agrochemical Mixtures

CAUTION: If the filling and mixing have taken place with the “system clean”, it can be assumed that the liquid present in the piping that runs from the sectoral valves to the nozzles does not contain a pesticide solution else need to remove the washing liquid.

IMPORTANT: Before starting the distribution, check that the computer settings are correct and that the nozzles are those intended for treatment.



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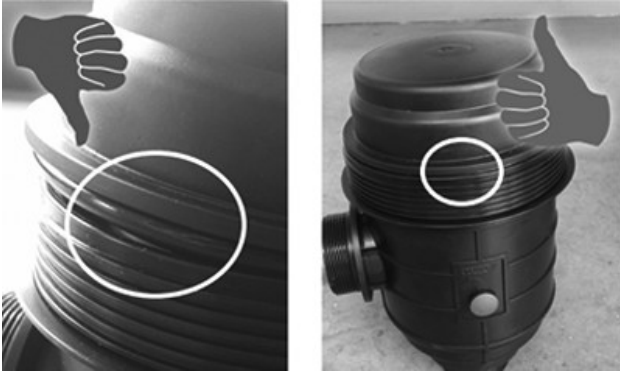
- 1—Pump Operation Selector
- 1'—Quick Coupling Suction Hose for Membrane Pump
- 1"—Main Tank
- 1"—Clean Water Tank for Washing
- 2—Pump Supply Selector
- 2'—Spraying Boom
- 2"—Chemical Product Eductor (mixer)
- 2"—Inner Walls of the Main Tank (washing)

Once the mixing and incorporation of the crop protection products have been completed, proceed with spraying by acting as follows:

1. Set the machine in the working position by positioning the INTAKE selector (1) on “Main Tank” (1I) and the delivery selector (2) on “Boom” (2I);
2. Properly position the booms and start the distribution through the appropriate controls in the cab.

Filters Inspection

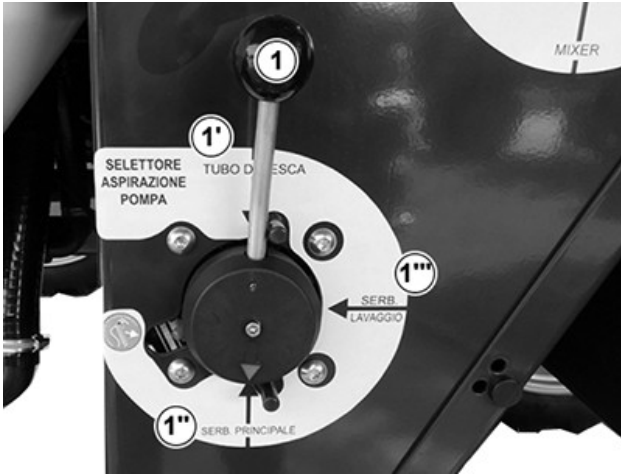
IMPORTANT: If the filter and the O-ring gasket are not properly refitted, the pump will lose power and will not work properly.



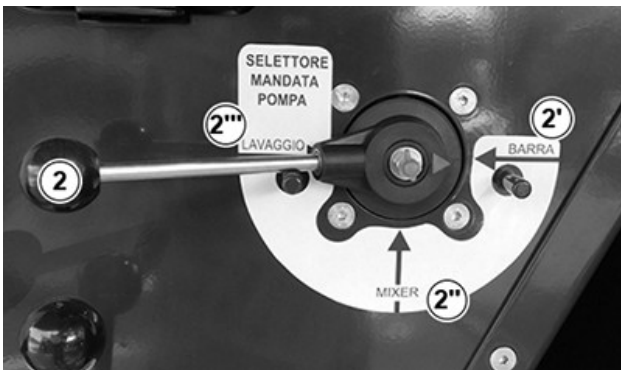
APY64415—UN—09JUL21

IMPORTANT: Do NOT use the machine without the filter cartridge. Failure to observe this warning can cause serious damage to the pump.

If during the spraying operations it is necessary to inspect the filters, proceed as follows:



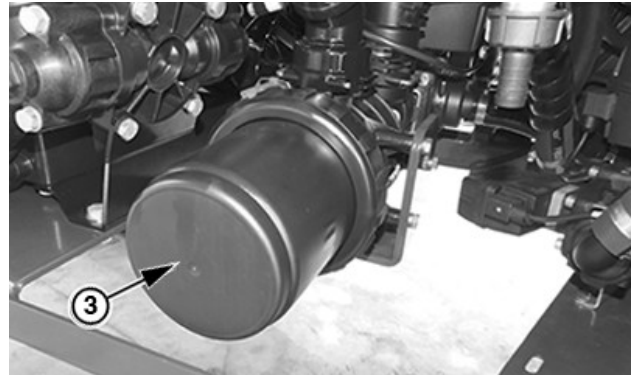
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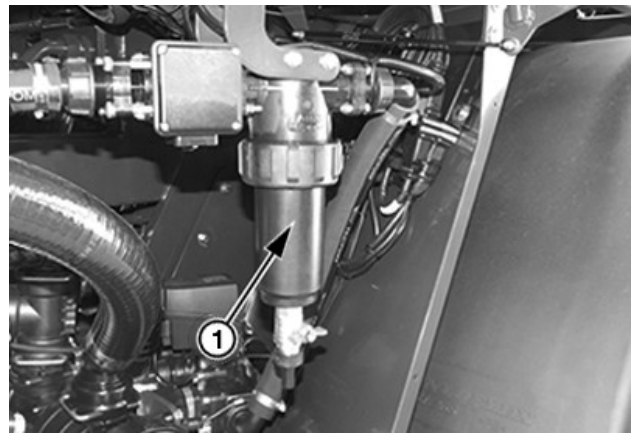
APY64410—UN—09JUL21

- 1—Pump Operation Selector
- 1'—Quick Coupler Suction Hose for Membrane Pump
- 1"—Main Tank
- 1"—Clean Water Tank for Washing
- 2—Pump Supply Selector
- 2'—Spraying Boom
- 2"—Chemical Product Eductor (mixer)
- 2"—Inner Walls of the Main Tank (washing)

supply selector (2) to neutral position: Quick coupler suction hose for membrane pump (1') and inner walls of the main tank (washing) (2").



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- 3—Intake Filter
- 4—Delivery Filter

3. Using suitable personal protective equipment (PPE), inspect the intake filter (3) and the delivery filter (4).
4. After the inspection, return the suction selector pump operation selector (1) to main tank (1"), and the supply pump supply selector (2) to spraying boom (2').

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Circuit Washing

IMPORTANT: Turn the valve selectors always in correspondence with the function indicator LEDs, and never in intermediate positions.

IMPORTANT: NEVER use washing residue for spraying operations.

IMPORTANT: Ensure that the supplementary tank is full before carrying out the last crop protection product distribution cycle.

1. Stop the pump and engage the parking brake.
2. Turn the pump operation selector (1) and pump

IMPORTANT: The user must carry out thorough cleaning operations of the circuit at the end of each working day. Failure to perform these tasks invalidates all forms of guarantee on the distribution system. As the modes for use are outside every possible control, the manufacturer declines all liability for damage arising from incorrect or inadequate maintenance and/or cleaning operations.

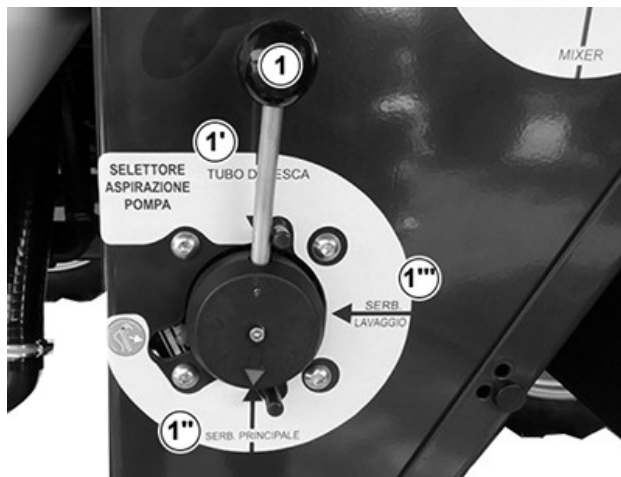
There are two types of residuals:

1. Dead residue (i.e. non-recoverable): It can only come out of the nozzles. It can be disposed of by pulverization on the newly treated plot or on a set aside area compatible with the mixture used.
2. Dilutable residue: all fractions of liquid that can return to the main tank. It can be disposed of by means of a pulverization procedure or by an emptying procedure.

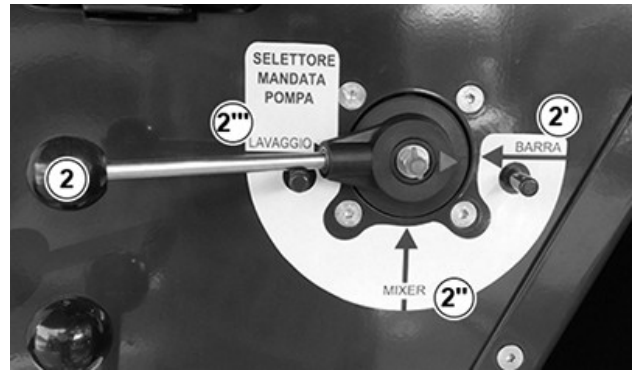
To minimize the residual quantity present in the tank, when 100-150 l of mixture remain, set the selectors to the main tank (1") - spraying boom (2'), configuration, taking care to disable the stirring, until the main tank is completely empty.

Two different washing procedures can be distinguished:

1. Spraying boom washing
2. Complete washing



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- 1—Pump Operation Selector
- 1'—Quick Coupler Suction Hose for Membrane Pump
- 1"—Main Tank
- 1"—Clean Water Tank for Washing
- 2—Pump Supply Selector
- 2'—Spraying Boom
- 2"—Chemical Product Eductor (mixer)
- 2"—Inner Walls of the Main Tank (washing)

The machine is equipped with two tanks containing clean water for washing, with a capacity total 260 liters, to manage the mixture residue at the end of the work.

To obtain thorough and complete cleaning of the circuit, it is necessary to repeat the operations indicated in the following paragraphs several times, also using specific solvents for agrochemical mixtures.

The operation must be carried out in a suitable place and can also be performed by direct intake from the outside through a dedicated siphon/ filling tube, able to provide a greater quantity of liquid.

In general it should be sufficient to repeat the washing operation 3 or 4 times with water and solvents, taking care to operate all the parts of the circuit (booms, eductor, washing walls, stirrers) in order to completely eliminate any trace of residue that could prove to be incompatible with the work to be carried out subsequently.

Boom Washing

⚠ CAUTION: Before stopping the machine, ensure the spraying computer is turned OFF.

1. Starting from the main work screen, access the ARAG virtual terminal and press the button FN (function) on the John Deere display.
2. Deactivate the liters per hectare function by pressing the icon rate control.
3. Press home to return to the main work screen.
4. Turn off the membrane pump with the switch (on the Tera monitor the icon turns grey).
5. Press the arrows ↑ to increase the pressure.
6. Activate the spraying by using the general switch of the joystick.
7. The machine displays an error message but it will

not spray because the membrane pump is switched off.

8. At this point leave the machine and move the suction lever dashboard to the left side.
9. Select the washing circuit system and the booms as per the washing instructions summarized as follows:
10. Deactivate recirculation by switching off the switch (F) or the button (K) located in the Tera 10 display.



APY64418—UN—09JUL21



APY64419—UN—09JUL21

F—Switch
K—Button

11. Turn on the membrane pump.
12. Accelerate the engine rpm with the potentiometer.
13. With the booms open, the machine will start to spray clean water.
14. After washing, switch off the membrane pump.
15. Get into the cab and turn off the main spraying switch from the joystick.
16. Reset the computer into automatic mode by reactivating the two previously deactivated icons.

Complete Washing

Once the distribution of the mixture has been completed, and after tank has been emptied, proceed as follows:

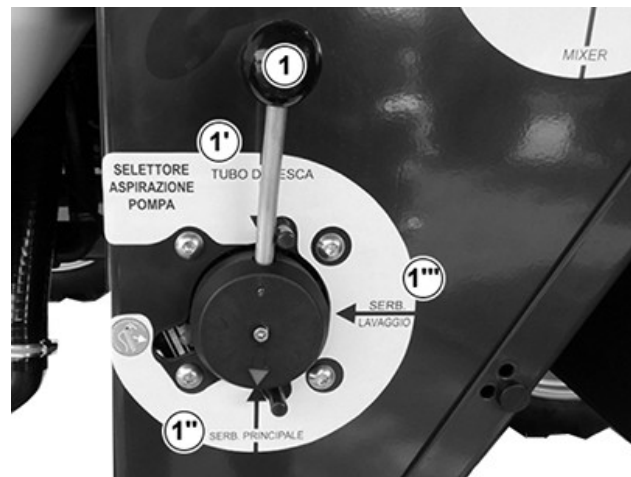
1. Perform the basic procedure.
2. Switch on membrane pump.



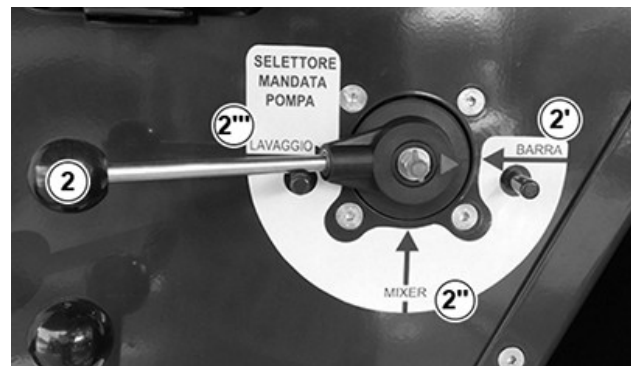
APY64420—UN—09JUL21

H—Button

3. Activate agitation by pressing the button (H).



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APY64410—UN—09JUL21

- 1—Pump Operation Selector
- 1'—Quick Coupler Suction Hose for Membrane Pump
- 1"—Main Tank
- 1'"—Clean Water Tank for Washing
- 2—Pump Supply Selector
- 2'—Spraying Boom
- 2"—Chemical Product Eductor (mixer)
- 2'"—Inner Walls of the Main Tank (washing)

4. Position the pump operation selector (1) in clean water tank for washing (1'') and the selector pump supply selector (2) in chemical product eductor (mixer) (2'') for 30 seconds (this operation is to rinse the eductor and its pipes, the contaminated water will end up inside the main tank).

5. Position the pump operation selector (1) in clean water tank for washing (1'') and the pump supply selector (2) in inner walls of the main tank (washing) (2'') for 30 seconds (this operation is to rinse the inner walls of the main tank and its pipes)
6. Repeat points 3 and 4 until all the water in the clean water tanks has run out (this will transfer the clean water from the clean water tanks into the main tank).
7. Turn off the membrane pump.
8. Position selector pump operation selector (1) in main tank (1'') and selector pump supply selector (2) in spraying boom (2').
9. Get on the machine and switch on the membrane pump.
10. Advance and activate by joystick the delivery of all the nozzles until the residual water present in the main tank is completely emptied.
11. At the end of the operation empty the residue of the main tank as described in the paragraph regarding emptying.

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Dilution of the Solution for Road Circulation

CAUTION: In order to drive on the road, it is necessary to reduce the concentration of chemical product inside the machine to a minimum.

To dilute and dispose of mixture residue at the end of the work, it is necessary to use the water from the wash-circuit tank. Then, once the distribution of the mixture is finished, and after main tank has been emptied, proceed as follows:

- Check that the additional washing tank is filled with clean water.
- Position the intake selector in the position of the wash-circuit tank.
- Operate the pump.
 - (i) The operation transfers the liquid contained in the washing tank to the spraying tank.
 - (ii) In this condition it will be possible to dispose of residual mixture in the delivery pipes to the booms sections, and to dilute by approximately 10 times the residual mixture still in circulation.
- Position the intake selector on the position of the main tank.
- Actuate the control unit to start pulverization of the residue on the plot just treated, on a set-aside area compatible with the mixture used or in a dedicated approved recovery tank;
- Turn off the membrane pump.

- At the end of the operation, empty the main tank by opening the relative tap.

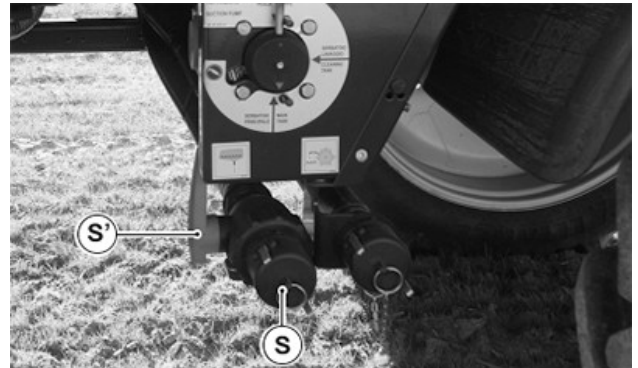
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Draining

CAUTION: Exercise care to avoid contact with the mixture contained in the tank during emptying operations.

CAUTION: Outside the work area, the washing and discharging of any type of liquid mixed even minimally with chemical products must take place in appropriate containers or at places assigned for the recovery of polluted waters, according to the regulations in force in the area where the machine is being used.

To eliminate residual substances from the main tank at the end of the work it is necessary to have a container of size adequate to the quantity present (if necessary use several containers).



APY64423—UN—16AUG21

S—Cap
S'—Valve

1. Stop the machine and stop every function.
2. Place the container under the drain plug.
3. Make sure that valve (S') is closed.
4. Remove the cap (S).
5. Use the valve (S'), to manage the flow of liquid in outlet taking care to avoid splashing.
6. Wait for dripping to stop.
7. Completely close the valve (S').
8. Replace the cap (S).

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Spray Boom

Spray Boom



A—Spray Boom
B—Breakaway Boom Section

TG645231—UN—28AUG24

The hydraulic functions are electro-hydraulically operated by means of the multi-function lever and boom select switch.

During the transport, the spray booms are divided into two segments on each upper side of the machine.

The spray boom (A) is composed of rigid, boom

segments connected to one another with hinges. These segments contain a total of 6 to 15 spray line sections, depending on the version.

The spray booms are fitted with a central pendulum and anti-yaw boom suspension system. This boom-leveling system allows for working on uneven ground (vertical movements) and prevents yawing of the spray boom (horizontal movements).

The central pendulum boom suspension with shock absorbers ensures that the machine can rotate around its longitudinal axis without any effect on the spray boom. The spray boom will therefore remain horizontal, when properly adjusted.

The outer spray boom segments have a spring loaded breakaway section fitted to provide boom and nozzle protection against obstacle impact. Upon contact with an obstacle, the breakaway section in question deflects (backwards, forwards, or upwards) and then returns to its original position once the obstacle has been passed. The spray lines and nozzle bodies are also completely protected along the whole boom width in order to avoid damage during spraying.

Working Width		Symmetric Folding	A-Symmetric Folding
24 m	HSS Small	12 m	18 m
28 m	HSS Small	21 m	24.5 m
30 m	HSS Small	21 m	24.5 m
28 m	HSS Big	15 m	21.5 m
30 m	HSS Big	15 m	22.5 m
33 m	HSS Big	28 m	30.5 m
36 m	HSS Big	28 m	32 m

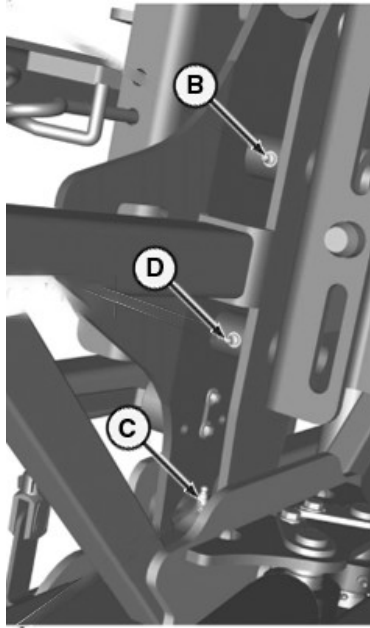
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24—30 m HC Spray Boom

Maintenance

Lubricating points

All grease nipples can be filled with a quality brand universal grease type. Use a mechanical grease pump. Two injections per grease nipple are sufficient.

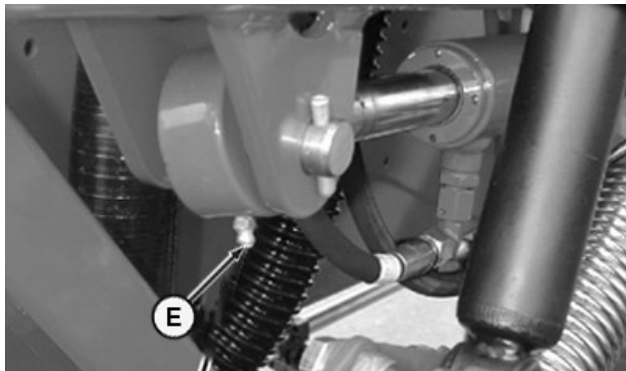


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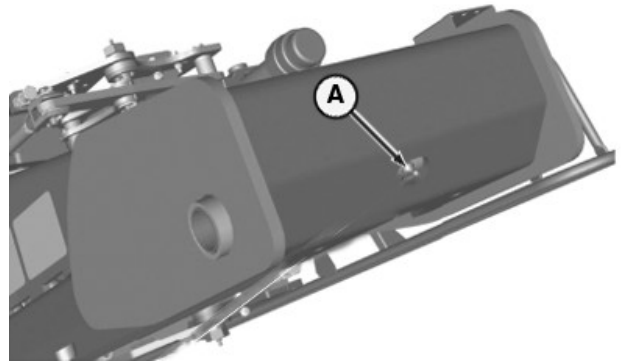
- At the lowest pin joint (C) where the crank is fastened to the middle section.
- At the point of attachment of the hydraulic cylinder of the hydraulic slope correction (E).
- At the attachment points of folding cylinders.
- At the attachment points of the buffer cylinders.
- At the pin joint of the middle of spray boom.
- With the upper and lower hinge points of the spray boom parts.
- At the lowest bearing of the impact protection.

1. Grease the guides of the middle section and the lifting frame.
2. Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.

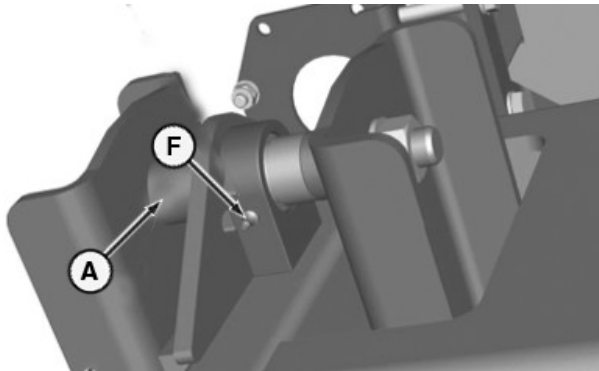
NOTE: Use grease that will not dry out and become hard. That will prevent damage to cylinder oil seals.



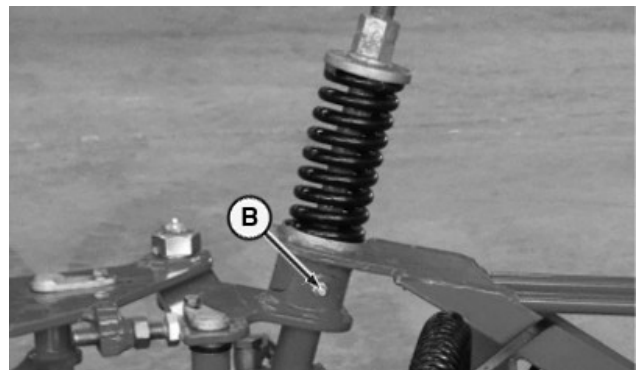
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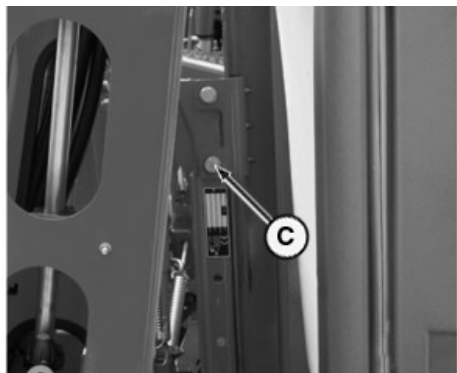
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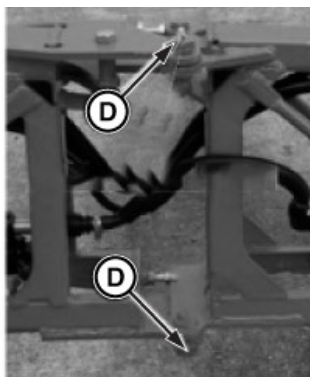
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A—Highest Pin Joint
 B—Center-Most Pin Joint
 C—Lowest Pin Joint
 D—Locking Point
 E—Hydraulic Slope Correction
 F—Grease Nipple

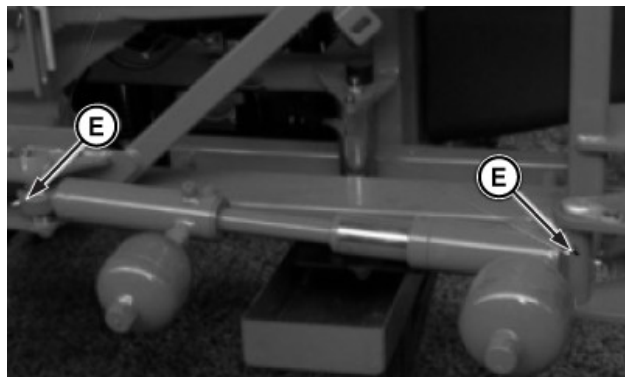
- At the highest pin joint (A) of the pendulum suspension where the pendulum is connected to the lifting frame.
- At the center most pin joint (B) of the pendulum suspension where the pendulum is connected to the middle section.



APY64432—UN—23JUL21



TG598737—UN—23OCT23



TG598738—UN—23OCT23

- A—Lowest Attachment Point
- B—Safety Tip End
- C—Guide
- D—Pin Joint of Spray Boom Section
- E—Buffer Cylinder

Winter

CAUTION: Wear protective clothing, such as a spray overall, safety gloves, shoes and mask while working with the wet system.

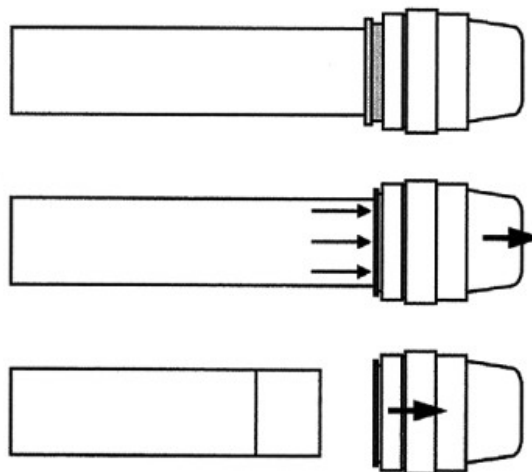
CAUTION: Work safely on the wet system. The wet system could be under pressure and may contain chemical agents. Be careful when working on the wet system:

NOTE: If the machine is being put away for a short or longer period of time, it is recommended to lubricate and clean it first. If it is lubricated first prevents dirt, agents, fertilizer, and water from entering the bearings.

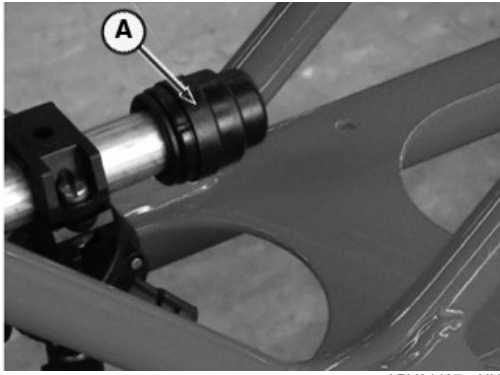
- The wet system should be rinsed thoroughly with clean water.
- The exterior of the machine should be cleaned thoroughly.
- Switch the machine off and remove the key from the ignition.
- Engage the park brake of the machine.
- Release the pressure in the wet system by opening the stop valves and placing them respectively to the filling setting.
- Carefully follow the instructions given. In the event of injury or in case of contact with materials:
 - Clean the point of contact with a lot of water.
 - Consult a physician immediately.

Water has to be drained from the spray boom before winter or when frost is expected to prevent frost damage. Do the following:

1. Place a trough under the end of the section.
2. Push the inner edge of an end plug (A) inwards while pulling the end plug (A) as a whole outwards.



APY64436—UN—20JUL21



APY64437—UN—23JUL21

A—End Plug

3. Push the spray boom alternating downwards to the left and to the right until the spray pipe is completely empty.
4. Do not put the end plug (A) back in place. Instead, leave spray lines open to dry properly.
5. Remove the collected liquid in accordance with the valid disposal regulations.
6. Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.
7. After the winter or period of frost the end caps must be replaced.

NOTE: Use grease that will not dry out and become hard. That prevents damage to cylinder oil seals.

Adjustment (Throttle Valves)

⚠ CAUTION: No person should be within the reach of the spray boom. Ensure that the area is clear of bystanders and objects before folding or spraying. The spray boom could make unexpected movements. Contact with these materials could cause serious personal injury.

⚠ CAUTION: Never work under an unsecured spray boom. Never go underneath an elevated, unsecured spray boom. Always close the stop valve on the hydraulic lift cylinder or place the spray boom on proper supports. A falling spray boom could cause fatal injuries.

Adjusting the throttle valves

The speed with which hydraulic functions are executed can be set using the throttle valves. The stepless adjustable throttle valves are mounted either on the relevant cylinder or on the hydraulic blocks. The hydraulic block is located under the protective cover.

NOTE: Functions that belong to solenoid valves on the hydraulic blocks are located on the sticker in the SHC box.

The throttle valves are set in such a manner by the

manufacturer that acceptable hydraulic pressure and oil flow are achieved in actual application with appropriate speed. In exceptional cases, e.g., if the machine has a very high or a very low hydraulic pressure, it is necessary to adjust the butterfly valve.

Turn the set screw of the throttle valve to the right (clockwise), for the function to be performed faster.

Turn the set screw to the left, in other words (counter-clockwise), for the function to be performed slower.

1. Unfold the spray boom onto firm supports or close the stop valve on the hydraulic lift cylinder.
2. Depressurize the hydraulic system.
3. Switch the machine off and remove the keys from the ignition.
4. Engage the parking brake of the machine and place wheel chocks before the wheels.
5. Remove the protective cover of the hydraulic block for throttle valves.



APY64440—UN—31JUL21

A—Throttle Valve

6. Adjust the throttle valve (A) by turning the control knob; a small turn can cause a considerable change.
7. Put the protective cover of the hydraulic block back in place.
8. Test the new settings of the butterfly valve block and repeat the procedure above if required.
9. Remove the small protective cover for the throttle valves (A) on the cylinders and loosen the lock nut on the set screw a few turns.
10. Set the throttle valve (A) by turning the set screw: A 1/4 revolution could produce a significant change.
11. Fasten the lock nut on the set screw and put the small protective cover in place.

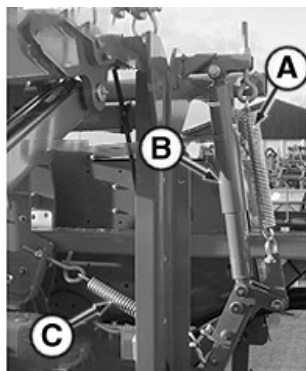
Directions

- Turn the lock nut as if it had a rubber sealing.
- Set screw turns inward once oil pipe to the cylinder has been closed. Do not turn the set screw outwards more than 6 mm.

NOTE: The furthest position can be seen on the ring markings on the set screw. The throttle valve is completely open in this case.

- It takes between 7 and 10 seconds for the spray boom to unfold and fold.

Setting Balance



APY64441—UN—31JUL21

A—Spring - Preload (light gap)
B—Damper
C—Spring - Preload (2 mm)

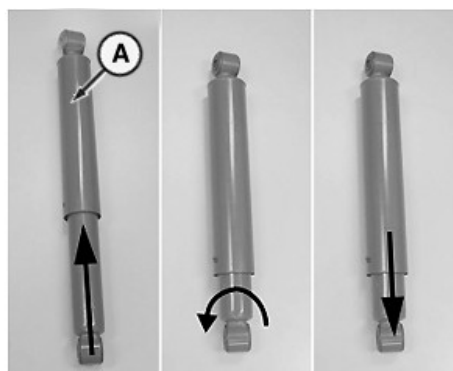
A few springs and dampers (B) have been mounted to prevent unexpected movement of spray boom. They have to be readjusted if the balance has been altered or after a spring or damper (B) has been replaced.

1. Fold the spray boom out completely.
2. Let the spray boom down on proper supports or close the stop valve on the hydraulic lift cylinder.
3. Take the pressure off the hydraulic system.
4. Switch the machine off and remove the keys from the ignition.
5. Engage the parking brake of the machine and place wheel chocks before the wheels.
6. Springs and/or dampers have to be replaced as described below.

When replacing springs and dampers (B):

1. First relax the springs by loosening the nuts at the top.
2. Remove the springs and dampers (B) to be replaced.
3. Adjust the height of the damper (B).
4. Set the tension of the springs until they have reached the desired preload.

Adjusting Damper

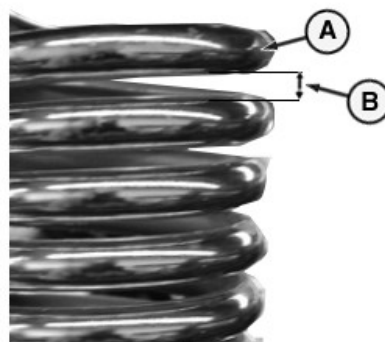


APY64442—UN—31JUL21

A—Damper

- Push the damper (A) in completely.
- Rotate the lowest part of the damper (A) by a few turns in the counterclockwise direction until it can be freely turned.
- To increase dampening effect, rotate the lowest part a half a turn or full turn in the clockwise direction.
- Pull the damper (A) out until the assembly has desired length.

Adjusting Springs



APY64443—UN—06AUG21

A—Spring
B—Preload (x mm)

- Mount the springs (A) in the correct place.
- Turn the adjusting bolt until the desired preload is achieved:
 - For the spring beside the damper, preload (x mm) (B) should be a small gap.
 - For the spring (A) between the pendulum and the crank, preload (x mm) (B) is 2 mm.
- Turn the lock nut against the adjusting bolt.

NOTE: Spring settings have been provided as an example. Actual spring settings depend on the boom width.

Setting the Spray Boom Horizontally and Vertically

After unfolding the spray boom, the lower profile must

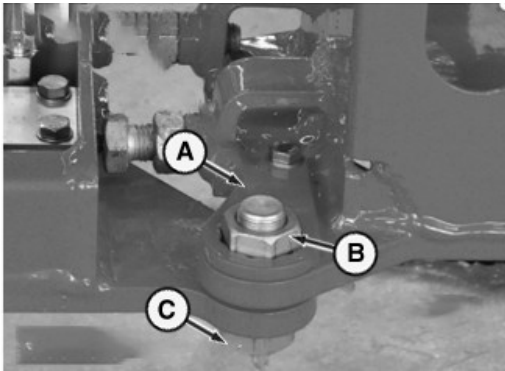
be properly positioned horizontally and vertically. If one or more spray boom parts not aligned, they can be adjusted.

- Park the machine on a firm, horizontal base.
- Fold the spray boom out completely and lock the pendulum lock.
- Depressurize the hydraulic system.
- Switch the machine off, remove the key from the ignition and engage the parking brake.
- Close the stop valve at the hydraulic lift cylinder.
- Check with a spirit level if the middle section of the spray boom is horizontally level.

Horizontal Adjustment

Spray Boom Parts

The outer boom parts can be aligned horizontally by adjusting the eccentric bolts.



APY64444—UN—31JUL21

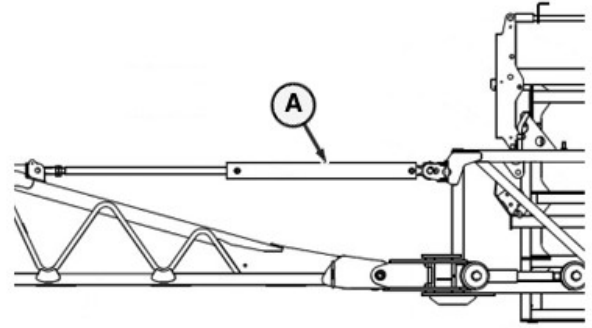
- A—Safety Plate
- B—Check Nut
- C—Eccentric Bolt

1. Unscrew the bolt which holds the safety plate (A).
2. Remove the safety plate (A).
3. Loosen the check nut (B) by a few turns.
4. Adjust the eccentric bolt (C) so that spray parts are aligned horizontally.
5. Fasten the check nut (B) again.
6. Place the safety plate (A) back over the check nut (B).
7. Screw the eccentric bolt (C) which holds the safety plate (A) again.

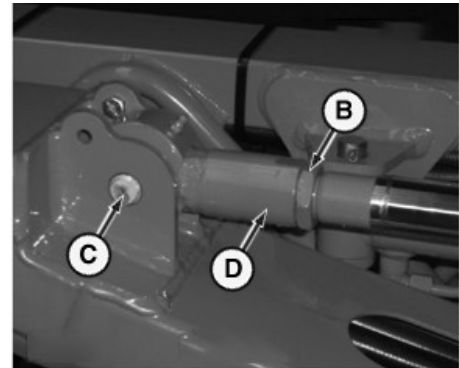
Middle Section

CAUTION: Never work under an unsecured spray boom. Never go underneath an elevated, unsecured spray boom. Always close the stop valve on the hydraulic lift cylinder or place the spray boom on proper supports. A falling spray boom could cause fatal injuries.

The angle of the boom sections is set with the use of hydraulic cylinders.



APY64445—UN—31JUL21



APY64446—UN—31JUL21

- A—Hydraulic Cylinder
- B—Lock Nut
- C—Pin
- D—Ball Head

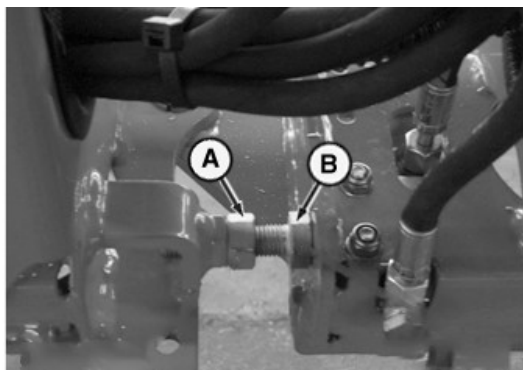
The length of the hydraulic cylinders (A) is adjusted in such a way in the factory that the spray boom valves are horizontally level and aligned with the middle section, when the hydraulic cylinders (A) are fully extended. Only change the angle upwards. In order to set the spray boom valves from the horizontal position also downwards.

- Unfold the spray boom and place it on firm supports.
- Depressurize the hydraulic system.
- Switch the machine off and remove the keys from the ignition.
- Engage the parking brake of the machine and place wheel chocks before the wheels.
- Loosen the lock nut (B) by a few turns.
- Remove the pin (C) from ball head (D).
- Turn the ball head until the cylinder reaches the desired length.
- Put the pin back into the ball head (D).
- Tighten the lock nut (B).

Setting Boom Vertically

When folding the boom, sequence valves ensure proper folding sequence. These valves are fitted in the various boom sections depending on the type of boom and selected hydraulic package.

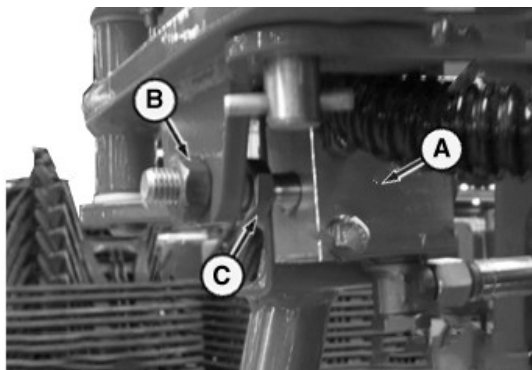
The boom can be adjusted vertically with the adjusting bolts in the sub profile.



APY64447—UN—31JUL21

A—Check Nut
B—Adjusting Bolt

- Loosen the check nut (A) by a few turns.
- Set the adjusting bolt (B) so that spray parts are vertically aligned.
- Fasten the check nut (A) again.



APY64448—UN—06AUG21

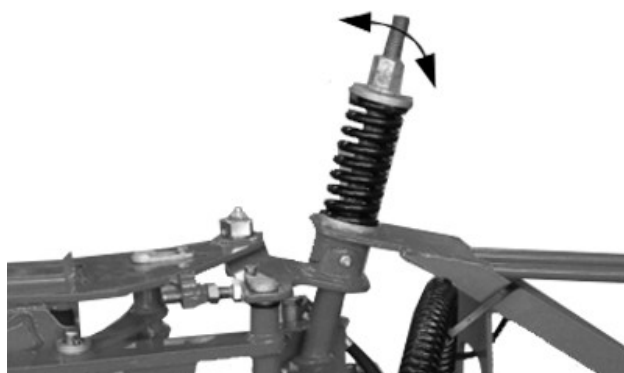
A—Sequence Valve
B—Check Nut
C—Adjusting Bolt

The sequence valves (A) fitted at the top of the boom section should be adjusted.

IMPORTANT: It is important not to overload variable geometry of folding.

When the boom segment is completely folded up, adjust the adjusting bolt (C) is adjusted so that the pin of sequence valve (A) is operated at approximately 5 mm. Subsequently tighten with the check nut (B). Make sure that the stop bolt does not touch the steelwork.

Setting the Safety Tip End



APY64449—UN—06AUG21

The safety tip end can be adjusted if it breaks out too quickly, e.g., while driving on the field, or if it does not break out fast enough. The safety tip end can be adjusted with the tension adjusting nut above the spring. Increasing the spring pressure will slow down the breaking out of the safety tip end.

Troubleshooting Table

Symptom	Problem	Solution
Spray boom not balanced well	Wrong balancing setting	Select the correct balancing setting.
	Springs and/or dampers not set well	Set the springs and/or dampers correctly.
The spray shapes from the jet nozzles do not overlap well	Working height of the spray boom not adjusted well	Check the working height of the spray booms.
	Jet nozzles worn out	Replace jet nozzles.
	Leakage at liquid hoses or connections	Check the wet system.
Hydraulic functions performed very slowly	Leakage at hydraulic hoses or blocks	Regularly inspect the hydraulic system.

Symptom	Problem	Solution
	Throttle valves not correctly adjusted	Adjust the throttle valves.
Hydraulic functions performed too quickly	Throttle valves not correctly adjusted	Adjust the throttle valves.
Hydraulic functions do not operate	Break in hydraulic hose	Regularly inspect the hydraulic system.
	Blockage in hydraulic hose	Have an authorized person attend to the problem.
	Error in the electric drive of the hydraulic blocks	Use the emergency control to fold the spray boom in. See your John Deere dealer or other service provider for information on this.

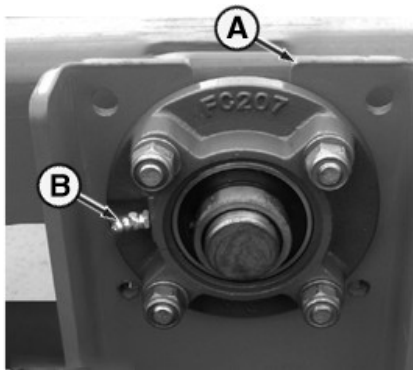
AWQNIWX,1754894373448-19-18AUG25

24—36 m HSA-HSS Spray Boom

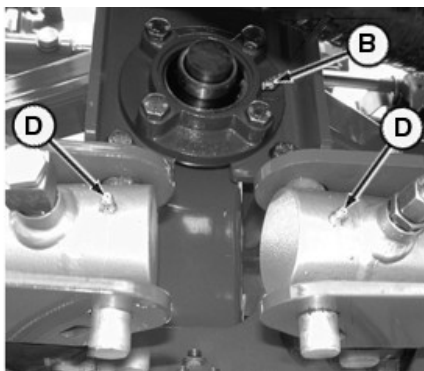
Maintenance

Lubricating Points

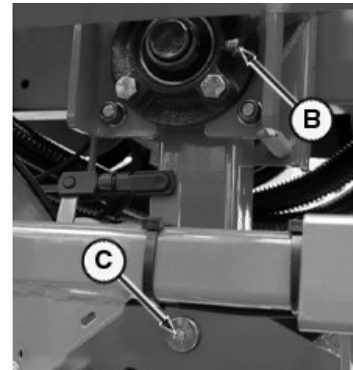
All grease nipples can be filled with a quality brand universal grease type. Use a mechanical grease pump. Two injections per grease nipple are sufficient.



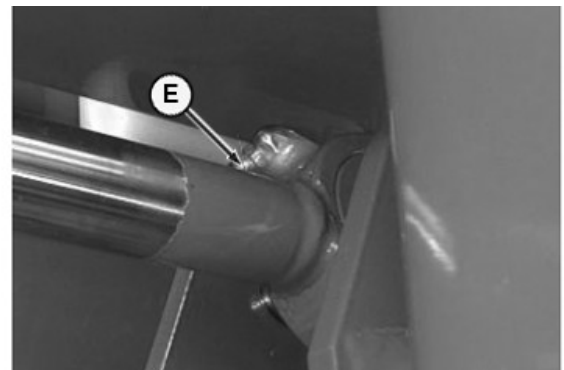
APY64450—UN—31JUL21



APY64451—UN—05AUG21



APY64452—UN—05AUG21



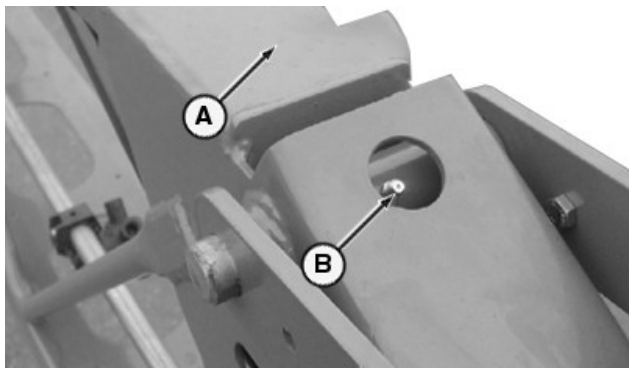
APY64453—UN—05AUG21

- A—Highest Pin Joint
- B—Center most Pin Joint
- C—Lowest Pin Joint
- D—Fold Cylinders of Innermost Spray Boom Parts
- E—Hydraulic Slope Correction

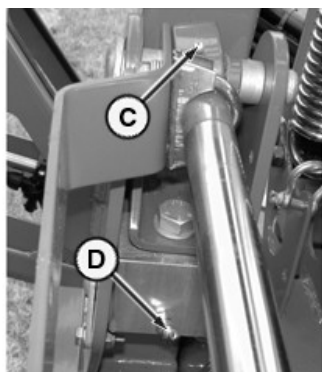
- At the highest pin joint (A) of the pendulum suspension where the pendulum is connected to the lifting frame.
- At the center most pin joint (B) of the pendulum

suspension where the pendulum is connected to the middle section.

- At the lowest pin joint (C) where the crank is fastened to the middle section.
- At the point of attachment of the hydraulic cylinder of the hydraulic slope correction (E).



APY64454—UN—06AUG21

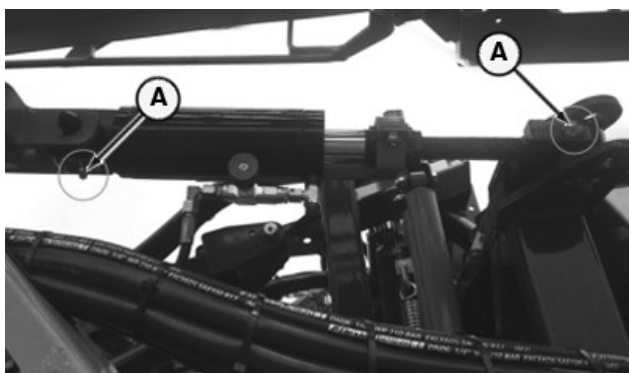


APY64455—UN—05AUG21

A—Locking Arm Pendulum
B—Uppermost Point of Attachment
C—Ball Eye Cylinder
D—Lowest Attachment Point

- At the points of attachment of the hydraulic cylinders before the innermost spray boom parts are folded in.
- With the ball eye cylinders (C) and the lowering of the locking arms or locking arm pendulum lowered (A).

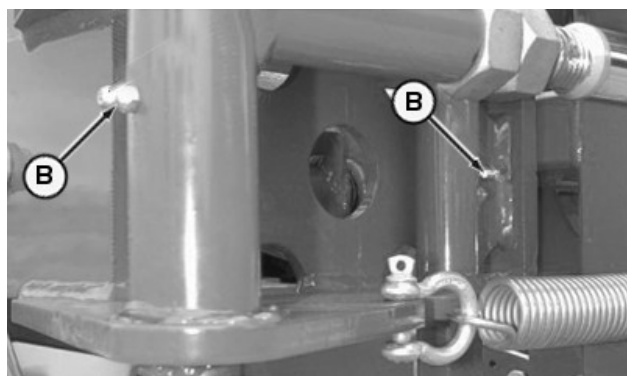
HSS Spray Boom



APY64456—UN—05AUG21

A—Cylinder's Independent Slope Correction

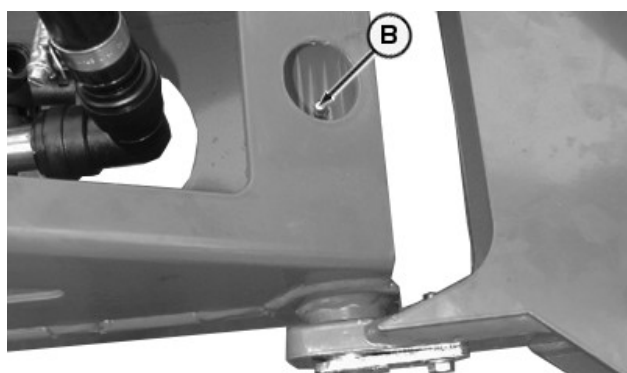
- At the cylinder's independent slope correction (A).



APY64457—UN—05AUG21

B—Horizontal Pin Joint

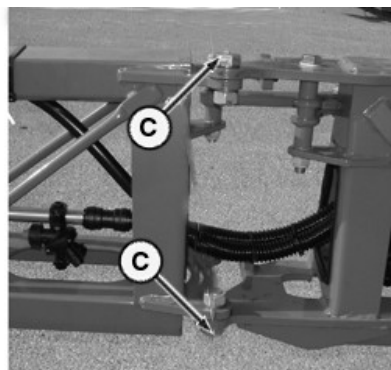
- At the horizontal pin joint (B) in the middle of spray boom.



APY64459—UN—06AUG21

B—Vertical Pin Joint

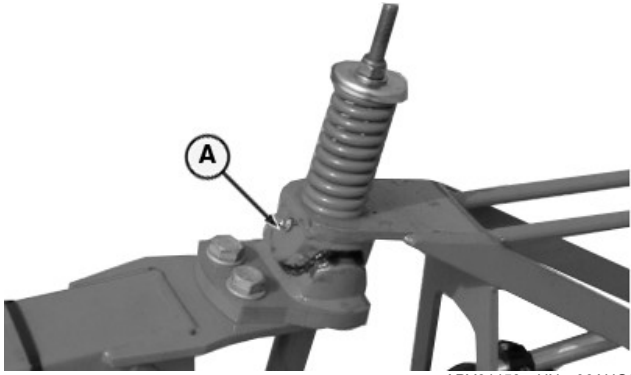
- At the vertical pin joint (B) of the spray boom halves.



APY64460—UN—05AUG21

C—Hinge Point of Outermost Spray Boom Part

- With the upper and lower hinge point of outer most spray boom part (C).



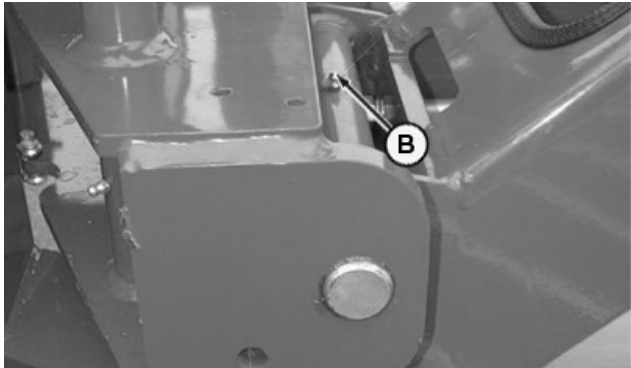
APY64458—UN—06AUG21

A—Impact Protection

- At the lowest bearing of the impact protection (A).

NOTE: Grease the guides of the middle section and the lifting frame.

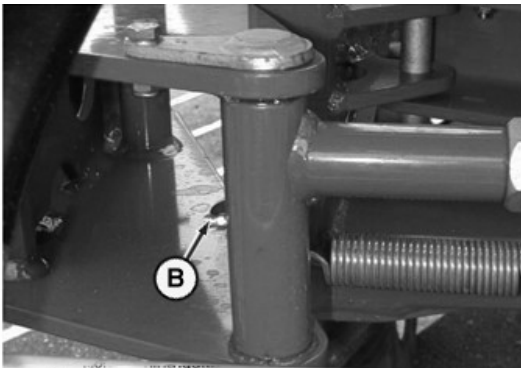
HSA Spray Boom



APY64462—UN—05AUG21

B—Vertical Hinge Shaft

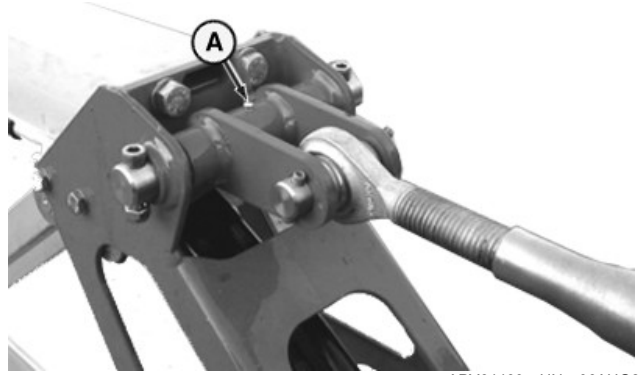
- Vertical hinge shaft (B) of boom parts.



APY64464—UN—02AUG21

B—Horizontal Hinge Shaft

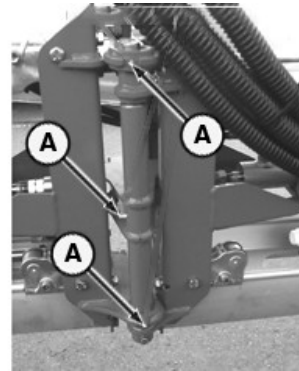
- Horizontal hinge shaft (B) of boom parts.



APY64463—UN—06AUG21

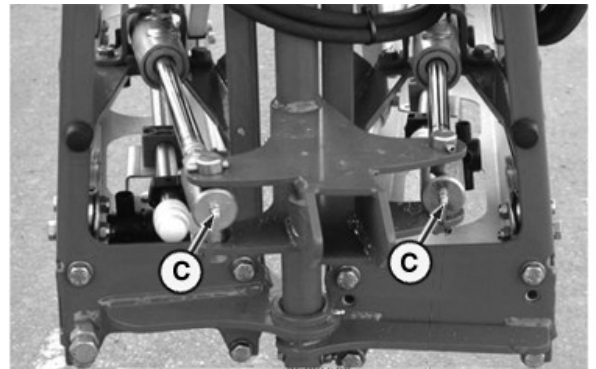
A—Coupling Point of the Boom Parts

- Coupling point of the boom parts (A).
- Folding cylinder hydraulic coupling points.
- Axle between innermost and outermost side plate.



APY64461—UN—05AUG21

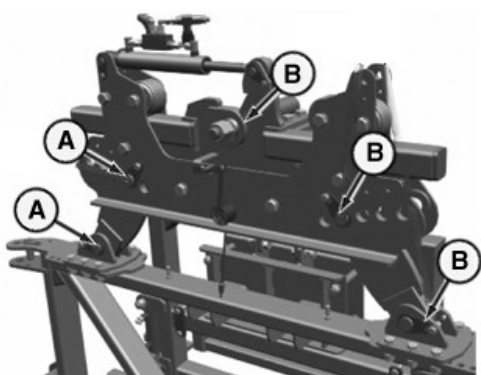
A—Hinge Point of Outermost Spray Boom Part



APY64465—UN—02AUG21

C—Folding the Coupling Point of the Boom Parts

Flat Land Balancing



A—Hinge Points
B—Hinge Points

There are lubrication points in the flat land balancing.

Winter Storage

CAUTION: Wear protective clothing, such as a spray overall, safety gloves, shoes and mask while working with the wet system.

CAUTION: Work safely on the wet system. The wet system could be under pressure and may contain chemical agents. Be careful when working on the wet system:

- The wet system should be rinsed thoroughly with clean water.
- The exterior of the machine should be cleaned thoroughly.
- Switch the machine OFF and remove the key from the ignition.
- Engage the park brake of the machine.
- Release the pressure in the wet system by opening the stop valves and placing them respectively to the filling setting.
- Carefully follow the instructions given. In the event of injury or in case of contact with materials:
 - Clean the point of contact with a lot of water.
 - Consult a physician immediately.

NOTE: If the machine is being put away for a short or longer period of time, it is recommended to lubricate and clean it first. If it is lubricated first prevents dirt, agents, fertilizer, and water from entering the bearings.

Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.

NOTE: Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.

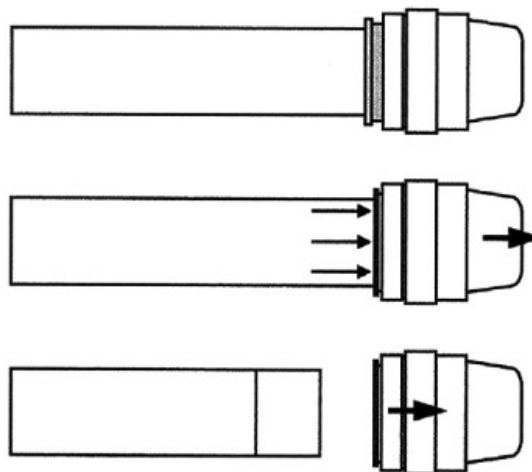
Draining Spray Lines

Water has to be drained from the spray boom before winter or when frost is expected to prevent frost damage. Do the following:

1. Place a trough under the end of the section.
2. Push the inner edge of an end plug (A) inwards while pulling the end plug as a whole outwards.
3. Push the spray boom alternating downwards to the left and to the right until the spray line is completely empty.
4. Do not put the end plug (A) back in place. Instead, leave spray lines open to dry properly.
5. Remove the collected liquid in accordance with the valid disposal regulations.



APY64467—UN—06AUG21



APY64436—UN—20JUL21

A—End Plug

Adjustment

CAUTION: No person should be within reach of the spray boom. Ensure that the area is clear of bystanders and objects before folding or spraying. The spray boom could make unexpected movements. Contact with these materials could cause serious personal injury.

⚠ CAUTION: Never work under an unsecured spray boom. Never go underneath an elevated, unsecured spray boom. Always close the stop valve on the hydraulic lift cylinder or place the spray boom on proper supports. A falling spray boom could cause fatal injuries.

Adjusting the Throttle Valves

The speed with which hydraulic functions are executed can be set using the throttle valves. The stepless adjustable throttle valves are mounted either on the relevant cylinder or on the hydraulic blocks.

NOTE: Functions that belong to solenoid valves on the hydraulic blocks are located on the sticker in the SHC box.

The throttle valves are set in such a manner by the manufacturer that acceptable hydraulic pressure and oil flow are achieved in actual application with appropriate speed. In exceptional cases, e.g., if the machine has a very high or a very low hydraulic pressure, it is necessary to adjust the butterfly valve.

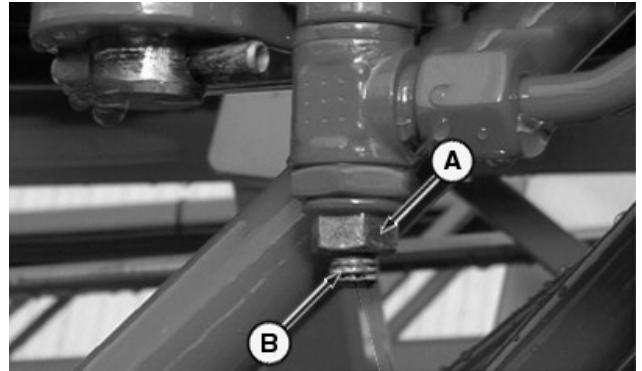
Turn the set screw of the throttle valve to the right (clockwise), for the function to be performed faster.

Turn the set screw to the left (counterclockwise), for the function to be performed slower.

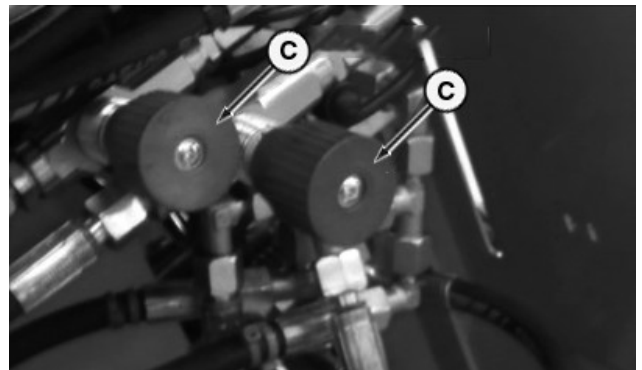
- Unfold the spray boom onto firm supports or close the stop valve on the hydraulic lift cylinders.
- Depressurize the hydraulic system.
- Switch the machine off and remove the keys from the ignition.
- Engage the parking brake of the machine and place wheel chocks before the wheels.
- Remove the protective cover for throttle valves on the hydraulic block.
- Remove the small protective cover and loosen the lock nut on the set screw a few torques.
- Set the throttle valve by turning the set screw, a ¼ revolution could provide a significant change.
- Fasten the lock nut on the set screw again and put the small protective cover back in place.
- Put the protective cover of the hydraulic block back in place.
- Test the new settings of the butterfly valve block and repeat the procedure above if required.

Directions

Turn the lock nut as if it had a rubber sealing.



APY64471—UN—05AUG21



APY64472—UN—05AUG21

A—Lock Nut
B—Adjustment Screw
C—Throttle Valve (2 used)

- Set screw turns inward once oil pipe to the cylinder has been closed. Do not turn the set screw outwards more than 6 mm.

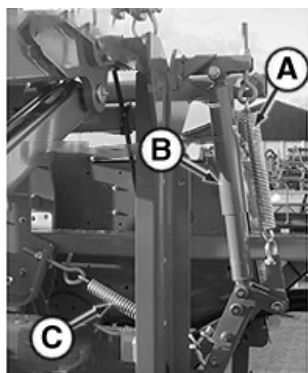
NOTE: The furthest position can be seen on the ring markings on the set screw. The throttle valve is completely open in this case.

- It takes between 7 and 10 seconds for the spray boom to unfold and fold.

NOTE: In the case of 3-part folded HSS booms (32—42 m) it is possible to adjust folding and unfolding speed using throttle valves (C) located behind protective cover.

NOTE: These booms have a DC motor fitted and the supplied set screw is twisted.

Setting Balance



APY64441—UN—31JUL21

- A—Spring - Preload (light gap)
B—Damper
C—Spring - Preload (2 mm)

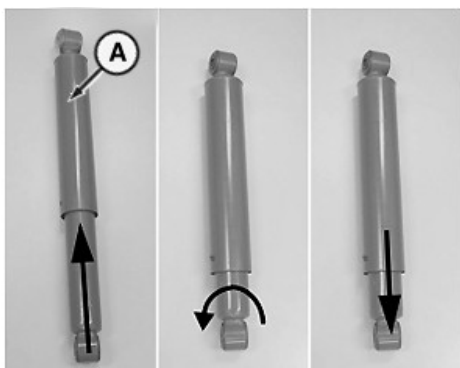
A few springs and dampers (B) have been mounted to prevent unexpected movement of spray boom. They have to be readjusted if the balance has been altered or after a spring or damper (B) has been replaced.

1. Fold the spray boom out completely.
2. Let the spray boom down on proper supports or close the stop valve on the hydraulic lift cylinder.
3. Take the pressure off the hydraulic system.
4. Switch the machine off and remove the keys from the ignition.
5. Engage the parking brake of the machine and place wheel chocks before the wheels.
6. Springs and/or dampers have to be replaced as described below.

When replacing springs and dampers (B):

1. First relax the springs by loosening the nuts at the top.
2. Remove the springs and dampers (B) to be replaced.
3. Adjust the height of the damper (B).
4. Set the tension of the springs until they have reached the desired preload.

Adjusting Damper

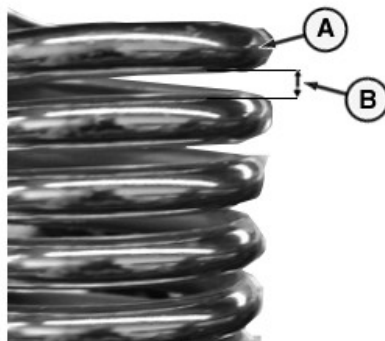


APY64442—UN—31JUL21

- A—Damper

- Push the damper (A) in completely.
- Rotate the lowest part of the damper (A) by a few turns in the counterclockwise direction until it can be freely turned.
- To increase dampening effect, rotate the lowest part a half a turn or full turn in the clockwise direction.
- Pull the damper (A) out until the assembly has desired length.

Adjusting Springs



APY64443—UN—06AUG21

- A—Spring
B—Preload (x mm)

- Mount the springs (A) in the correct place.
- Turn the adjusting bolt until the desired preload is achieved:
 - For the spring beside the damper, preload (x mm) (B) should be a small gap.
 - For the spring (A) between the pendulum and the crank, preload (x mm) (B) is 2 mm.
- Turn the lock nut against the adjusting bolt.

NOTE: Spring settings have been provided as an example. Actual spring settings depend on the boom width.

Setting the Spray Boom Horizontally and Vertically

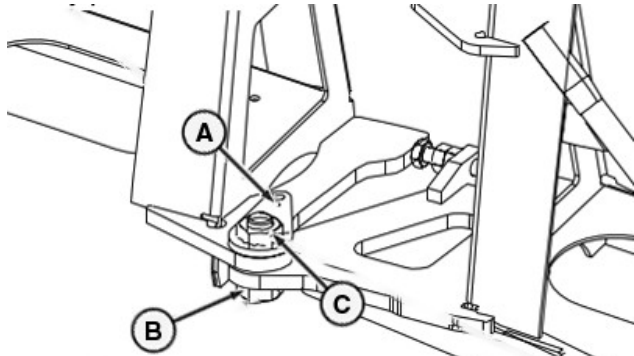
After unfolding the spray boom, the lower profile must be properly positioned horizontally and vertically. If one or more spray boom parts not aligned, they can be adjusted.

- Park the machine on a firm, horizontal base.
- Fold the spray boom out completely and lock the pendulum lock.
- Depressurize the hydraulic system.
- Switch the machine off, remove the key from the ignition and engage the parking brake.
- Close the stop valve at the hydraulic lift cylinder.
- Check with a spirit level if the middle section of the spray boom is horizontally level.

Horizontal Adjustment

The spray boom parts

The outer boom parts can be aligned horizontally by adjusting the eccentric bolts.



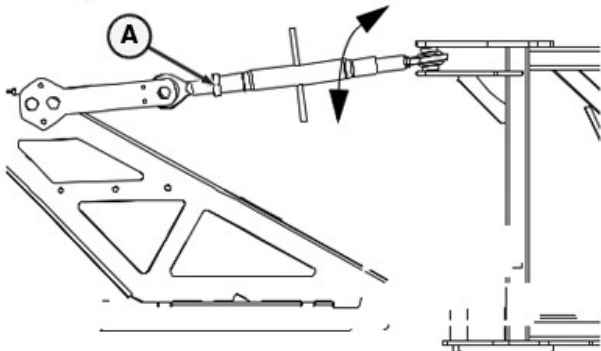
APY64476—UN—05AUG21

A—Safety Plate
B—Eccentric Bolt
C—Check Nut

- Unscrew the bolt which holds the safety plate (A).
- Remove the safety plate (A).
- Loosen the check nut (C) by a few turns.
- Adjust the eccentric bolt (B) so that spray parts are aligned horizontally.
- Fasten the check nut (C) again.
- Place the safety plate (A) back over the check nut (C).
- Screw the eccentric bolt (B) which is holding the safety plate (A) again.

Middle Section

The inner spray boom parts can be aligned horizontally by setting the top link. Turn the top link using a rod so that the spray boom is hanging horizontally.



APY64477—UN—05AUG21

A—Lock Nut

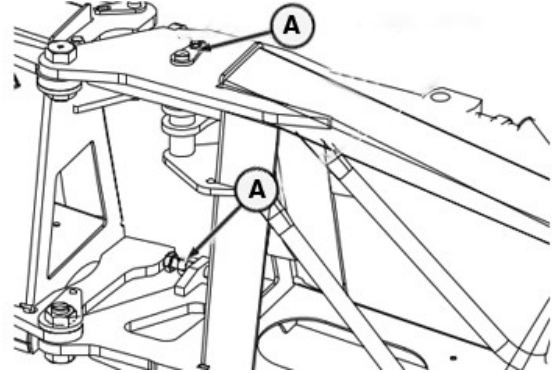
- Loosen the lock nut (A) by a few turns.
- Adjust the top link until the boom is horizontal.
- Tighten the lock nut (A) again.

Setting Vertically

The Spray Boom Parts

Adjust both stop bolts at the front and rear of the hinge simultaneously. The side part must lie opposite to both stop bolts.

- Loosen one lock nut on both stop bolts by a few turns, depending on the direction the stop bolts have to be adjusted.
- Adjust the length of the stop bolts by turning the other lock nut so that spray parts are vertically aligned.

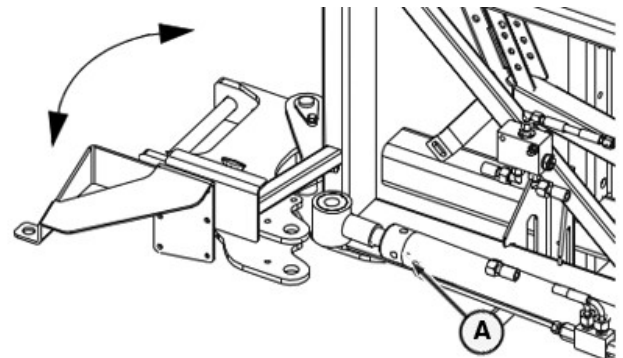


APY64478—UN—04AUG21

A—Adjusting Bolt

- Fasten the first lock nut again, without changing the length of the stop bolts.

Middle Section

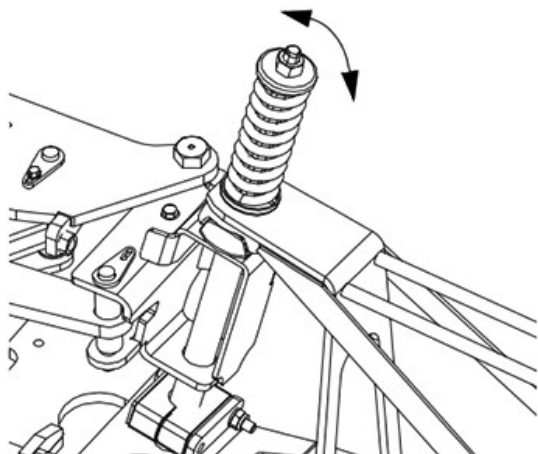


APY64479—UN—05AUG21

A—Hinge Bolt

The vertical direction of the side parts can be aligned using the hinge bolt (A). Turn the hinge bolt (A) to the right until the side part is aligned horizontally with the other side part.

Setting the Safety Tip End



The safety tip end can be adjusted if it breaks out too quickly, e.g., while driving on the field, or if it does not break out fast enough. The safety tip end can be adjusted with the tension adjusting nut above the spring. Increasing the spring pressure will slow down the breaking out of the safety tip end.

APY64480—UN—20JUL21

Troubleshooting Table

Symptom	Problem	Solution
Spray boom not balanced well	Wrong balancing setting	Select the correct balancing setting.
	Springs and/or dampers not set well	Set the springs and/or dampers correctly.
The spray shapes from the jet nozzles do not overlap well	Working height of the spray boom not adjusted well	Check the working height of the spray booms.
	Jet nozzles worn out	Replace jet nozzles.
	Leakage at liquid hoses or connections	Check the wet system.
Hydraulic functions performed very slowly	Leakage at hydraulic hoses or blocks	Regularly inspect the hydraulic system.
	Throttle valves not correctly adjusted	Adjust the throttle valves.
Hydraulic functions performed too quickly	Throttle valves not correctly adjusted	Adjust the throttle valves.
Hydraulic functions do not operate	Break in hydraulic hose	Regularly inspect the hydraulic system.
	Blockage in hydraulic hose	Have an authorized person attend to the problem.
	Error in the electric drive of the hydraulic blocks	Use the emergency control to fold the spray boom in. See your John Deere dealer or other service provider for information on this.

AWQNIWX,1754894472256-19-18AUG25

Individual Nozzle Control (INC)

Overview

Individual Nozzle Control (INC) and Individual Nozzle Control Pro (INC Pro) allows the nozzle bodies to be turned on and off based on section control. Each nozzle body contains a valve that can switch on and off the nozzle body separately and can be used for pulsed spraying if the machine is equipped with INC Pro.

INC Pro provides the operator with a larger speed range and varied application rates without changing pressure or spray tips. Operating a combination of nozzle pulsing and active nozzle settings allows the system to maintain a constant pressure and droplet size while changing speeds. These features also allow the system to change the rate and the spray width, compensating for speed differences at boom ends when turning.

With INC and INC Pro, prescription or map-based applications are also possible using active nozzle settings. When section control is used, nozzle bodies are turned ON or OFF individually, minimizing the amount of overlap.

NOTE: Operator must ensure properly mixed crop protection chemicals as sedimentation can impact the operation and performance of the plunger in the nozzle body.

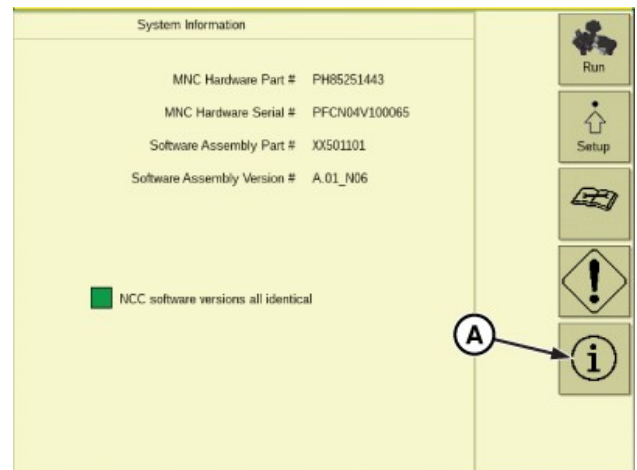
Inspect the nozzle body plunger if nozzle does not start spraying and review if there is chemical sedimentation.

NOTE: If the operator stops working with the machine for more than 1 hour, a boom rinse must be considered to avoid chemical sedimentation.

Preconditions for INC and INC Pro:

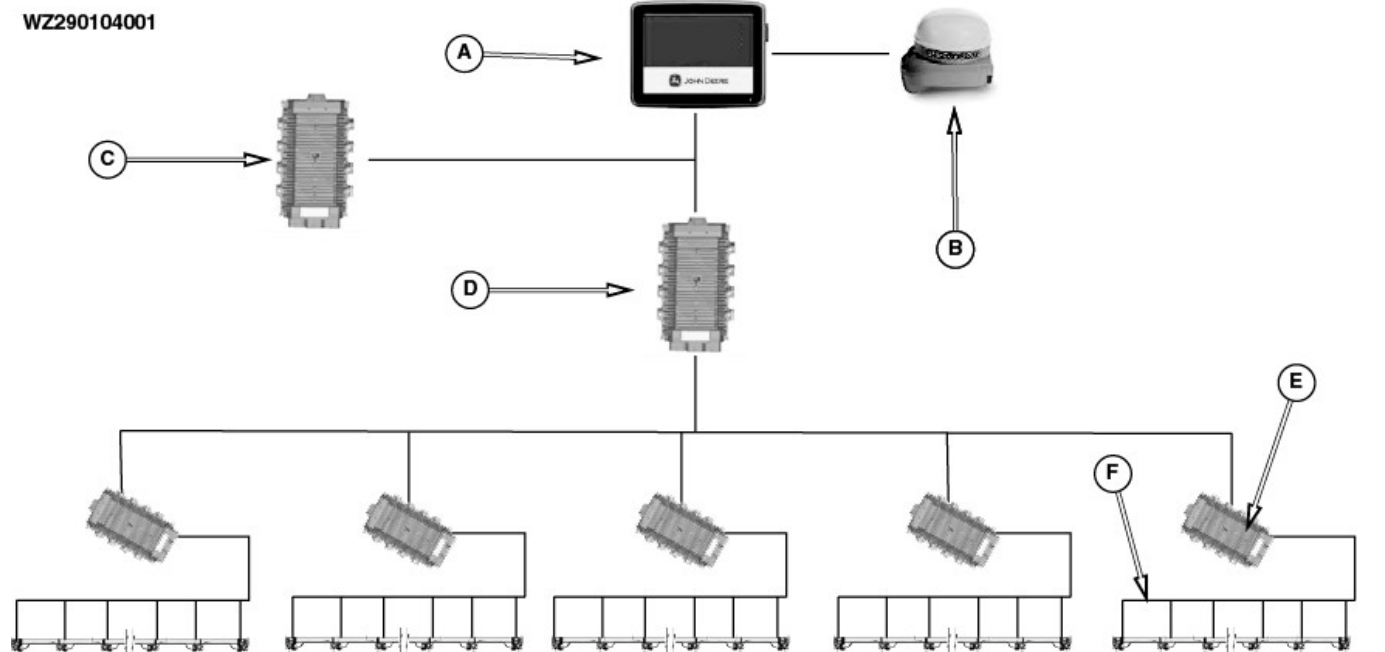
- Starfire™ GPS receiver (A) for active nozzle switching.
- Pressure Recirculation System (PRS).
- Section Control
- ISOBUS

There are two different controller architectures for INC and INC Pro. Systems equipped with an MNC controller and systems equipped with an NDC controller. The controller architecture of a machine can be checked under the system information tab (A). Machines with INC Pro are always equipped with an NDC controller.



WZ632747—UN—22AUG24

A—System Information Tab



INC Overview (with MNC)

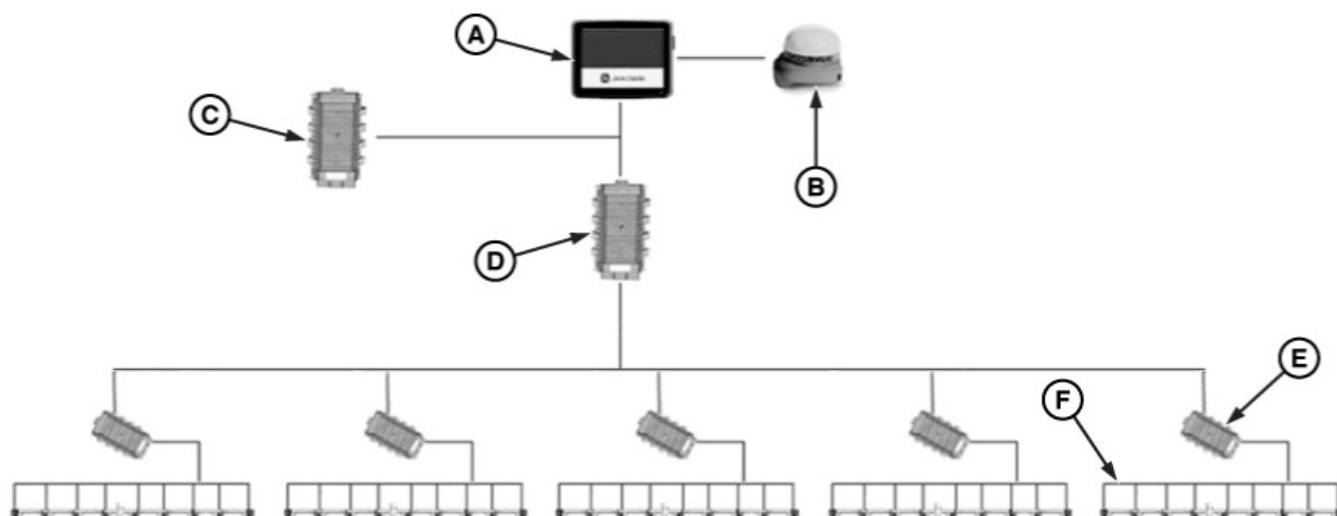
WZ290104002—UN—25AUG20

A—Gen4 Display (newer generations also compatible)
B—StarFire™ GPS receiver
C—SPC

D—MNC
E—NCC
F—Maximum 7 Nozzle Per NCC

For machines equipped with an MNC controller, the Starfire (B), Display (A), SPC (C; Spray Controller) and MNC (D; Master Nozzle Controller) are connected to the machine ISOBUS. The NCC (E; Nozzle Command Controllers) are connected to the MNC with a separate

ISOBUS. The number of used NCCs and individual nozzles depends on the used boom configuration. The individual nozzle bodies are connected to the NCC with electrical wires. Maximum of seven individual nozzle bodies can be connected to one NCC.



INC and INC Pro Overview (with NDC)

WZ632757—UN—02SEP24

A—Gen4 Display (newer generations also compatible)
B—StarFire™ GPS receiver
C—SPC
D—NDC
E—NCP

F—Maximum 9 Nozzles Per NCP
G—Left Outer
H—Left Inner
I—Right Inner
J—Right Outer

For machines equipped with an NDC controller, the Starfire (B), Display (A), SPC (C; Spray Controller) and NDC (D; Nozzle Domain Controller) are connected to the machine ISOBUS. The NCP (E; Nozzle Command Pulsing) controllers are connected to the NDC, with a separate ISOBUS using four subnets. A separate inner and outer subnet for both the left and right hand side of the boom. The number of used NCP controllers and individual nozzles depends on the used boom configuration. The individual nozzle bodies are connected to the NCP controller with electrical wires. Maximum of nine individual nozzle bodies can be connected to one NCP controller.

Use with Aftermarket Equipment

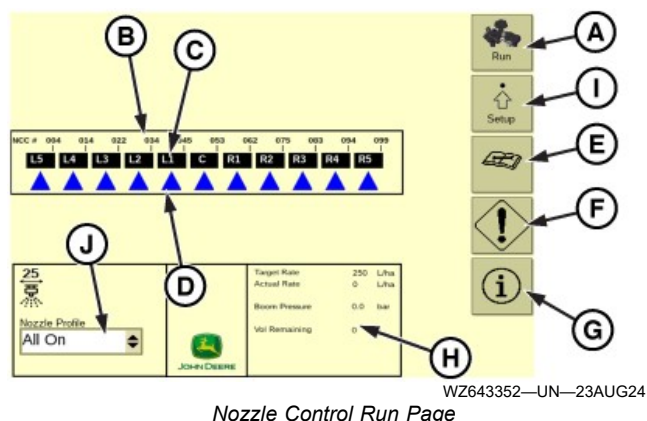
Machine strainer sizes must not be modified when INC or INC Pro is installed on the machine. Pressure strainers installed on the machine must be at least 80 mesh or higher to reduce spray tip and solenoid plugging.

CF4BIPJ,1770208083106-19-04FEB26

CF4BIPJ,1770208087212-19-04FEB26

INC and INC Pro Run Pages

INC Run Page



Nozzle Control Run Page

- A—Run Softkey
- B—Nozzle Count Number
- C—Virtual Section
- D—Cone
- E—Diagnostic Softkey
- F—Fault Summary Softkey
- G—System Information Softkey
- H—Solution System Information
- I—Setup Softkey
- J—Nozzle Profile

The Individual Nozzle Control Run Page displays information about Individual Nozzle Control. Solution system information is also displayed for an operator reference.

Run Softkey (A); select to access the run page.

Nozzle Count Number (B); number of the right-hand most nozzle on that section. Nozzles are numbered left to right across the booms. The number of nozzles depends on the boom configuration.

Virtual Section (C); displays the status of virtual spray section:

- Black block with a white text; virtual section enabled.
- Red block with a white text; virtual section disabled manually.
- White block with a black text; virtual section disabled from the section control.
- Gray block with a black text; virtual section disabled with IBS.
- Orange block with a black text; one or more nozzles disabled by manual nozzle setup.

Cone (D); blue cone indicates that the nozzles are spraying.

NOTE: Spray sections are customized to the operators preference. See Spray Section Setup in the System Setup section.

Diagnostic Softkey (E); select to access diagnostic pages.

Fault Summary Softkey (F); select to view system faults that have occurred.

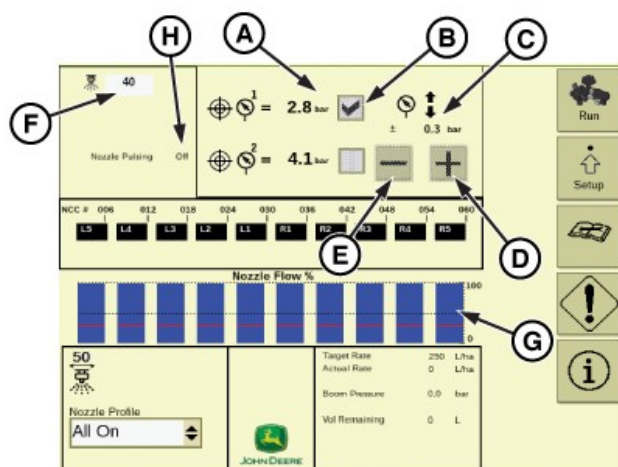
System Information Softkey (G); select to view the system hardware and software information.

Solution System Information (H); displays the readings from the solution system.

Setup Softkey (I); allows to modify an existing profile or to set up a new profile (see **Set up a User-Defined Nozzle Layout Profile**).

Nozzle Profile (J); displays the current nozzle layout profile. Two pre-defined profiles are available (that is, All On and Manual) and up to three user-defined profiles can be set up and stored (see **Set up a User-Defined Nozzle Layout Profile**).

Additional INC Pro functionalities on Run Page (Option)



- A—Target Pressure Area
- B—Target Pressure Checkbox
- C—Target Pressure Adjustment Increment
- D—Pressure Increase Button
- E—Pressure Decrease Button
- F—Spray Mode Area
- G—Nozzle Flow Display
- H—Nozzle Pulsing Mode

The Individual Nozzle Control Pro Run Page displays information about Individual Nozzle Control Pro. Solution system information is also displayed for an operator reference.

Target Pressure Area (A); displays target pressure settings and allows for target pressure adjustment during operation when enabled.

Target Pressure Checkbox (B); indicates the selected target pressure. Allows operator to change between target pressure 1 and 2 during application.

Target Pressure Adjustment Increment (C); displays the amount that target pressure changes when adjusted using the pressure increase or decrease buttons.

Pressure Increase Button (D); Increases selected

target pressure by the displayed increment per button press.

Pressure Decrease Button (E); Decreases selected target pressure by the displayed increment per button press.

Spray Mode Area (F); displays current Active Nozzle Selections.

Nozzle Flow Display (G); displays the current percent of maximum flow being used by each section in graph form.

Nozzle Pulsing Mode (H); displays mode selected. Mode must be edited from setup pages. If fixed duty cycle is selected then the chosen duty cycle is displayed here also.

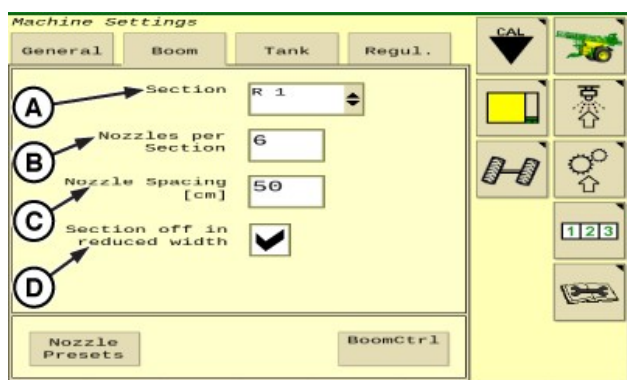
CF4BIPJ,1770208085204-19-04FEB26

Spray Section Setup

Spray sections can be customized to include various numbers of nozzles. Sections can contain only one nozzle or several. All machines can be set up with 12 sections regardless of width or factory configuration. Perform the following to set up the number of sections and number of nozzles per section.

Sections cannot be set up for band spraying. Do not turn nozzle bodies to an OFF position to obtain a wider nozzle spacing. Nozzle Command Control does not apply an accurate rate when nozzles have been turned off manually.

Machine with 50 cm Spacing Nozzle Boom Version



WZ643357—UN—16AUG24

- A—Section
B—Nozzles per Section
C—Nozzle Spacing [cm]
D—Section Off in Reduced Width

Section (A): select the field to get access to the drop down menu for the different sections on the boom (e.g. L1-L2-L3-L4-R4-R3-R2-R1-C for booms with 9 sections), highlight your selection and enter. All sections need to be programmed.

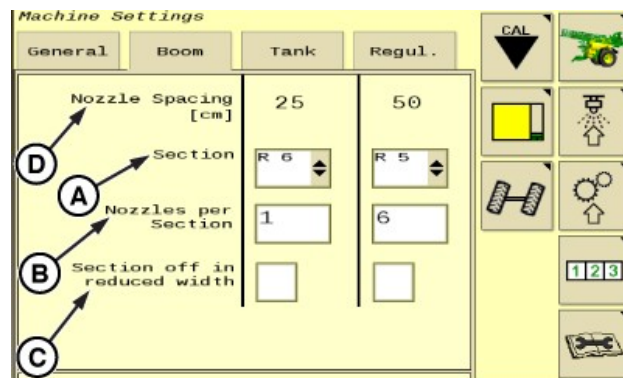
Nozzles per Section (B): enter the number of nozzles per section here. This must be repeated for all boom sections.

IMPORTANT: The total number of nozzles in all sections must be equal to the installed number of nozzles.

Nozzle Spacing (C): enter the distance between the nozzles. This is default 50.0 cm for nozzles.

Section off in reduced width (D): If checked, the section is always enabled. If unchecked, the section is disabled when working with reduced width.

Machine with 25 cm Spacing Nozzle Boom Version



WZ632755—UN—12AUG24

- A—Section
B—Nozzles per Section
C—Section Off in Reduced Width
D—Nozzle Spacing [cm]

Section (A): select the field to get access to the drop down menu for the different sections on the boom (e.g. L1-L2-L3-L4-R4-R3-R2-R1-C for booms with 9 sections) for which boom nozzle spacing (D), the Section (A), the Nozzle per Section (B), and the Section Off in Reduced Width (C) do apply. Highlight your selection and enter. All sections need to be programmed.

Nozzles per Section (B): enter the number of nozzles per section here. This must be repeated for all boom sections.

IMPORTANT: The total number of nozzles in all sections must be equal to the installed number of nozzles.

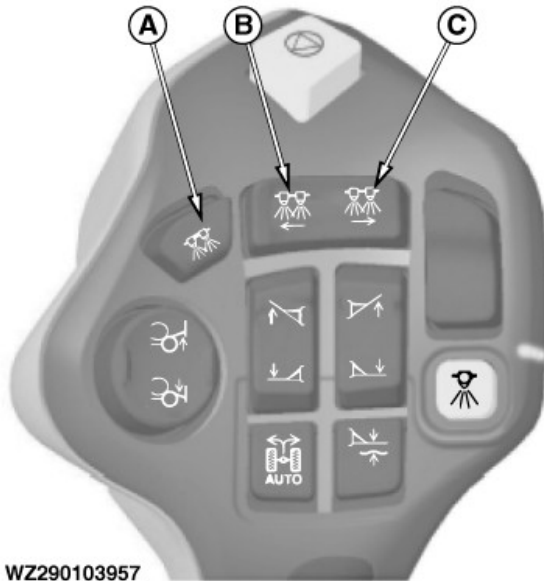
Section off in reduced width (C): If checked, the section is always enabled. If unchecked, the section is disabled when working with reduced width.

CF4BIPJ,1770208091464-19-04FEB26

Operate Indexed Boom Sections (IBS)

This machine is equipped with Indexed Boom Section (IBS) switching. This gives the operator another way to shutoff virtual sections sequence without removing your hand from the multi-function lever. An audible beep sound when the buttons are pressed. This function is useful when working with point rows and waterways.

There are three buttons and operate as follows:

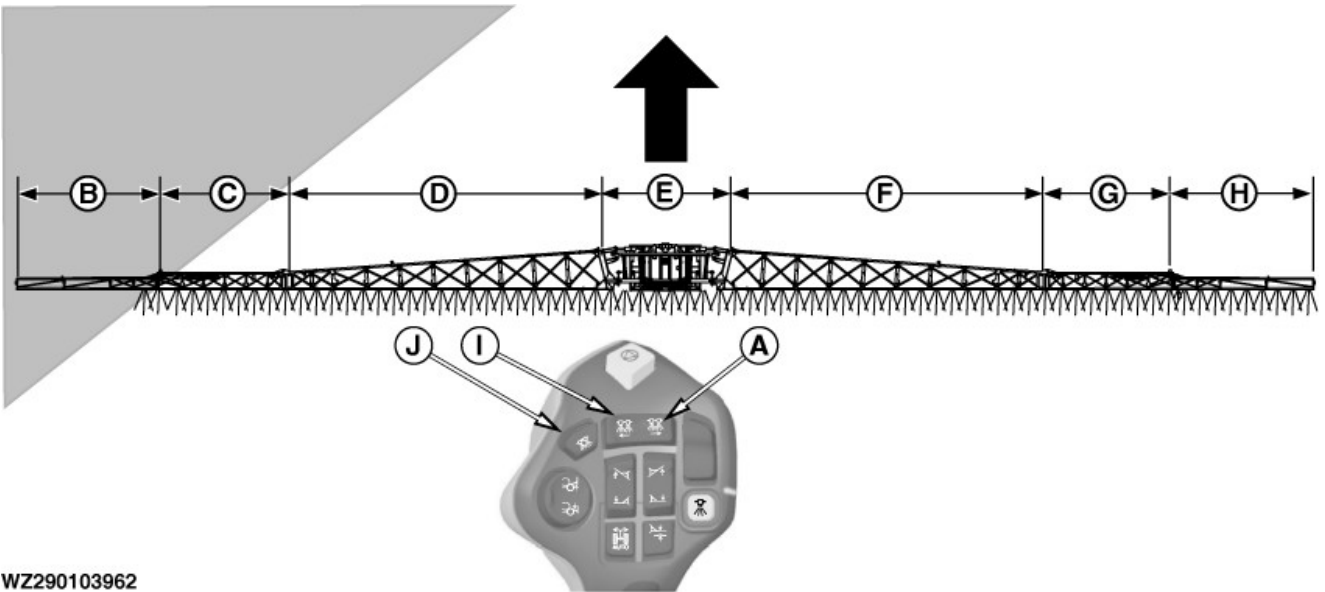


WZ290103957

A—IBS Reset Button
B—IBS Left-hand Button
C—IBS Right-hand Button

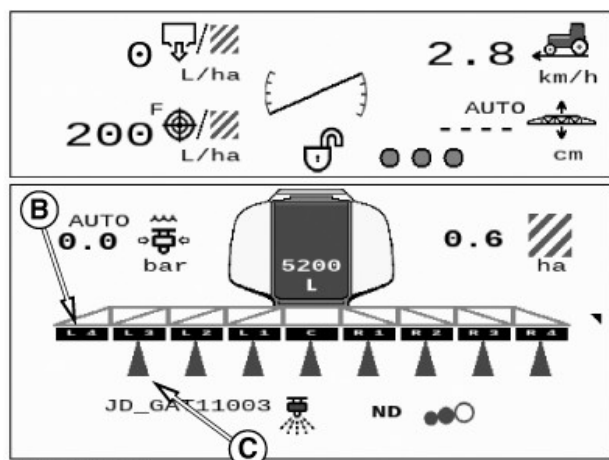
- Use **IBS Left-hand Button (B)** to sequentially shutoff virtual sections starting at right-hand end of boom moving to left.
- Use **IBS Reset Button (A)** to resume all shutoff virtual sections that are enabled.
- Use **IBS Right-hand Button (C)** to sequentially shutoff virtual sections starting at left-hand end of boom moving to right.

WZ290103957—UN—25JUN20



WZ290103962

WZ290103962—UN—16JUN20



WZ290401909

WZ290401909—UN—16JUN20

EXAMPLE: If you are coming upon an angled boundary and you would like to shutoff virtual sections in sequence from left to right:

1. Push and release IBS right button (A) once to shutoff left-hand virtual sections (B) (L4 on display).

NOTE: Continue to push and release button (A) to shutoff remaining virtual sections across the entire boom.

2. Push and release button (A) again to shut off virtual sections (C) (L3 on display).

NOTE: You can turn virtual sections all back ON at once using IBS All Virtual Sections On button (J).

3. Push and release button (I) to turn ON virtual sections (C) (L3 on display). virtual sections can be shutoff from the right-to-left using the opposite buttons, first the button (I) to shutoff and the button (I) to turn on again.

4. Push and release button (I) to turn ON left-hand virtual sections (B).

NOTE: The edge nozzles or off-center nozzles switch together with the outer virtual sections.

NOTE: Refer to Section on-off Softkey Lay Out in Sprayer Control System Section.

- A—Button IBS Right-hand
- B—Left-Hand Boom Nozzles ("L4" on Display)
- C—Left-Hand Boom Nozzles ("L3" on Display)
- D—Left-Hand Boom Nozzles ("L1-L2" on Display)
- E—Center Boom Nozzles ("C" on Display)
- F—Right-Hand Boom Nozzles ("R1-R2" on Display)
- G—Right-Hand Boom Nozzles ("R3" on Display)
- H—Right-Hand Boom Nozzles ("R4" on Display)
- I—Button IBS Left-hand
- J—Button IBS All Virtual Sections On

results. The buttons on the remote control function as follows:



N125203—UN—24AUG16

Remote Control

- A—Left-Hand Section ON Button
- B—Right-Hand Section ON Button
- C—Left-Hand Nozzle ON Button
- D—Right-Hand Nozzle ON Button
- E—Start Button
- F—Stop Button

- Turn spray sections ON beginning with the right-hand most section and progressing across the boom to the left-hand side using left-hand section ON button (A).
- Turn spray sections ON beginning with the left-hand most section and progressing across the boom to the right-hand side using right-hand section ON button (B).
- Turn on the next available nozzle progressing from the right-hand side to the left-hand side of the boom using the left-hand nozzle ON button (C).
- Turn on the next available nozzle progressing from the left-hand side to the right-hand side of the boom using the right-hand nozzle ON button (D).

Operate System with the Remote Control

The remote control allows the operator to activate individual nozzles or sections of nozzles from outside the cab for troubleshooting purposes. The remote control requires a direct line of sight to the receiver which is mounted to the rear of the boom center frame. Operate remote control from behind the boom for best

- Enable the remote system by pressing the start button (E) twice. Spray from the entire boom width by holding the start button for two seconds.

NOTE: Machine horn honks twice and all nozzle lights flash twice when the system is enabled.

- End nozzle tests by holding the stop button (F) for two seconds. Press the stop button once to pause spraying.

NOTE: Machine horn honks once and all nozzle lights flash once when the system is disabled.

The following conditions must be met before controlling the system with the remote control:

- Solution pump runs with a minimal speed of 100 rpm.
- No remote loading operations are active.
- Machine speed is zero.
- Inner booms are unfolded. Unfold the outer booms is not necessary.

NOTE: If any condition becomes not met during remote operation the system is disabled.

Example 1: Activate a Section then a Single Nozzle

NOTE: Only enabled nozzles are controlled when using the remote control.

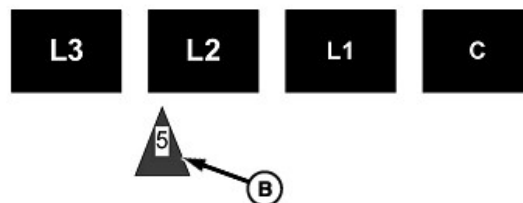
All examples start from the left-hand side of the machine. The procedure is similar to start on the right-hand side of the machine.

Machine horn honks twice and all nozzle lights flash twice when the system is enabled.

1. Press the start button twice.



N125209—UN—07SEP16



A—Left-Hand Section
B—Left-Hand Nozzle

N125210—UN—07SEP16

2. Press right-hand section ON button, turning ON the left-hand most section (A) on the boom.
3. Press right-hand nozzle ON button, turning ON the left-hand most nozzle (B) on the next available section.
4. Press the stop button to pause spraying.

Example 2: Activate Single Nozzles then a Section

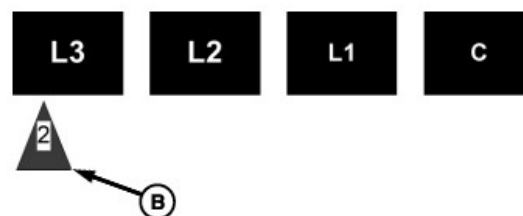
NOTE: Only enabled nozzles are controlled when using the remote control.

Machine horn honks twice when the system is enabled.

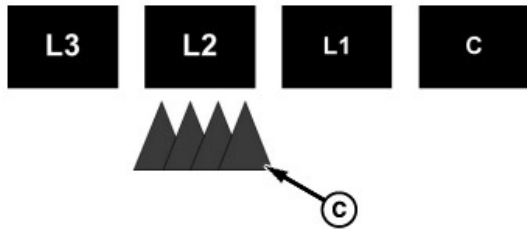
1. Press the start button twice.



N125211—UN—07SEP16



N125212—UN—07SEP16



N125213—UN—07SEP16

A—Left-Hand Nozzle
B—Next Nozzle
C—Spray Section

2. Press right-hand nozzle ON button, turning ON the left-hand most nozzle (A) on the boom.
3. Press right-hand nozzle ON button again, turning ON the next available nozzle (B) to the right on the boom.
4. Press right-hand section ON button, turning ON the next available section (C).
5. Press the stop button to pause spraying.

Example 3: Activate All Nozzles

NOTE: Only enabled nozzles are controlled when using the remote control.

Machine horn honks twice and all nozzle lights flash twice when the system is enabled.

1. Press the start button twice.



N125214—UN—07SEP16

All Sections ON

2. Press and hold the start button for more than one second to spray from the entire boom.
3. Release start button after spraying begins.
4. Press the stop button to pause spraying.
5. Push and hold the stop button for two second, the test with the remote control stops.

CF4BIPJ,1770208093649-19-04FEB26

Remote Control Pairing Procedure

Remote control operation requires the remote control and receiver to be paired. The receiver stores up to six unique remote controls at a time. Remote controls can be added or removed from this registered list as needed when lost or replaced.

Once the remote control system is activated, the first two paired remotes to be used once the remote control system is activated are allowed to control the system. If a different remote is to be used then the key power must be cycled OFF then ON before activating the system with a different remote. Only two remotes can be active at a time.

NOTE: Only one remote control may be paired at a time. A key cycle is required for each additional pairing.

Pairing Procedure:

1. Turn the key switch to run position.
2. Go to the Diagnostic Center and access the MNA or NDC diagnostic address 142.

NOTE: "999999999" is displayed if a serial number has not been entered during the current power cycle.



WZ652561—UN—12NOV24

A—Serial Number

3. Enter the underlined portion of the serial number (A) on the back of the remote control.
4. Advance to the diagnostic address 143.
5. Change the address value to one.

NOTE: The system allows the operator up to two minutes to complete the pairing process. Move the remote control closer to the receiver depending on the battery level and environment.

6. Advance to the diagnostic address 144. Observe the pairing progress. Possible pairing statuses include the following:

- Pairing disabled
- Pairing enabled
- Pairing active

- Pairing successful
 - Pairing failed
 - Pairing code entered does not match remote control
 - Max number of remote controls exceeded
 - Duplicate pairing code
7. If the pairing fails the key must be turned off before another attempt can be made. It is not necessary to turn OFF the key after a successful pairing function.

Erasing Procedure:

1. Turn the key switch to run position.
2. Go to the Diagnostic Center and access the MNA or NDC diagnostic address 142.

NOTE: "999999999" is displayed if a serial number has not been entered during the current power cycle.

Enter zero to erase all remote control pairs.



WZ652561—UN—12NOV24

A—Serial Number

3. Enter the underlined portion of the serial number (A) on the back of the remote control.
4. Advance to the diagnostic address 143.
5. Change the address value to two.

NOTE: The system allows the operator up to two minutes to complete the pairing process. Move the remote control closer to the receiver depending on the battery level and environment.

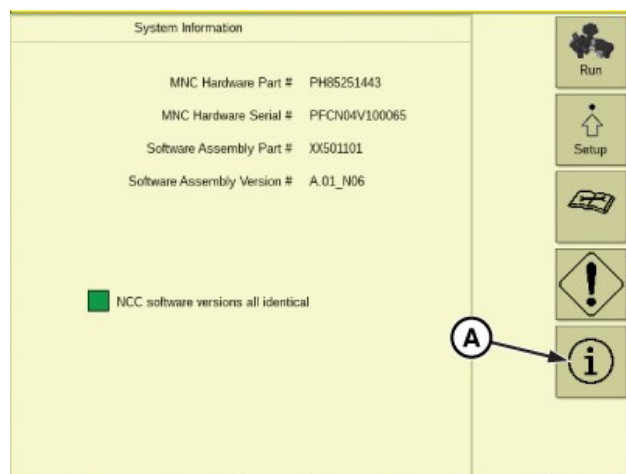
6. Advance to the diagnostic address 144. Observe the pairing progress. Possible pairing statuses include the following:

- Erase failed
- Erase successful

7. If erase fails the key must be turned off before another attempt can be made. It is not necessary to turn OFF the key after a successful erase function if no new remote controls are to be paired. The operator must cycle the key when pairing a new remote control after erasing.

CF4BIPJ,1770208080942-19-04FEB26

Nozzle Controller Boom Configurations



WZ632747—UN—22AUG24

A—System Information Tab

There are two different controller architectures for INC and INC Pro. Systems equipped with an MNC controller and systems equipped with an NDC controller. The controller architecture of a machine can be checked under the system information tab (A). Machines with INC Pro are always equipped with an NDC controller.

NCC Boom Configurations (for systems with an MNC)

MK Boom 24/12 m and Ti-M 24/13 m								
Nozzle	1 - 5	6 - 12	13 - 17	18 - 24	25 - 31	32 - 36	37- 43	44 - 48
NCC	M504L	M503L	M502L	M501L	M501R	M502R	M503R	M504R

Individual Nozzle Control (INC)

MK Boom 27/15 m								
Nozzle	1 - 6	7 - 13	14 - 20	21 - 27	28 - 34	35 - 41	42- 48	49 - 54
NCC	M504L	M503L	M502L	M501L	M501R	M502R	M503R	M504R

MK Boom 28/15 m and Ti-M Boom 28/16 m									
Nozzle	1 - 5	6 - 12	13 - 19	20 - 26	27 - 30	31 - 37	38 - 44	45 - 51	52 - 56
NCC	M505L	M504L	M503L	M502L	M501L	M502R	M503R	M504R	M505R

MK Boom 30/24 m									
Nozzle	1 - 6	7 - 13	14 - 20	21 - 27	28 - 33	34 - 40	41- 47	48 - 54	55 - 60
NCC	M505L	M504L	M503L	M502L	M501L	M502R	M503R	M504R	M505R

MK Boom 33/24 m										
Nozzle	1 - 6	7 - 12	13 - 19	20 - 26	27 - 33	34 - 40	41 - 47	48- 54	55 - 60	61 - 66
NCC	M505L	M504L	M503L	M502L	M501L	M501R	M502R	M503R	M504R	M505R

MK Boom 36/24m											
Nozzle	1 - 6	7 - 13	14 - 20	21 - 27	28 - 34	35 - 38	39 - 45	46 - 52	53 - 59	60 - 66	67 - 72
NCC	M506L	M505L	M504L	M503L	M502L	M501L	M502R	M503R	M504R	M505R	M506R

NCP Boom Configurations (for systems with an NDC)

MK Boom 24/12 m and Ti-M Boom 24/13 m						
Nozzle	1 - 6	7 - 15	16 - 24	25 - 33	34 - 42	43 - 48
NCP	M323L	M322L	M321L	M321R	M322R	M323R
Subnet	Left Outer		Left Inner	Right Inner	Right Outer	

MK Boom 27/15 m							
Nozzle	1 - 5	6 - 14	15 - 23	24 - 31	32 - 40	41 - 49	50 - 54
NCP	M324L	M323L	M322L	M321L	M322R	M323R	M324R
Subnet	Left Outer		Left Inner		Right Inner	Right Outer	

MK Boom 30/24 m							
Nozzle	1 - 8	9 - 17	18 - 26	27 - 34	35 - 43	44 - 52	53 - 60
NCP	M324L	M323L	M322L	M321L	M322R	M323R	M324R
Subnet	Left Outer		Left Inner		Right Inner	Right Outer	

MK Boom 33/24 m								
Nozzle	1 - 6	7 - 15	16 - 24	25 - 33	34 - 42	43 - 51	52 - 60	61 - 66
NCP	M324L	M323L	M322L	M321L	M321R	M322R	M323R	M324R
Subnet	Left Outer		Left Inner		Right Inner		Right Outer	

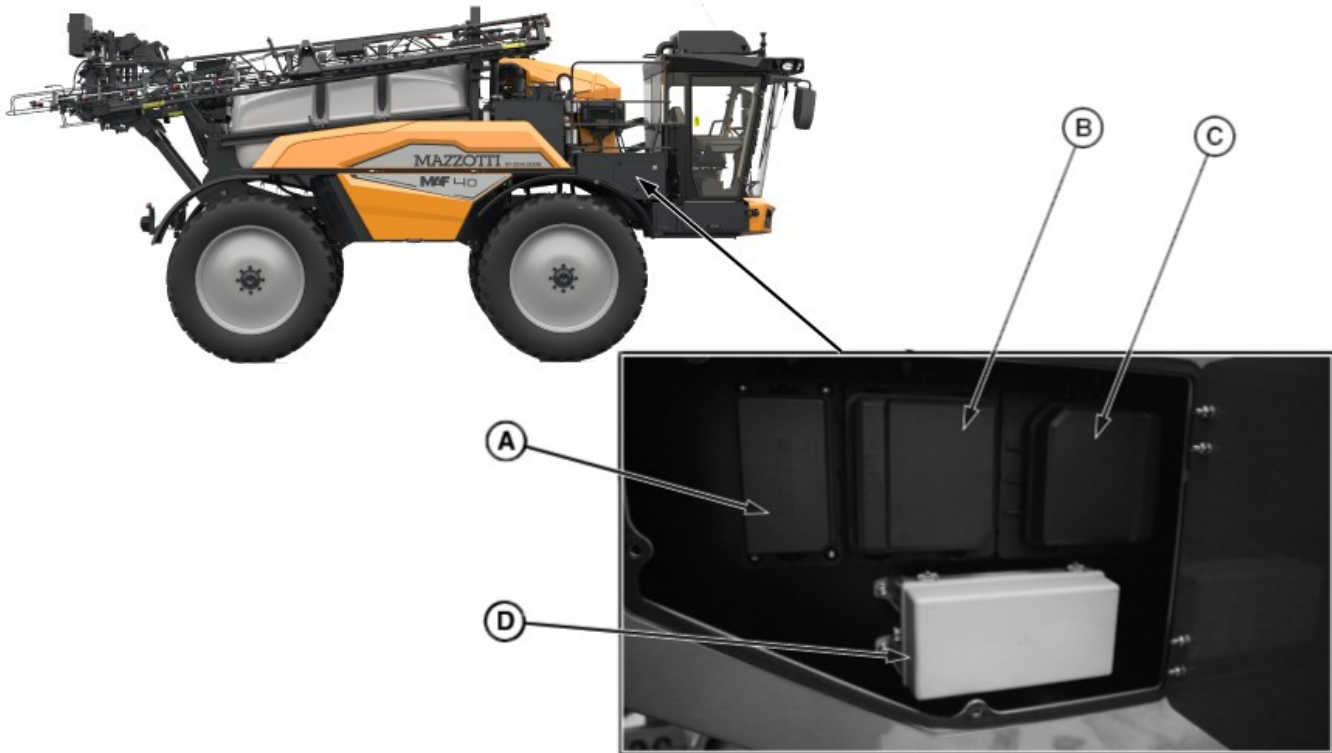
Individual Nozzle Control (INC)

MK Boom 36/24 m									
Nozzle	1 - 6	7 - 14	15 - 23	24 - 32	33 - 40	41 - 49	50 - 58	59 - 66	67 - 72
NCP	M325L	M324L	M323L	M322L	M321L	M322R	M323R	M324R	M325R
Subnet	Left Outer		Left Inner			Right Inner		Right Outer	

CF4BIPJ,1770208078522-19-04FEB26

Electrical System Service

Replace Fuses and Relays—Old Configuration

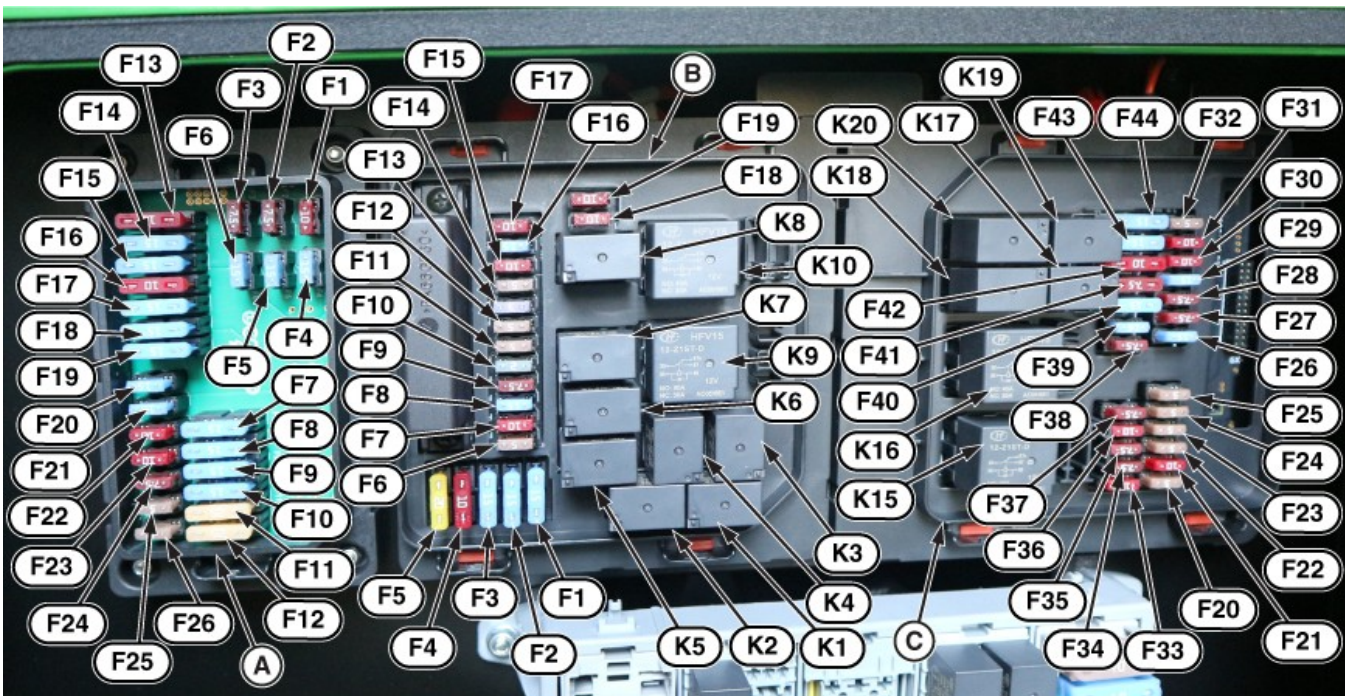


TG640736—UN—26JUL24

A—QPL-XS Fuse Box
B—QPL-S Fuse Box

C—QPL-M Fuse Box
D—Gray Box

QPL-XS, QPL-S and QPL-M Fuse Box



APY85150—UN—16JUN23

A—QPL-XS Fuse Box
B—QPL-S Fuse Box

C—QPL-M Fuse Box

QPL-XS Fuse Layout		
Fuse	Rating	Function
F1	10 A	Not Used
F2	7.5 A	Not Used
F3	7.5 A	Not Used
F4	15 A	Not Used
F5	15 A	Not Used
F6	15 A	Not Used
F7	15 A	Not Used
F8	15 A	Not Used
F9	15 A	Not Used
F10	15 A	Not Used
F11	25 A	(+15) Poclain D2
F12	25 A	(+15) Poclain D1
F13	10 A	(+15) Valve Danfoss CLS
F14	15 A	Not Used
F15	15 A	(+15) Key ARAG and Accessories ISOBUS (Optional)
F16	10 A	(+15) Negative Output
F17	15 A	Not Used
F18	15 A	Not Used
F19	15 A	Not Used
F20	15 A	(+15) Poclain D3
F21	15 A	(+15) Poclain
F22	10 A	Not Used
F23	10 A	Not Used
F24	7.5 A	(+15) Spray Tank Rinsing
F25	5 A	Engine Sensor Power
F26	5 A	Chassis Sensor Power

QPL-S Fuse Layout		
Fuse	Rating	Function
F1	15 A	Boom Working Lights
F2	15 A	Internal High Beam Lights
F3	15 A	(+30) Optional Connector X177
F4	10 A	Low Beam Light
F5	20 A	(+30) CAT IV Filter Blower
F6	5 A	Internal Power for QPL
F7	10 A	Cab High Beam Lights
F8	15 A	(+30) VP Poclain
F9	7.5 A	(+30) Optional Connector X276 Under the Cabin
F10	2 A	Power Internal QPL
F11	5 A	(+15) Cab Sensor
F12	5 A	(+15) Cab Diagnostics
F13	3 A	Position Light Front Right and Left Rear
F14	5 A	Position Light Front Left and Right Rear
F15	10 A	(+15) Climate Group
F16	15 A	Front Wipers and Nozzle Spray
F17	10 A	Left Rear View Mirror

Electrical System Service

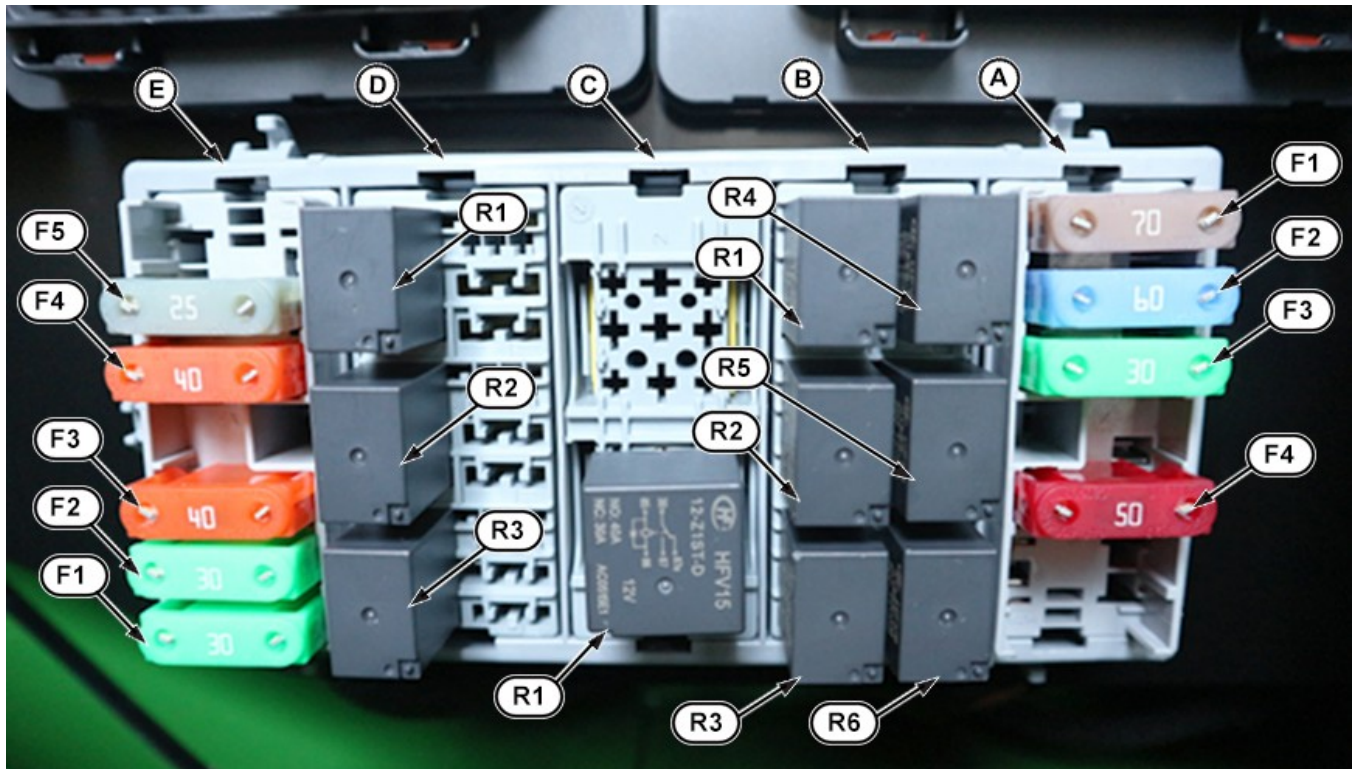
QPL-S Fuse Layout		
F18	10 A	Position Light
F19	10 A	Right Rear View Mirror

QPL-S Relay Layout	
Relay	Function
K1	Low Beam Lights
K2	High Beam Lights
K3	Working Lights on Boom
K4	Position Light Front and Rear
K5	Boom Working Lights
K6	High Beam Cab Roof Lights
K7	Turn Left Signal
K8	Turn Right Signal
K9	First Windshield Wiper Speed
K10	Parking Brake Sign
K11	Slow Motion Poclain
K12	Eco Mode Poclain
K13	Windshield Wipers
K14	Transport mode

QPL-M Fuse Layout		
Fuse	Rating	Function
F20	5 A	Not Used
F21	10 A	Emergency Button
F22	5 A	(+15) VE Central Line Cobo
F23	5 A	Internal Power for QPL
F24	5 A	(+15) VE Poclain
F25	5 A	Solenoid Boom Lock LH 4mt UK
F26	15 A	(+15) Connector X178 (Optional)
F27	7.5 A	(+15) Intermittent Turn Signal Lights
F28	7.5 A	(+15) Connector X276 (Optional)
F29	15 A	(+15) Connector X177 (Optional)
F30	10 A	Working Lights (Engine)
F31	10 A	(+15) Norac for ARAG Version
F32	5 A	Solenoid Boom Lock RH 4mt UK
F33	10 A	(+15) Engine Connector X320 (Optional)
F34	7.5 A	(+15) Agitation and Recirculation (ARAG Version)
F35	7.5 A	(+30) TERA 10 and Intouch
F36	10 A	(+30) Engine Connector X320 (Optional)
F37	7.5 A	Brake Light
F38	7.5 A	Reverse Light and Buzzer
F39	15 A	Beacon Lights
F40	15 A	Low Beam Light
F41	7.5 A	(+30) Flashing Turn Signal Lights
F42	10 A	Side Compartment Lights (RH-LH)
F43	15 A	Cab Roof Light
F44	15 A	(+30) Controller Box Connector X178 (Optional)

QPL-M Relay Layout	
Relay	Function
K15	Air Conditioning Compressor
K16	CAT 4 Filter Cab Fan Blower
K17	Starting Signal from HE154
K18	High Beam Light External
K19	Cab Worklights (External and Central)
K20	LH and RH side compartment lights
K21	Brake Light
K22	LH Boom Lock 4mt UK
K23	RH Boom lock 4mt UK
K24	Reverse light + Reverse Buzzer
K25	Cabin and Boom Beacon Lights
K26	Enable Manual Signal Acceleration
K27	Solenoid Front Hydraulic Motors 1C/2C
K28	Solenoid Front Hydraulic Motors 2C/3C
K29	General Activation ARAG system
K30	Solenoid Rear Hydraulic Motors 2C/3C
K31	Solenoid Rear Hydraulic Motors 1C/2C

Gray Box



TG591721—UN—15SEP23

A—X184
B—X185
C—X186

D—X187
E—X188

Electrical System Service

X184 Fuse Layout		
Fuse	Rating	Function
F1	70 A	(+30) QPL-M
F2	60 A	(+30) MSpray
F3	30 A	(+30) Climate Control
F4	50 A	(+30) QPL-S
F5		Not Used
F6		Not Used

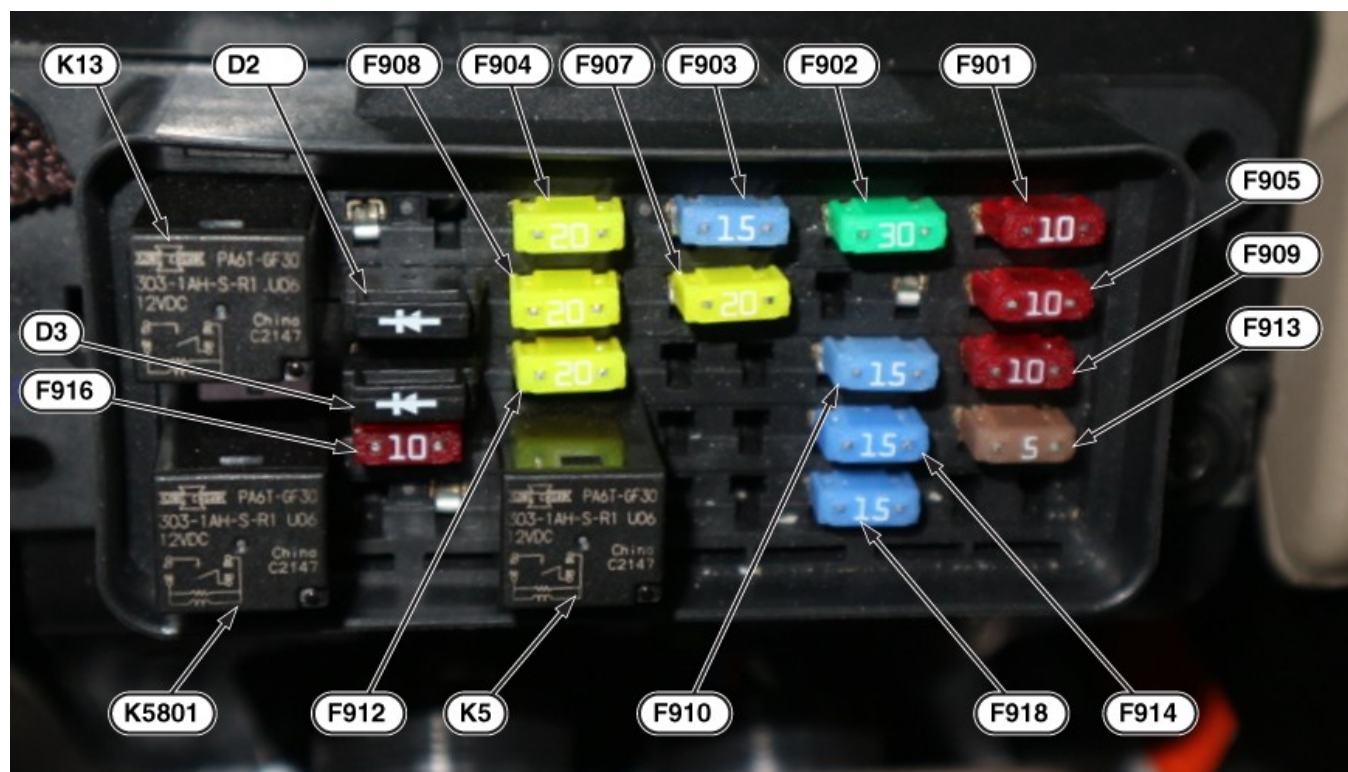
X185 Relay Layout	
Relay	Function
R1	Input power for Suspension adjustment/Tread Adjustment Push Button Panel
R2	Solenoid Cutoff Power Steering Valve (S2C)
R3	Solenoid Cut off for Controller (S2C)
R4	Safety Relay for AutoTrac
R5	Safety Function for Tera10 (ON/OFF)
R6	Not Used

X186 Relay Layout	
Relay	Function
R1	HVAC Fan Power
R2	Not Used

X187 Relay Layout	
Relay	Function
R1	Transport mode Steering Controller
R2	Negative Output for HE154
R3	Spray Tank Rinse Solenoid
R4	Not Used
R5	Not Used
R6	Not Used

X188 Fuse Layout		
Fuse	Rating	Function
F1	30 A	(+15) VP LE70 Controller
F2	30 A	(+15) VP LE70 Boom Functions (Optional)
F3	40 A	(+15) VP HE154 Controller (1)
F4	40 A	(+15) VP HE154 Controller (2)
F5	25 A	(+15) MSpray
F6		Not Used

Cab Fuse Box



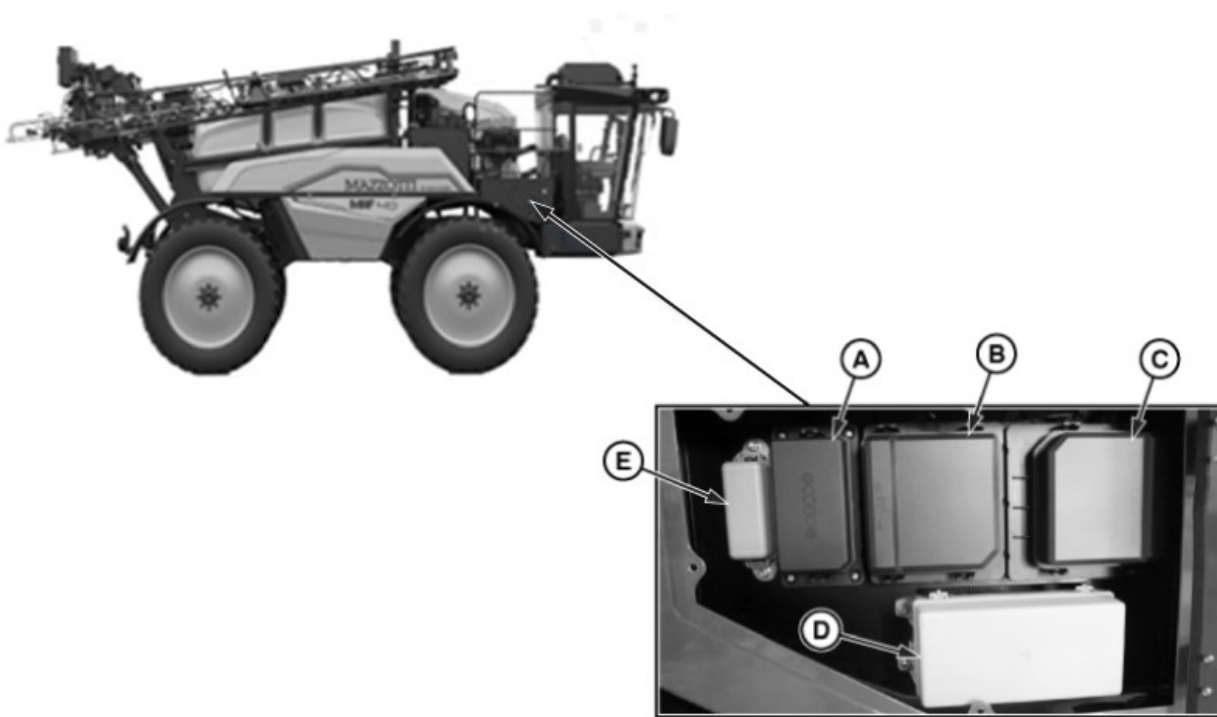
TG588185—UN—26JUL23

Cab Fuse Layout		
Fuse	Rating	Function
F901	10 A	Accessory Power
F902	30 A	Front Beacon Power
F903	15 A	Dome Light
F904	20 A	Not Used
F905	10 A	Primary Display Unit
F907	20 A	Seat Power 1
F908	20 A	Not Used
F909	10 A	Not Used
F910	15 A	Steering Column Module Power
F912	20 A	Accessory Power
F913	5 A	Wake-up Power
F914	15 A	Front Wiper Power
F918	15 A	Not Used

Cab Relay Layout	
Relay	Function
D2	Not Used
D3	System Wake-up Power Diode
K5	AUX Power Relay
K13	Front Beacon Relay
K5801	Not Used

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Replace Fuses and Relays—New Configuration

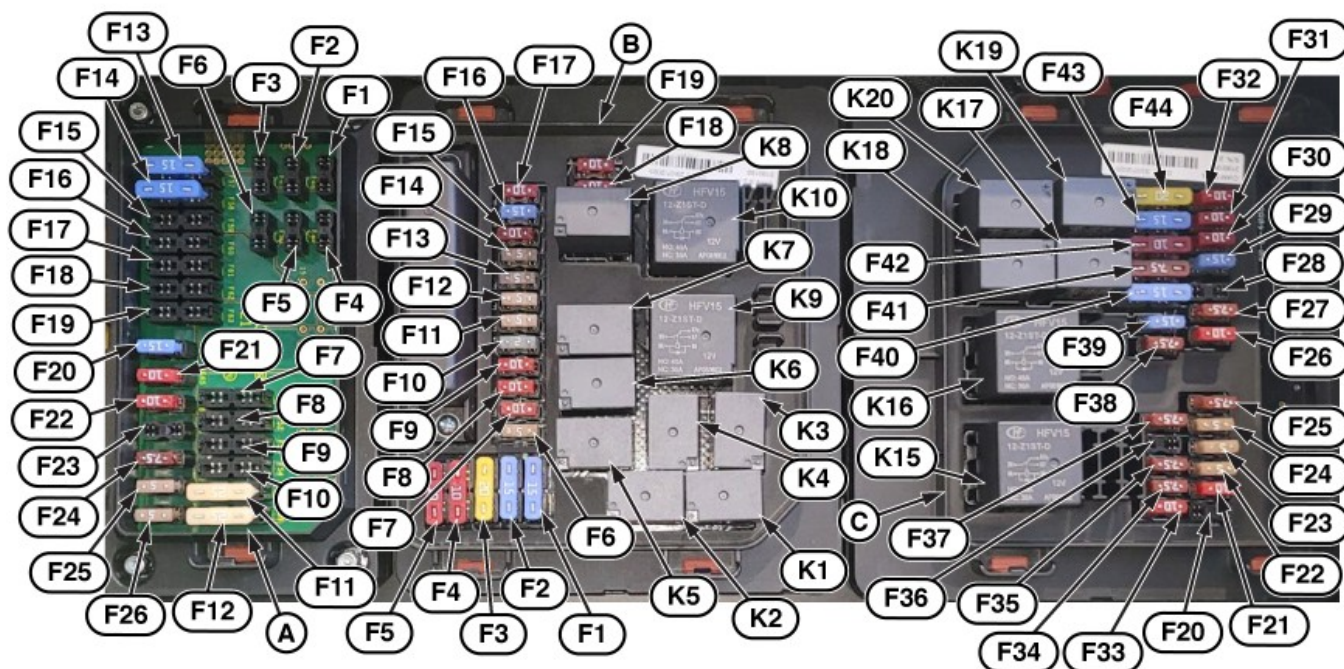


TG654744—UN—09JAN25

A—QPL-XS Fuse Box
B—QPL-S Fuse Box
C—QPL-M Fuse Box

D—Gray Box
E—MSpray Gray Box

QPL-XS, QPL-S and QPL-M Fuse Box



TG695488—UN—01JAN26

A—QPL-XS Fuse Box
B—QPL-S Fuse Box

C—QPL-M Fuse Box

QPL-XS Fuse Layout		
Fuse	Rating	Function
F1	10 A	Not Used
F2	7.5 A	Not Used
F3	7.5 A	Not Used
F4	15 A	Not Used
F5	15 A	Not Used
F6	15 A	Not Used
F7	15 A	Not Used
F8	15 A	Not Used
F9	15 A	Not Used
F10	15 A	Not Used
F11	25 A	(+15) Poclain D2
F12	25 A	(+15) Poclain D1
F13	10 A	Poclain D3
F14	15 A	Poclain D4
F15	15 A	Not Used
F16	10 A	Not Used
F17	15 A	Not Used
F18	15 A	Not Used
F19	15 A	Not Used
F20	15 A	(+15) ISOBUS
F21	15 A	(+15) Negative Output
F22	10 A	(+15) Steering Valve
F23	10 A	Not Used

Electrical System Service

QPL-XS Fuse Layout		
F24	7.5 A	(+15) Tank Wash (Optional)
F25	5 A	Engine and Under cab Sensor Power
F26	5 A	Chassis Sensor Power

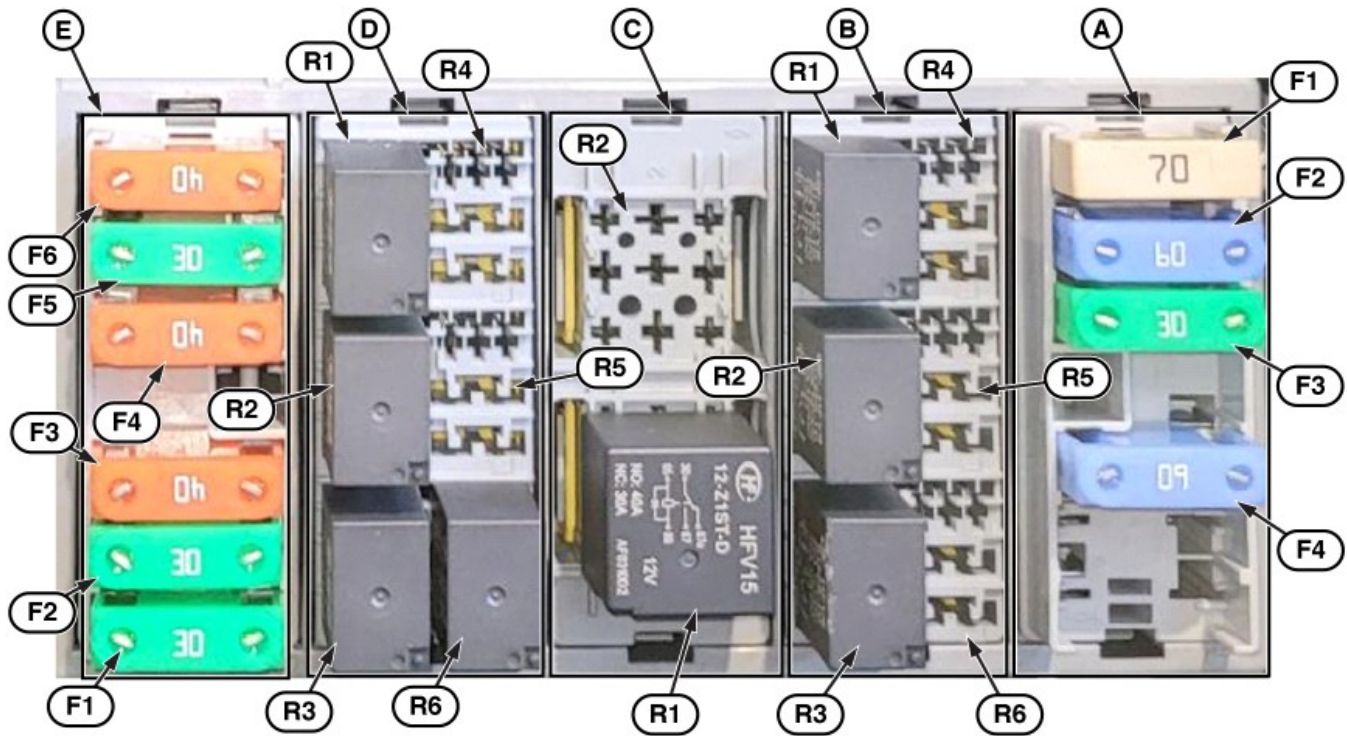
QPL-S Fuse Layout		
Fuse	Rating	Function
F1	15 A	Negative Output Power: Boom Work Light
F2	15 A	Internal High Beam Lights
F3	15 A	Negative Output Power: Boom Valves
F4	10 A	Low Beam Light
F5	20 A	(+30) optional X178
F6	5 A	Internal Power for QPL
F7	10 A	Cab Roof Work Lights
F8	15 A	(+30) VP Poclain
F9	7.5 A	(+30) Optional X177
F10	2 A	Power Internal QPL
F11	5 A	(+15) Armrest Power Supply
F12	5 A	(+15) J1939 Diagnostic, I/O core, Joystick Mazzotti
F13	3 A	Position Light Front Right, Left Rear, and Side Orange Light
F14	5 A	Position Light Front Left, Right Rear, and Side Orange Light
F15	10 A	(+15) Climate Group
F16	15 A	Front Wipers and Nozzle Spray
F17	10 A	Left Rear View Mirror
F18	10 A	Tail Lights
F19	10 A	Right Rear View Mirror

QPL-S Relay Layout	
Relay	Function
K1	Low Beam Lights
K2	High Beam Lights
K3	Working Lights on Engine
K4	Position Light Front and Rear
K5	Negative Output Power: Boom Work Light
K6	High Beam Cab Roof Lights
K7	Turn Left Signal
K8	Turn Right Signal
K9	First Windshield Wiper Speed
K10	Negative Output Power: Boom Valves
K11	Poclain Slow Motion
K12	Eco Mode Poclain
K13	Wiper Water Pump
K14	Hood Guard Drop-Down Lock

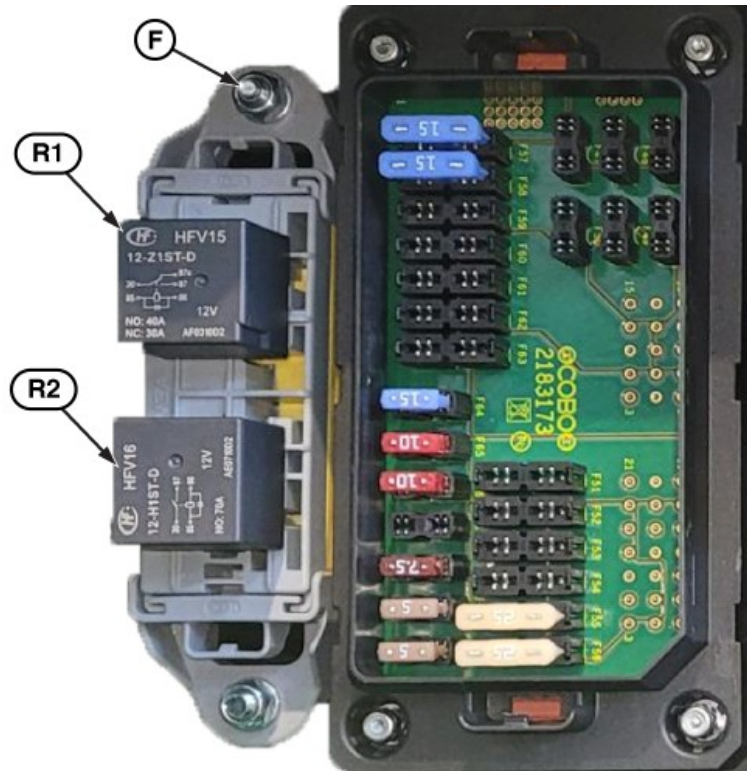
QPL-M Fuse Layout		
Fuse	Rating	Function
F20	5 A	QPL-M Internal Power
F21	10 A	Emergency Button
F22	5 A	(+15) VE Cobo CPU
F23	5 A	Internal Power for QPL
F24	5 A	(+15) VE Poclairn
F25	5 A	Rear Suspensions Lock
F26	15 A	(+15) Connector X178 (Optional)
F27	7.5 A	(+15) Turn Signal Lights
F28	7.5 A	Not Used
F29	15 A	Working Light on Engine
F30	10 A	(+15) Optional Connector X177
F31	10 A	(+15) Norac-Arag Joystick Mazzotti
F32	5 A	AutoTrac Power
F33	10 A	Not Used
F34	7.5 A	(+15) Agitation and Recirculation Joystick Mazzotti
F35	7.5 A	(+30) Tera10, Intouch and Battery Switch
F36	10 A	Not Used
F37	7.5 A	Brake Light
F38	7.5 A	Reverse Light and Buzzer
F39	15 A	Cabin Beacon Light
F40	15 A	High Beam Light
F41	7.5 A	(+30) Warning Lights
F42	10 A	Side Compartment Lights (RH-LH)
F43	15 A	Cab Roof Light
F44	15 A	CAT 4 Roof Fan Motor

QPL-M Relay Layout	
Relay	Function
K15	Air Conditioning Compressor
K16	CAT 4 Filter Cab Fan
K17	Starting Consent from HE154
K18	High Beam Light External
K19	Cab Worklights (External and Central)
K20	LH and RH side compartment lights
K21	Brake Light
K22	Rear Suspensions Lock
K23	AutoTrac Power
K24	Reverse Buzzer
K25	Cabin Beacon Lights
K26	RPM Set
K27	Solenoid Front Hydraulic Motors 1C/2C
K28	Solenoid Front Hydraulic Motors 2C/3C
K29	Master Spray Button Joystick Mazzotti
K30	Solenoid Rear Hydraulic Motors 2C/3C
K31	Solenoid Rear Hydraulic Motors 1C/2C

Gray Box



TG695489—UN—08JAN26



TG695490—UN—01JAN26

A—X184
B—X185
C—X186

D—X187
E—X188
F—X190

Electrical System Service

X184 Fuse Layout		
Fuse	Rating	Function
F1	70 A	(+30) QPL-M
F2	60 A	(+30) MSpray
F3	30 A	Fan Speed Variator
F4	60 A	(+30) QPL-S

X185 Relay Layout	
Relay	Function
R1	External Keyboard Power
R2	Four Wheel Steering Consent 1
R3	Four Wheel Steering Consent 2
R4	Not Used
R5	Not Used
R6	Not Used

X186 Relay Layout	
Relay	Function
R1	Fan Speed Variator
R2	Not Used

X187 Relay Layout	
Relay	Function
R1	Road Mode Consent
R2	Negative Output Power Control HE154 Machine
R3	Cleaning Tank Valve Joystick Mazzotti
R4	MSpray Supply Cut at Engine Start Up
R5	Not Used
R6	Not Used

X188 Fuse Layout		
Fuse	Rating	Function
F1	30 A	(+15) VP LE70 Controller
F2	30 A	(+15) VP 1 HE154 Boom
F3	40 A	(+15) VP HE154 Controller (1)
F4	40 A	(+15) VP HE154 Controller (2)
F5	30 A	(+15) VE MSpray
F6	40 A	(+15) VP 3 HE154 Boom

X190 Relay Layout	
Relay	Function
R1	(+30) VP MSpray
R2	(+15) VE MSpray

Cab Fuse Box

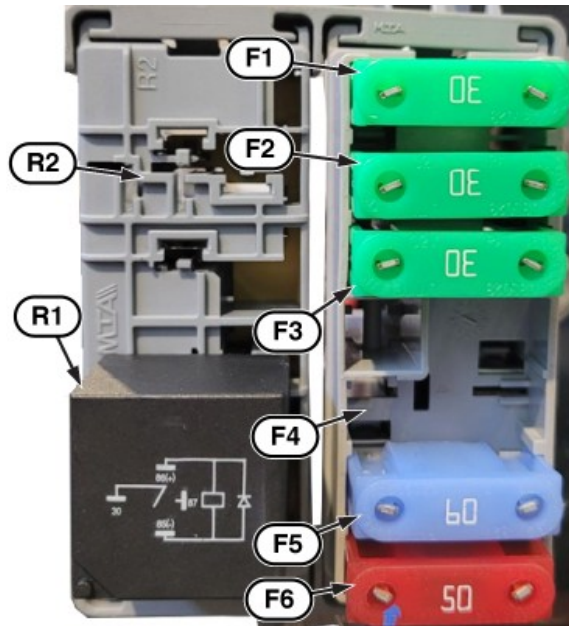
K13 ○		CC8082 F904-20A	CC8162 F903-15A	CC8632 F902-30A	CC8152 F901-10A
	CC8006-CC5107 D2 	CC8082 F907-20A	CC8172 F906-20A		CC8072 F905-10A
CC1202 F911-10A	CC8005-CC8013 D3 	CC8092 F910-20A		CC8302 F909-15A	CC8312 F908-10A
K5801 ○	CC8362 F914-10A	K5 ○		CC8622 F913-15A	CC0006 F912-5A
				CC8802 F915-15A	

TG654507—UN—21NOV24

Cab Fuse Layout		
Fuse	Rating	Function
F901	10 A	GPS Greenstar Receiver
F902	30 A	Front Beacon Power
F903	15 A	Dome Light and Map Light
F904	20 A	Not Used
F905	10 A	(+30) Display JD
F906	20 A	Seat Compressor
F907	20 A	Not Used
F908	10 A	Entertainment Radio
F909	15 A	(+30) Steering Column Lever
F910	20 A	Key Switch Power
F911	10 A	(+30) J1939 Diagnostic Connector (Engine)
F912	5 A	(+15) Display JD and Steering Column Lever
F913	15 A	Front Wiper Power
F914	10 A	Refrigerator/AUX Power
F915	15 A	Premium Server (Not Used)

Cab Diode Layout	
Relay	Function
D2	Not Used
D3	(+15) Display JD and Steering Column Lever
K5	Refrigerator/AUX Power Relay
K13	Front Beacon Relay
K5801	Not Used

Engine JD Fuse Box



TG695491—UN—04JAN26

Engine JD Fuse Box

Engine JD - Fuse Layout		
Fuse	Rating	Function
F1	30 A	ECU 1 Engine
F2	30 A	ECU 2 Engine
F3	30 A	ECU 3 Engine
F4		Not Used
F5	60 A	(+30) Starter Motor
F6	50 A	(+30) Cabin Power

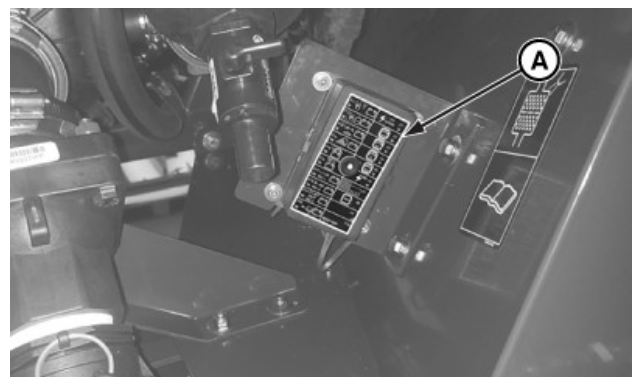
Engine JD - Relay Layout	
Relay	Function
R1	Starter Motor
R2	Not Used

CF4BIPJ,1770626441330-19-09FEB26

MSpray System Fuses

F11 5A		12V SENSORS	F1 5A
F12 5A		EPM BASE	F2 5A
F13 5A		EPM SCS	F3 5A
F14 10A		EPM TF	F4 5A
F15 10A		BOOM TRAC	F5 5A
F16 15A		30A	F6 5A
F17 15A		L1-L5/ INC-1	F7
F18 15A		R1-R5/ INC-2	F8
F19 15A		C-L6/7 -R6/7 INC-3	F9
F20 15A		WZW19295	F10

APY64481—UN—20JUL21



TG598734—UN—20OCT23

A—Fuse Box MSpray System

Fuses

The fuse box MSpray system (A) is located near the filling valve on the left hand side of the machine

Fuse Layout		
Fuse	Rating	Function
F1	5 A	Power supply (30 A power supply) for sensors having a supply voltage of 12 V
F2	5 A	Power supply (30 A power supply) for EPM base
F3	5 A	Power supply (30 A power supply) for EPM for solution command system (SCS)
F4	5 A	Not Used
F5	5 A	Power supply (30 A power supply) for TerrainCommand™ Pro
F6	5 A	Electronic power (30 A power supply) for SRC control unit (ELX and EPM for the solution command system)
F7	5 A	Keypad and display solution command system panel
F8	5 A	If equipped: Switched power supply INC (MNC Controller)
F11	5 A	Valve power for the solution pump (ground is controlled by control unit) MSpray
F12	5 A	Power for the fill pump (ground is controlled by the control unit) MSpray
F13	5 A	Valve power for variable geometry and boom height adjustment hydraulics (ground is switched by control unit)
F14	10 A	Not Used
F15	10 A	Valve power for automatic variable geometry control
F16	15 A	If equipped: battery power for INC
F17	15 A	Section valve power for L1, L2, L3, L4, and L5
		If equipped: battery power for ring line section valves and INC
F18	15 A	Section valve power for R1, R2, R3, R4 and R5
		If equipped: battery power for ring line section valves and INC
F19	15 A	Section valve power for C, L6, L7, R6, and R7.
		If equipped: battery power for ring line section valves and INC
F20	15 A	Power to the master valve for a pressure circulation system, where the master valve is placed at the center-frame of the machine
		Power to the electric agitation valve (if equipped)
		Power to the electric main fill valve (auto fill option)

NOTE: The allocation of the fuses is dependent on the machine configuration and options.

CF4BIPJ,1770626438892-19-09FEB26

Batteries

Prevent Acid Burns



APY65227—UN—20JUL21

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

Avoid the hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoiding breathing fumes when electrolyte is added.
4. Avoiding spilling or dripping electrolyte.
5. Using proper jump start procedure.

If acid spills on the skin:

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

If acid is swallowed:

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

KWPZAG2,00009EB-19-26AUG21

Handling, Checking, and Servicing Batteries

Handling Batteries

CAUTION: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Wash hands after handling.

- Keep batteries clean.
- Keep all connections clean and tight.
- Remove any corrosion, and wash terminals with the solution of baking soda and water.
- Coat the terminal with grease before attaching cables.

CAUTION: After charging the battery, remove the charging cables and start the engine to check that the battery has sufficient power to turn over the engine.

Checking Batteries

IMPORTANT: Negative (-) battery (cable of clamp) must be grounded.

- Keep batteries fully charged, especially during the cold weather.
- Check the specific gravity of electrolyte in each battery cell.

Servicing Batteries

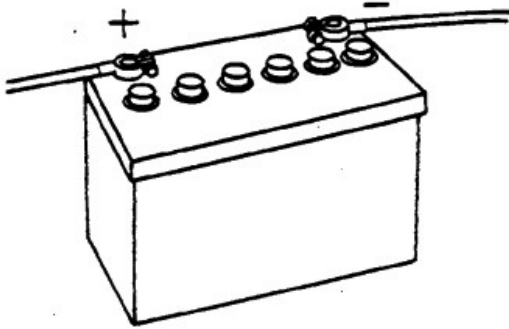
CAUTION: Batteries can explode causing serious injury or death to anyone around the vicinity. To service the batteries, attempt only if you have the proper equipment and experience to perform the job. Do NOT attempt to service the batteries without the requisites and see your John Deere dealer or other service provider for more information on battery servicing.

CAUTION: If electrolyte spills on the floor, use one of the following mixtures to neutralize the acid: 0.5 kg (1 lb) baking soda in 4 L (1 gal) water or 0.47 L (11.0 fl oz) household ammonia in 4 L (1 gal) water.

IMPORTANT: Do NOT overfill the battery cells.

- Proper battery maintenance is vital to dependable service.
- Keep the battery water level even with the bottom of cell filler neck and never below the top of cell plates.
- Do not add water in freezing weather.
- Ensure that the engine is running for 2 or 3 hours to

mix the electrolyte before adding water in freezing weather.



APY65228—UN—20JUL21
AWQNIWX,1754894700674-19-18AUG25

- Carefully observe the polarity when attaching booster battery.
- Do not operate the engine with alternator or battery disconnected.
- Do not short across battery or alternator terminals, or allow battery positive (+) cable or alternator wire to become grounded.
- Do not polarize the alternator.
- Disconnect battery cables before using an electric welder on the machine.
- Store batteries below 27°C (80°F) for the maximum shelf life. Check the voltage after storage and recharge as needed, as per recommendation from battery manufacturer.
- Do not store batteries in discharged state, or stack batteries on top of each other.

KWPZAG2,00009EE-19-26AUG21

Prevent Battery Explosions

CAUTION: 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 it last.



APY65229—UN—20JUL21

CAUTION: Keep sparks, lighted matches, and open flame away from the top of battery.

Do NOT charge a frozen battery. It could explode. If battery is frozen, warm battery to 16° C (60°F) before use.

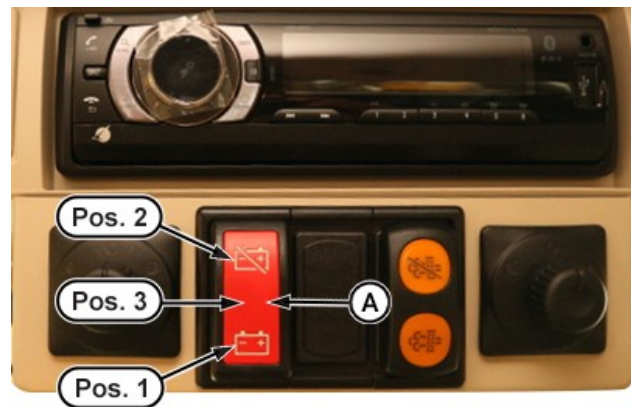
KWPZAG2,00009ED-19-26AUG21

Prevent Battery Damage

- Be sure that alternator connections are correct before cables are connected to battery.

Battery Electronic Disconnection

IMPORTANT: For stage V engines: Do NOT disconnect battery for at least 4 minutes after sprayer stops. The selective catalyst reduction (SCR) system automatically purges lines of diesel exhaust fluid (DEF) during this time, instantly after sprayer is stopped. If adequate time is not allowed for lines to be purged, any DEF remaining in lines can crystallize and plug lines. In freezing weather, DEF freezes and can cause line to burst.



APY85401—UN—03AUG23

A—Battery Cut-Off Switch
Pos. 1—Batteries are Connected
Pos. 2—Battery Detachment
Pos. 3—Neutral Function

The machine is equipped with a timer that works when the battery cut-off switch (A) is activated in battery detachment (Pos. 2) position. After the set 3 minutes have passed, cut-off switch interrupts the supply of current to the electrical system.

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Fuels, Lubricants and Coolants

Diesel Exhaust Fluid (DEF) — Use in Selective Catalytic Reduction (SCR) Equipped Engines

In order to maintain the emissions performance of the engine, it is essential to use and refill DEF in accordance with the specification.

Diesel exhaust fluid (DEF) is a high purity liquid that is injected into the exhaust system of engines equipped with selective catalytic reduction (SCR) systems. Maintaining the purity of DEF is important to avoid malfunctions in the SCR system. Engines requiring DEF shall use a product that meets the requirements for aqueous urea solution 32 (AUS 32) according to ISO 22241-1.

The use of John Deere Diesel Exhaust Fluid is recommended. John Deere Diesel Exhaust Fluid is available at your John Deere dealer in a variety of package sizes to suit your operational needs.

If John Deere Diesel Exhaust Fluid is not available, use DEF that is certified by the American Petroleum Institute (API) Diesel Exhaust Fluid Certification Program or by the AdBlue™ Diesel Exhaust Fluid Certification Program. Look for the API certification symbol or the AdBlue™ name on the container.



RG30211—UN—08MAR18

In some cases, DEF is referred to by one or more of these names:

- Urea
- Aqueous Urea Solution 32
- AUS 32
- AdBlue™
- NOx Reduction Agent
- Catalyst Solution

DX,DEF-19-13JAN18

Storing Diesel Exhaust Fluid (DEF)

⚠ CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: It is unlawful to tamper with or remove any component of the aftertreatment system. Do not use DEF that does not meet the required specifications or operate the engine with no DEF.

Never attempt to create DEF by mixing agricultural grade urea with water. Agricultural grade urea does not meet the necessary specifications and can damage the aftertreatment system.

Do not add any chemicals or additives to DEF in an effort to prevent freezing. Any chemicals or additives added to DEF can damage the aftertreatment system.

Never add water or any other fluid in place of, or in addition to DEF. Operating with a modified DEF or using an unapproved DEF can damage the aftertreatment system.

Storage information provided below is for reference and is to be used as a guideline only.

It is preferred to store DEF out of extreme ambient temperatures. DEF freezes at -11°C (12°F). Exposure to temperatures greater than 30°C (86°F) can degrade DEF over time. Do not store DEF in direct sunlight.

Dedicated DEF storage containers shall be sealed between uses to prevent evaporation and contamination. Containers made of polyethylene, polypropylene, or stainless steel are recommended to transport and store DEF.

Ideal conditions for storage of DEF are:

- Store at temperatures between -5°C and 30°C (23°F and 86°F)
- Store in dedicated containers sealed to avoid contamination and evaporation

Under these conditions, DEF is expected to remain useable for a minimum of 18 months. Storing DEF at higher temperatures can reduce its useful life by approximately 6 months for every 5°C (9°F) temperature above 30°C (86°F).

If unsure how long or under what conditions DEF has been stored, test DEF. See Testing Diesel Exhaust Fluid (DEF).

Long-term storage in the DEF tank (over 12 months) is not recommended. If long-term storage is necessary, test DEF prior to operating engine. See Testing Diesel Exhaust Fluid (DEF).

AdBlue is a trademark of VDA, the German Association of the Automotive Industry.

It is recommended to purchase DEF in quantities that will be consumed within 12 months.

DX,DEF,STORE-19-28AUG25

Diesel Exhaust Fluid (DEF) Tank Fill Cap — Installation and Removal

There are locking and non-locking DEF tank fill caps. Use the appropriate procedure.

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information.



TS1731—UN—23AUG13

IMPORTANT: Thoroughly clean the DEF filler cap and the area around the tank fill neck.

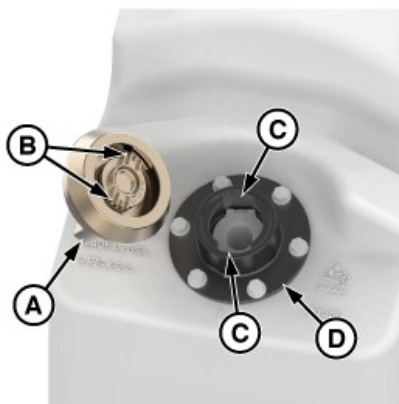
Use only distilled water to rinse components that are used to deliver DEF. Tap water can contaminate DEF. If distilled water is not available, rinse with clean tap water, then thoroughly rinse with ample amounts of DEF.

If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

IMPORTANT: Avoid damage to components. DO NOT use excessive force. Improper installation will result in damage to the DEF tank fill cap.

Reasonable care should be taken when opening the DEF tank. Ensure that the DEF tank cap area is free of debris before removing the cap. Close the tank and any containers of DEF between use to prevent contamination and evaporation.

Non-Locking DEF Tank Fill Cap Cap Removal



Non-Locking DEF Fill Cap

RG40361—UN—28JAN26

- 1—Counterclockwise Rotation ($\frac{1}{4}$ turn, 90°)
- 2—Straight Up
- 3—Straight Down
- 4—Clockwise Rotation ($\frac{1}{4}$ turn, 90°)

- A—Non-Locking Fill Cap
- B—Alignment Tab (2 used)
- C—Slot (2 used)
- D—Filler Neck

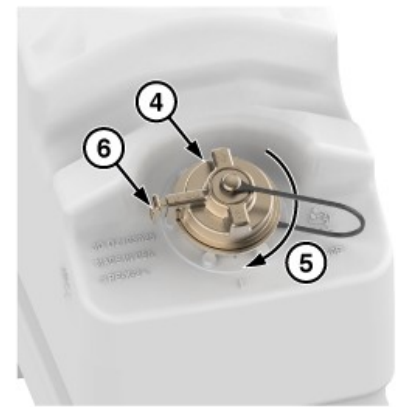
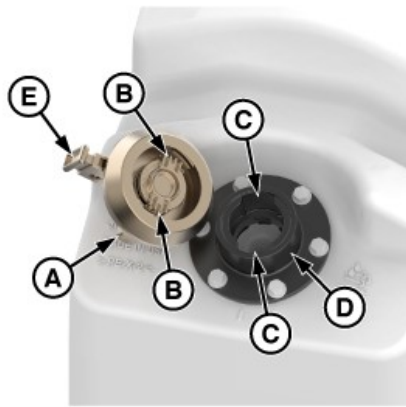
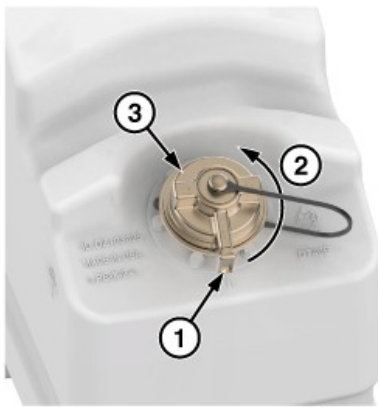
1. Rotate non-locking fill cap (A) counterclockwise, one quarter turn 90° (1).

2. Lift non-locking fill cap (A) straight up (2) and out of the DEF filler neck (D).

Cap Installation

IMPORTANT: Avoid damage to components. DO NOT use excessive force. ENSURE alignment tabs (B) are properly aligned with the slots (C) in filler neck (D). DO NOT use excessive force or overtighten. If excessive resistance is felt, then realign the cap before tightening.

1. Align tabs (B) of the non-locking fill cap (A) with the slots (C) of the DEF filler neck (D).
2. Install non-locking fill cap (A) straight down (3) into the DEF filler neck (D) until it is completely seated.



3. Hold non-locking fill cap (A) straight down (3) while rotating clockwise one quarter turn 90° (4). DO NOT use excessive force or overtighten fill cap.

Locking DEF Tank Fill Cap

Cap Removal

IMPORTANT: Avoid damage to components. DO NOT use excessive force. ENSURE locking tab is fully disengaged before attempting to rotate. DO NOT use excessive force to remove fill cap.

Locking Fill Cap

RG40362—UN—02JAN26

- 1—Locking Tab Disengagement
- 2—Counterclockwise Rotation (¼ turn, 90°)
- 3—Straight Up
- 4—Straight Down
- 5—Clockwise Rotation (¼ turn, 90°)
- 6—Locking Tab Engagement

- A—Locking Fill Cap
- B—Alignment Tab (2 used)
- C—Slot (2 used)
- D—Filler Neck
- E—Locking Tab

1. Slide locking tab (E) out as shown to disengage (1) the locking tab.
2. Rotate locking fill cap (A) counterclockwise one quarter turn 90° (2).
3. Lift locking fill cap (A) straight up (3) and out of the DEF filler neck (D).

Cap Installation

1. Align tabs (B) of the locking fill cap (A) with the slots (C) of the DEF filler neck (D).
2. Install locking fill cap (A) straight down (4) into the DEF filler neck (D) until it is completely seated.

IMPORTANT: Avoid damage to components. DO NOT use excessive force. ENSURE alignment tabs (B) are properly aligned with the slots (C) in filler neck (D). DO NOT use excessive force or overtighten. If excessive resistance is felt, then realign the cap before tightening.

3. Hold locking fill cap (A) straight down (4) while rotating clockwise one quarter turn 90° (5). DO NOT use excessive force or overtighten fill cap.
4. Slide locking tab (E) inward to engage (6) as shown to lock fill cap.

MH42591.00000A5-19-02JAN26

Refilling Diesel Exhaust Fluid (DEF) Tank



TS1731—UN—23AUG13

CAUTION: Avoid contact with eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Reference the Materials Safety Data Sheet (MSDS) for additional information.

Do not ingest DEF. In the event DEF is ingested, contact a physician immediately. Reference the Materials Safety Data Sheet (MSDS) for additional information.

IMPORTANT: Use only distilled water to rinse components that are used to deliver DEF. Tap water can contaminate DEF. If distilled water is not available, rinse with clean tap water, then thoroughly rinse with ample amounts of DEF.

If DEF is spilled or contacts any surface other than the storage tank, immediately clean the surface with clear water. DEF is corrosive to painted and unpainted metallic surfaces and can distort some plastic and rubber components.

If DEF is filled into engine fuel tank or other fluid compartment, do not operate engine until system is properly purged of DEF. Contact your John Deere dealer or other service provider to drain and clean the system.

Reasonable care should be taken when refilling the DEF tank. Ensure that the DEF tank cap area is free of debris before removing the cap. Seal containers of DEF between use to prevent contamination and evaporation.

Avoid splashing DEF and do not allow DEF to come into contact with skin, eyes, or mouth.

DEF is not harmful to handle, but DEF can be corrosive to materials such as steel, iron, zinc, nickel, copper, aluminum, and magnesium. Use suitable containers to transport and store DEF. Containers made of polyethylene, polypropylene, or stainless steel are recommended.

Avoid prolonged contact with skin. In case of accidental contact, wash skin immediately with soap and water.

Keep anything used to store or dispense DEF clean of dirt and dust. Wash and rinse containers or funnels thoroughly with distilled water to remove contaminants.

If an unapproved fluid, such as diesel fuel or coolant is added to the DEF tank, drain tank, flush with distilled water and refill with new or good DEF. See Testing Diesel Exhaust Fluid (DEF).

If water has been added to the DEF tank, a tank cleaning is necessary. See Cleaning DEF Tank in this manual. After refilling the tank, check the DEF concentration. See Testing Diesel Exhaust Fluid (DEF).

The operator shall maintain appropriate DEF levels at all times. Check the DEF level daily and refill the tank as needed. The filling port is identified by a blue colored cap embossed with the following DEF symbol.

DX,DEF,REFILL-19-28AUG25

Testing Diesel Exhaust Fluid (DEF)

IMPORTANT: Using DEF with the correct concentration is critical to engine and aftertreatment system performance. Extended storage and other conditions can adversely alter the DEF concentration.

If DEF quality is questionable, draw a sample out of the DEF tank or storage tank into a clear container. DEF shall be crystal clear with a light ammonia smell. If DEF appears cloudy, has a colored tint, or has a profound ammonia smell, it is likely not within specification. DEF in this condition should not be used. Drain tank, flush with distilled water and refill with new or good DEF. After refilling the tank, check the DEF concentration.

If the DEF passes the visual and smell test, check the DEF concentration with a handheld refractometer calibrated to measure DEF.

DEF concentration should be checked when the engine has been stored for extended periods, or if there is suspicion the engine or packaged DEF fluid has been contaminated with water.

Two tools are available from your John Deere through the SERVICEGARD special tool program:

- JDG11594 Digital DEF Refractometer—A digital tool providing an easy to read concentration measurement
- JDG11684 DEF Refractometer—Low-cost alternative tool providing an analog reading

Follow instructions included with either tool to obtain the measurement.

The correct DEF concentration is 31.8—33.2% urea. If the DEF concentration is not within specification, drain the DEF tank, flush with distilled water and fill with new or good DEF. If packaged DEF is not within specification, dispose of DEF packages and replace with new or good DEF.

DX,DEF,TEST-19-28AUG25

Disposal of Diesel Exhaust Fluid (DEF)

Although there is little issue with minor spillage of DEF on the ground, large amounts of DEF should be contained. If large spills occur, contact local environmental authorities for assistance with clean-up.

If a substantial quantity of DEF is not within specification, contact the DEF supplier for assistance with disposal. Do not dump substantial quantities of DEF onto the ground or send DEF to wastewater treatment facilities.

DX,DEF,DISPOSE-19-13JUN13

Diesel Fuel

Consult your local fuel distributor for properties of the diesel fuel available in your area.

In general, diesel fuels are blended to satisfy the low temperature requirements of the geographical area in which they are marketed.

Diesel fuels specified to EN 590 or ASTM D975 are recommended. Renewable diesel fuel produced by hydrotreating animal fats and vegetable oils is basically identical to petroleum diesel fuel. Renewable diesel that meets EN 590, ASTM D975, or EN 15940 is acceptable for use at all percentage mixture levels.

Required Fuel Properties

In all cases, the fuel shall meet the following properties:

Cetane number of 40 minimum. Cetane number greater than 47 is preferred, especially for temperatures below -20°C (-4°F) or elevations above 1675 m (5500 ft.).

Cloud Point should be below the expected lowest ambient temperature or **Cold Filter Plugging Point** (CFPP) should be a maximum 10°C (18°F) below the fuel cloud point.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

Diesel fuel quality and sulfur content shall comply with all existing emissions regulations for the area in which the engine operates. DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

Materials such as copper, lead, zinc, tin, brass and bronze should be avoided in fuel handling, distribution and storage equipment as these metals can catalyze fuel oxidation reactions which can lead to fuel system deposits and plugged fuel filters.

E-Diesel fuel

DO NOT use E-Diesel (Diesel fuel and ethanol blend). Use of E-Diesel fuel in any John Deere machine may void the machine warranty.

 **CAUTION:** Avoid severe injury or death due to the fire and explosion risk from using E-Diesel fuel.

Sulfur Content for Interim Tier 4, Final Tier 4, Stage III B, Stage IV, and Stage V Engines Above 560 kW

- Use ONLY diesel fuel with a maximum of 500 mg/kg (500 ppm) sulfur content.

Sulfur Content for Interim Tier 4, Final Tier 4, Stage III B, Stage IV Engines, and Stage V Engines

- Use ONLY ultra low sulfur diesel (ULSD) fuel with a maximum of 15 mg/kg (15 ppm) sulfur content.

Sulfur Content for Tier 3 and Stage III A Engines

- Use of diesel fuel with sulfur content less than 1000 mg/kg (1000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 1000—2000 mg/kg (1000—2000 ppm) REDUCES the oil and filter change interval.
- BEFORE using diesel fuel with sulfur content greater than 2000 mg/kg (2000 ppm), contact your John Deere dealer.

Sulfur Content for Tier 2 and Stage II Engines

- Use of diesel fuel with sulfur content less than 2000 mg/kg (2000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content 2000—5000 mg/kg (2000—5000 ppm) REDUCES the oil and filter change interval.¹
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer.

Sulfur Content for Other Engines

- Use of diesel fuel with sulfur content less than 5000 mg/kg (5000 ppm) is RECOMMENDED.
- Use of diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm) REDUCES the oil and filter change interval.

IMPORTANT: Do not mix used diesel engine oil or any other type of lubricating oil with diesel fuel.

Improper fuel additive usage may cause damage on fuel injection equipment of diesel engines.

DX,FUEL1-19-28AUG25

Supplemental Diesel Fuel Additives

Diesel fuel can be the source of performance or other

¹ See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2,EXT for more information on Engine Oil and Filter Service Intervals.

operational problems for many reasons. Some causes include poor lubricity, contaminants, low cetane number, and a variety of properties that cause fuel system deposits. These and others are referenced in other sections of this Operator's Manual.

To optimize engine performance and reliability, closely follow recommendations on fuel quality, storage, and handling, which are found elsewhere in this Operator's Manual.

To further aid in maintaining performance and reliability of the engine's fuel system, John Deere has developed a family of fuel additive products for most global markets. The primary products include Fuel-Protect Diesel Fuel Conditioner (full feature conditioner in winter and summer formulas) and Fuel-Protect Keep Clean (fuel injector deposit removal and prevention). Availability of these and other products varies by market. See your local John Deere dealer for availability and additional information about fuel additives that might be right for your needs.

DX,FUEL13-19-07FEB14

Lubricity of Diesel Fuel

Most diesel fuels manufactured in the United States, Canada, and the European Union have adequate lubricity to ensure proper operation and durability of fuel injection system components. However, diesel fuels manufactured in some areas of the world may lack the necessary lubricity.

IMPORTANT: Make sure the diesel fuel used in your machine demonstrates good lubricity characteristics.

Fuel lubricity should pass a maximum scar diameter of 0.52 mm as measured by ASTM D6079 or ISO 12156-1. A maximum scar diameter of 0.45 mm is preferred.

If fuel of low or unknown lubricity is used, add John Deere Fuel-Protect Diesel Fuel Conditioner (or equivalent) at the specified concentration.

Lubricity of Biodiesel Fuel

Fuel lubricity can improve significantly with biodiesel blends up to B30 (30% biodiesel). Further increase in lubricity is limited for biodiesel blends greater than B30.

DX,FUEL5-19-28AUG25

Handling and Storing Diesel Fuel

 **CAUTION: Reduce the risk of fire. Handle fuel carefully. DO NOT fill the fuel tank when engine is running. DO NOT smoke while you fill the fuel tank or service the fuel system.**

Fill the fuel tank at the end of each day's operation to

prevent water condensation and freezing during cold weather.

Keep all storage tanks as full as practical to minimize condensation.

Ensure that all fuel tank caps and covers are installed properly to prevent moisture from entering. Monitor water content of the fuel regularly.

When using biodiesel fuel, the fuel filter may require more frequent replacement due to premature plugging.

Check engine oil level daily prior to starting engine. A rising oil level may indicate fuel dilution of the engine oil.

IMPORTANT: The fuel tank is vented through the filler cap. If a new filler cap is required, always replace it with an original vented cap.

When fuel is stored for an extended period or if there is a slow turnover of fuel, add a fuel conditioner to stabilize the fuel. Keeping the free water drained and treating the bulk fuel storage tank quarterly with a maintenance dose of a biocide will prevent microbial growth.

DX,FUEL4-19-01MAR25

Biodiesel Fuel

Biodiesel fuel is comprised of monoalkyl esters of long chain fatty acids derived from vegetable oils or animal fats. Biodiesel blends are biodiesel mixed with petroleum diesel fuel on a volume basis.

Before using fuel containing biodiesel, review the Biodiesel Use Requirements and Recommendations in this Operator's Manual.

Environmental laws and regulations can encourage or prohibit the use of biofuels. Operators should consult with appropriate governmental authorities prior to using biofuels.

John Deere Stage V Engines Operating in the European Union

Where the engine is to be operated within the Union on diesel or non-road gasoil, a fuel with a FAME content not greater than 8% volume/volume (B8) shall be used.

John Deere Engines with Exhaust Filter Except Stage V Engines Operating in the European Union

Biodiesel blends up to B30 can be used ONLY if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 5% reduction in fuel economy when using B30.

Biodiesel concentrations above B30 can harm the engine's emission control systems and should not be used. Risks include, but are not limited to, more

frequent stationary regeneration, soot accumulation, and increased intervals for ash removal.

John Deere Fuel conditioners or equivalents, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B30, and are recommended when using lower biodiesel blends.

John Deere Engines Without Exhaust Filter

Biodiesel blends up to B30 can be used **ONLY** if the biodiesel (100% biodiesel or B100) meets ASTM D6751, EN 14214, or equivalent specification. Expect a 2% reduction in power and a 3% reduction in fuel economy when using B30.

These John Deere engines can operate on biodiesel blends above B30 (up to 100% biodiesel). Operate at levels above B30 **ONLY** if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B30 might not fully comply with or be permitted by all applicable emissions regulations. Expect up to a 12% reduction in power and an 18% reduction in fuel economy when using 100% biodiesel.

John Deere fuel conditioners or equivalents, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B100, and are recommended when using lower biodiesel blends.

Biodiesel Use Requirements and Recommendations

The petroleum diesel portion of all biodiesel blends shall meet the requirements of ASTM D975 (US) or EN 590 (EU) commercial standard.

Biodiesel users in the U.S. are strongly encouraged to purchase biodiesel blends from a BQ-9000 Certified Marketer and sourced from a BQ-9000 Accredited Producer (as certified by the National biodiesel Board). Certified Marketers and Accredited Producers can be found at the following website: <http://www.bq9000.org>.

Biodiesel contains residual ash. Ash levels exceeding the maximums allowed in either ASTM D6751 or EN14214 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present).

The fuel filter can require more frequent replacement when using biodiesel fuel, particularly if switching from diesel. Check engine oil level daily prior to starting engine. A rising oil level can indicate fuel dilution of the engine oil. Biodiesel blends up to B30 shall be used within 90 days of the date of biodiesel manufacture. Biodiesel blends above B30 shall be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B30, the following shall be considered:

- Cold-weather flow degradation
- Stability and storage issues (moisture absorption, microbial growth)

- Possible filter restriction and plugging (usually a problem when first switching to biodiesel on used engines)
- Possible fuel leakage through seals and hoses (primarily an issue with older engines)
- Possible reduction of service life of engine components

Request a certificate of analysis from your fuel distributor to ensure that the fuel is compliant with the specifications provided in this Operator's Manual.

Consult your John Deere dealer for John Deere fuel products to improve storage and performance with biodiesel fuels.

The following shall also be considered if using biodiesel blends above B30:

- Possible coking or blocked injector nozzles, resulting in power loss and engine misfire if John Deere fuel additives and conditioners or equivalent containing detergent/dispersants are not used
- Possible crankcase oil dilution (requiring more frequent oil changes)
- Possible lacquering or seizure of internal components
- Possible formation of sludge and sediments
- Possible thermal oxidation of fuel at elevated temperatures
- Possible compatibility issues with other materials (including copper, lead, zinc, tin, brass, and bronze) used in fuel handling, distribution, and storage equipment
- Possible reduction in water separator efficiency
- Possible damage to paint if exposed to biodiesel
- Possible corrosion of fuel injection equipment
- Possible elastomeric seal and gasket material degradation (primarily an issue with older engines)
- Possible high acid levels within fuel system
- Because biodiesel blends above B30 contain more ash, using blends above B30 can result in more rapid ash loading and require more frequent cleaning of the Exhaust Filter (if present)

IMPORTANT: Raw pressed vegetable oils are NOT acceptable for use as fuel in any concentration in John Deere engines. Their use could cause engine failure.

DX,FUEL7-19-11SEP25

Testing Diesel Fuel

A fuel analysis program can help to monitor the quality of diesel fuel. The fuel analysis can provide critical data such as calculated cetane index, fuel type, sulfur content, water content, appearance, suitability for cold

weather operations, bacteria, cloud point, acid number, particulate contamination, and whether the fuel meets ASTM D975 or equivalent specification.

Contact your John Deere dealer or other service provider for diesel fuel analysis.

DX,FUEL6-19-01MAR25

Fuel Filters

The importance of fuel filtration cannot be overemphasized with modern fuel systems. The combination of increasingly restrictive emission regulations and more efficient engines requires fuel system to operate at much higher pressures. Higher pressures can only be achieved using fuel injection components with very close tolerances. These close manufacturing tolerances have significantly reduced capacities for debris and water.

John Deere brand fuel filters have been designed and produced specifically for John Deere engines.

To protect the engine from debris and water, always change engine fuel filters as specified in this manual.

DX,FILT2-19-14APR11

Minimizing the Effect of Cold Weather on Diesel Engines

John Deere diesel engines are designed to operate effectively in cold weather.

However, for effective starting and cold-weather operation, a little extra care is necessary. The following information outlines steps that can minimize the effect that cold weather may have on starting and operation of your engine. See your John Deere or other service provider for additional information and local availability of cold-weather aids.

Use Winter Grade Fuel

When temperatures fall below 0°C (32°F), winter grade fuel (No. 1-D in North America) is best suited for cold-weather operation. Winter grade fuel has a lower cloud point and a lower pour point.

Cloud point is the temperature at which wax begins to form in the fuel. This wax causes fuel filters to plug.

Pour point is the lowest temperature at which movement of the fuel is observed.

NOTE: On average, winter grade diesel fuel has a lower Btu (heat content) rating. Using winter grade fuel may reduce power and fuel efficiency, but should not cause any other engine performance effects. Check the grade of fuel being used before troubleshooting for low-power complaints in cold-weather operation.

Air Intake Heater

An air intake heater is an available option for some engines to aid cold weather starting.

Coolant Heater

An engine block heater (coolant heater) is an available option to aid cold weather starting.

Seasonal Viscosity Oil and Proper Coolant Concentration

Use seasonal grade viscosity engine oil based on the expected air temperature range between oil changes and a proper concentration of low silicate antifreeze as recommended. (See DIESEL ENGINE OIL and ENGINE COOLANT requirements in this section.)

Diesel Fuel Cold Flow Additive

Use John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula), which contains anti-gel chemistry, or equivalent fuel conditioner to treat non-winter grade fuel (No. 2-D in North America) during the cold-weather season. This generally extends operability to about 10° C (18°F) below the fuel cloud point. For operability at even lower temperatures, use winter grade fuel.

IMPORTANT: Treat fuel when outside temperature drops below 0°C (32°F). For best results, use with untreated fuel. Follow all recommended instructions on label.

Biodiesel

When operating with biodiesel blends, wax formation can occur at warmer temperatures. Begin using John Deere Fuel-Protect Diesel Fuel Conditioner (winter formula) or equivalent at 5°C (41°F) to treat biodiesel fuels during the cold-weather season. Use B5 or lower blends at temperatures below 0°C (32°F). Use only winter grade petroleum diesel fuel at temperatures below -10°C (14°F).

Winterfronts

Use of fabric, cardboard, or solid winterfronts is not recommended with any John Deere engine. Their use can result in excessive engine coolant, oil, and charge air temperatures. This can lead to reduced engine life, loss of power and poor fuel economy. Winterfronts may also put abnormal stress on fan and fan drive components potentially causing premature failures.

If winterfronts are used, they should never totally close off the grill frontal area. Approximately 25% area in the center of the grill should remain open at all times. At no time should the air blockage device be applied directly to the radiator core.

Radiator Shutters

If equipped with a thermostatically controlled radiator shutter system, this system should be regulated in such a way that the shutters are completely open by the time

the coolant reaches 93°C (200°F) to prevent excessive intake manifold temperatures. Manually controlled systems are not recommended.

If air-to-air aftercooling is used, the shutters shall be completely open by the time the intake manifold air temperature reaches the maximum allowable temperature out of the charge air cooler.

DX,FUEL10-19-28AUG25

John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V

New engines are filled at the factory with John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In Plus™ Engine Oil, as needed to maintain the specified oil level.

Operate the engine under various conditions, particularly heavy loads with minimal idling, to help seat engine components properly.

During the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and maximum equal to the interval specified for John Deere Plus-50™ II oil.

After engine overhaul, fill the engine with John Deere Break-In Plus™ Engine Oil.

If John Deere Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following:

- API Service Category CK-4
- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

If one of these oils is used during the initial operation of a new or rebuilt engine, change the oil and filter between a minimum of 100 hours and a maximum of 250 hours.

IMPORTANT: Do not use any other engine oils during the initial break-in of a new or rebuilt engine.

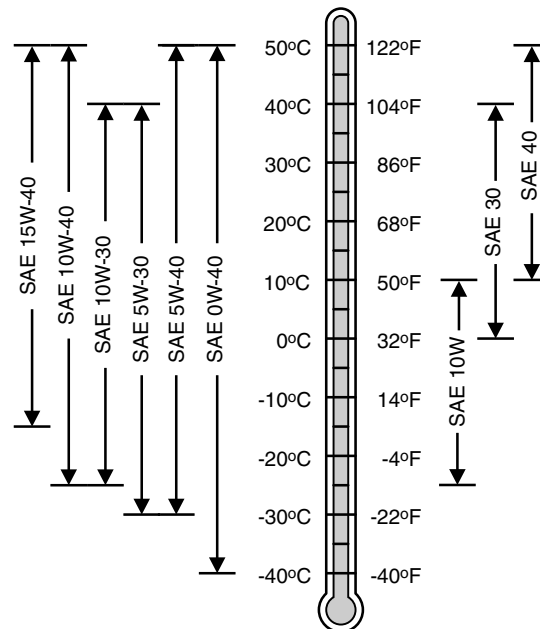
John Deere Break-In Plus™ Engine Oil can be used for all John Deere diesel engines at all emission certification levels.

After the break-in period, use John Deere Plus-50™ II or other diesel engine oil as recommended in this manual.

DX,ENOIL16-19-13JAN18

*Break-In Plus is a trademark of Deere & Company
Plus-50 is a trademark of Deere & Company.*

Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V



TS1743—UN—25APR19

Oil Viscosities for Air Temperature Ranges

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

Use oil viscosity based on the expected air temperature range during the period between oil changes.

John Deere Plus-50™ II is the recommended engine oil.

Extended service intervals may apply when John Deere Plus-50™ II engine oil is used. Refer to the engine oil drain interval table and consult your John Deere dealer for more information.

If John Deere Plus-50™ II engine oil is not available, engine oil meeting one or more of the following may be used:

- API Service Category CK-4
- API Service Category CJ-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E6

DO NOT use engine oil containing more than 1.0% sulfated ash, 0.12% phosphorus, or 0.4% sulfur.

Multi-viscosity diesel engine oils are preferred.

Diesel fuel quality and fuel sulfur content must comply with all existing emissions regulations for the area in which the engine operates.

IMPORTANT: Use only ultra low sulfur diesel (ULSD) fuel with a maximum sulfur content of 15 mg/kg (15 ppm).

DX,ENOIL14-19-23APR19

Diesel Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V— OEM Applications

Failure to follow applicable oil standards and drain intervals can result in severe engine damage that might not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere oils, parts, or service.

Recommended oil and filter service intervals are based on a combination of oil pan capacity, type of engine oil and filter used, and sulfur content of the diesel fuel. Actual service intervals also depend on operation and maintenance practices.

Approved Oil Types

- John Deere Plus-50™ II
- “Other Oils” include API CK-4, API CJ-4, ACEA E9, and ACEA E6.

Use oil analysis to evaluate the condition of the oil and to aid in selection of the proper oil and filter service interval. Contact your John Deere dealer or other qualified service provider for more information on engine oil analysis.

Change the oil and oil filter at least once every 12 months even if the hours of operation are fewer than the otherwise recommended service interval.

Diesel fuel sulfur content affects engine oil and filter service intervals. Higher fuel sulfur levels reduce oil and filter service intervals.

Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm) is **REQUIRED**.

Engine operation at high altitude decreases oil change intervals. See Diesel Engine Oil Service Interval for Operation at High Altitude for additional information.

NOTE: The 500-hour extended oil and filter change interval is only allowed if all of the following conditions are met:

- Engine equipped with an extended drain interval oil pan
- Use of diesel fuel with sulfur content less than 15 mg/kg (15 ppm)
- Use of John Deere Plus-50™ II oil
- Use of an approved John Deere oil filter

IMPORTANT: To avoid engine damage:

- Reduce oil and filter service intervals by 50% when using biodiesel blends greater than B20. Oil analysis may allow longer service interval
- Use only approved oil types

Engine Oil and Filter Service Intervals		
	Oil Pan Size (L/kW)	
	Greater than or equal to 0.10	Greater than or equal to 0.12
John Deere Plus-50™ II	375 hours	500 hours
Other Oils	250 hours	250 hours
Oil analysis may extend the service interval of “Other Oils” to a maximum not to exceed the interval of Plus-50™ II oils. Oil analysis means taking a series of oil samples at 50-hour increments beyond the normal service interval until either the data indicates the end of useful oil life or the maximum service interval of John Deere Plus-50 II oils is reached.		

DX,ENOIL15,IT4,OEM-19-13JAN18

Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

DX,LUBMIX-19-18MAR96

Alternative and Synthetic Lubricants

Conditions in certain geographical areas may require lubricant recommendations different from those printed in this manual.

Some John Deere brand coolants and lubricants may not be available in your location.

Consult your John Deere dealer to obtain information and recommendations.

Synthetic lubricants may be used if they meet the performance requirements as shown in this manual.

The temperature limits and service intervals shown in this manual apply to John Deere branded fluids or fluids that have been tested and/or approved for use in John Deere equipment.

Re-refined base stock products may be used if the finished lubricant meets the performance requirements.

DX,ALTER-19-13JAN18

Lubricant Storage

Your equipment can operate at top efficiency only when clean lubricants are used.

Use clean containers to handle all lubricants.

Store lubricants and containers in an area protected from dust, moisture, and other contamination. Store containers on their side to avoid water and dirt accumulation.

Make certain that all containers are properly marked to identify their contents.

Properly dispose of all old containers and any residual lubricant they may contain.

DX,LUBST-19-11APR11

Oil Filters

Filtration of oils is critically important for proper operation and lubrication. John Deere brand oil filters have been designed and produced specifically for John Deere applications.

John Deere filters adhere to engineering specifications for quality of the filter media, filter efficiency rating, strength of the bond between the filter media and the element end cap, fatigue life of the canister (if applicable), and pressure capability of the filter seal. Non-John Deere branded oil filters might not meet these key John Deere specifications.

Always change oil filters regularly as specified in this manual.

DX,FILT1-19-11APR11

Diesel Engine Coolant (engine with wet sleeve cylinder liners)

Failure to follow applicable coolant standards and drain intervals can result in severe engine damage that may not be covered under warranty. Warranties, including the emissions warranty, are not conditioned on the use of John Deere coolants, parts, or service.

Preferred Coolants

The following pre-mix engine coolants are preferred:

- John Deere COOL-GARD™ II
- John Deere COOL-GARD II PG

COOL-GARD II pre-mix coolant is available in several concentrations with different freeze protection limits as shown in the following table.

COOL-GARD II Pre-Mix	Freeze Protection Limit
COOL-GARD II 20/80	-9°C (16°F)
COOL-GARD II 30/70	-16°C (3°F)
COOL-GARD II 50/50	-37°C (-34°F)
COOL-GARD II 55/45	-45°C (-49°F)
COOL-GARD II PG 60/40	-49°C (-56°F)
COOL-GARD II 60/40	-52°C (-62°F)

Not all COOL-GARD II pre-mix products are available in all countries.

Use COOL-GARD II PG when a non-toxic coolant formulation is required.

Additional Recommended Coolants

The following engine coolant is also recommended:

- John Deere COOL-GARD II Concentrate in a 40—60% mixture of concentrate with quality water.

IMPORTANT: When mixing coolant concentrate with water, do not use less than 40% or greater than 60% concentration of coolant. Less than 40% gives inadequate additives for corrosion protection. Greater than 60% can result in coolant gelation and cooling system problems.

Other Coolants

Other ethylene glycol or propylene glycol base coolants may be used if they meet the following specification:

- Pre-mix coolant meeting ASTM D6210 requirements
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Coolant concentrate meeting ASTM D6210 requirements in a 40—60% mixture of concentrate with quality water

If coolant meeting one of these specifications is unavailable, use a coolant concentrate or pre-mix coolant that has a minimum of the following chemical and physical properties:

- Provides cylinder liner cavitation protection according to either the John Deere Cavitation Test Method or a fleet study run at or above 60% load capacity
- Is formulated with a nitrite-free additive package
- Is formulated with a 2-ethylhexanoic acid (2-EHA) free additive package
- Protects the cooling system metals (cast iron, aluminum alloys, and copper alloys such as brass) from corrosion

Water Quality

Water quality is important to the performance of the cooling system. Deionized or demineralized water is

recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

Coolant Drain Intervals

Drain and flush the cooling system and refill with fresh coolant at the indicated interval, which varies with the coolant used.

When COOL-GARD II or COOL-GARD II PG is used, the drain interval is 6 years or 6000 hours of operation.

If a coolant other than COOL-GARD II or COOL-GARD II PG is used, reduce the drain interval to 2 years or 2000 hours of operation.²

IMPORTANT: Do not use cooling system sealing additives or antifreeze that contains sealing additives.

Do not mix ethylene glycol and propylene glycol base coolants.

Do not use coolants that contain nitrites.

DX,COOL3-19-25AUG20

Water Quality for Mixing with Coolant Concentrate

Engine coolants are a combination of three chemical components: ethylene glycol (EG) or propylene glycol (PG) antifreeze, inhibiting coolant additives, and quality water.

Water quality is important to the performance of the cooling system. Deionized or demineralized water is recommended for mixing with ethylene glycol and propylene glycol base engine coolant concentrate.

All water used in the cooling system should meet the following minimum specifications for quality:

Chlorides	<40 mg/L
Sulfates	<100 mg/L
Total solids	<340 mg/L
Total dissolved hardness	<170 mg/L
pH	5.5—9.0

IMPORTANT: Do not use bottled drinking water because it often contains higher concentrations of total dissolved solids.

Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

² Coolant analysis may extend the service interval of other "Coolants" to a maximum not to exceed the interval of Cool-Gard II coolants. Coolant analysis means taking a series of coolant samples at 1000 hour increments beyond the normal service interval until either the data indicate the end of useful coolant life or the maximum service interval of Cool-Gard II is reached.

Ethylene Glycol	Freeze Protection Limit
40%	-24°C (-12°F)
50%	-37°C (-34°F)
60%	-52°C (-62°F)
Propylene Glycol	Freeze Protection Limit
40%	-21°C (-6°F)
50%	-33°C (-27°F)
60%	-49°C (-56°F)

DO NOT use a coolant-water mixture greater than 60% ethylene glycol or 60% propylene glycol.

DX,COOL19-19-13JAN18

Operating in Warm Temperature Climates

John Deere engines are designed to operate using recommended engine coolants.

Always use a recommended engine coolant, even when operating in geographical areas where freeze protection is not required.

IMPORTANT: Water may be used as coolant in emergency situations only.

Foaming, hot surface aluminum and iron corrosion, scaling, and cavitation occur when water is used as the coolant, even when coolant conditioners are added.

Drain cooling system and refill with recommended engine coolant as soon as possible.

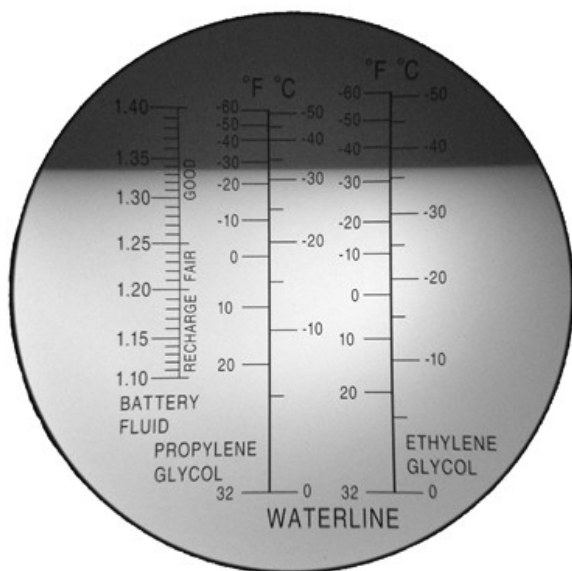
DX,COOL6-19-17FEB20

Testing Coolant Freeze Point



TS1732—UN—04SEP13

SERVICEGARD™ Part Number 75240



TS1733—UN—04SEP13

Image with a Drop of 50/50 Coolant Placed on the Refractometer Window

The use of a handheld coolant refractometer is the quickest, easiest, and most accurate method to determine coolant freeze point. This method is more accurate than a test strip or a float-type hydrometer which can produce poor results.

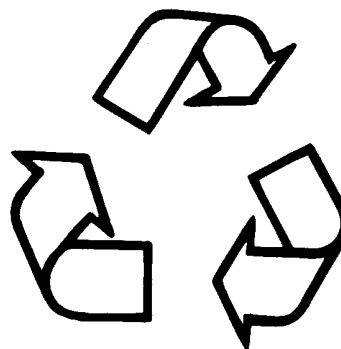
A coolant refractometer is available through your John Deere dealer under the SERVICEGARD™ tool program. Part number 75240 provides an economical solution to accurate freeze point determination in the field.

To use this tool:

1. Allow cooling system to cool to ambient temperatures.
2. Open radiator cap to expose coolant.
3. With the included dropper, collect a small coolant sample.
4. Open the lid of the refractometer, place one drop of coolant on the window and close the lid.
5. Look through the eyepiece and focus as necessary.
6. Record the listed freeze point for the type of coolant (ethylene glycol coolant or propylene glycol) being tested.

DX,COOL,TEST-19-13JUN13

Disposing of Coolant



Recycle Waste

TS1133—UN—15APR13

Improperly disposing of engine coolant can threaten the environment and ecology.

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

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

Inquire on the proper way to recycle or dispose of waste from the local environmental or recycling center, from engine distributor, from a John Deere dealer, or from other service provider.

RG,RG34710,7543-19-06JAN26

Hydraulic Oil

Use the oil viscosity based on the expected air temperature range during the period between oil changes.

The following oil is preferred:

- IP HYDRUS HY ISO 46

The following oils are acceptable:

- AGIP (Arnica 46)
- ESSO (Invarol EP)
- API (HS 46)
- SHELL (Tellus S2 VX 46)

KWPZAG2,00006E0-19-12AUG21

Grease

IMPORTANT: Some types of thickeners, base oils, and additives used in greases are not compatible with others. Mixing greases should be avoided. Consult your grease supplier before mixing different types of grease.

Use grease based on NLGI consistency numbers and the expected air temperature range during the service interval.

- Multi-Purpose Lithium Grease

KWPZAG2,00006E1-19-29AUG21

The following grease is preferred:

Diesel Engine Oil and Filter Service Intervals

		Oil Pan Option Codes							
Power Rating	Fuel Sulfur Content	1903 19BB		19AE 19BC		1923 19BA		1976 19AZ 19GK	
kW (hp)		Other Oils	John Deere Plus-50 II	Other Oils	John Deere Plus-50 II	Other Oils	John Deere Plus-50 II	Other Oils	John Deere Plus-50 II
63 (85)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours
74 (100)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours
86 (115)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours
93 (125)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours
100 (135)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours
104 (140)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours
129 (173)	≤15 ppm	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours	250 hours	500 hours

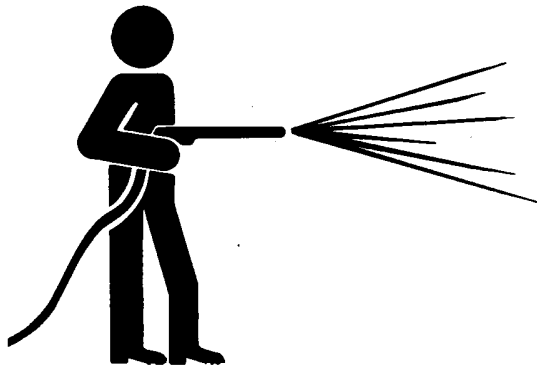
ZE59858,0000008-19-26SEP19

Lubrication and Maintenance

High Pressure Washers

CAUTION: 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 keep the spray cone at a 45° to 90° angle.

Do NOT spray or wash components (e.g. the fuel injection pump) with cold water when hot, under any circumstances. Spraying directly onto the input shaft seal on the hydrostatic pump causes a seal leak.



T6642EJ—UN—18OCT88
cf4bipj,1685601895197-19-01JUN23

Lubrication and Periodic Service

CAUTION: Do NOT lubricate or adjust the machine while the engine is running unless recommended to do so.

IMPORTANT: After servicing, cleaning or repairing the machine, reinstall any safety guards or shields before operating the sprayer again.

The intervals at which the various parts should be checked, lubricated, serviced, or adjusted are based on the actual hours of operation as shown on the hour meter. The meter operates whenever the engine is running and shows the accumulated hours of engine operation.

Every 250 hours, an acoustic warning signal sounds when the engine starts (for five consecutive engine starts). This reminds the operator that service work is due.

Always check that the hour meter is serviceable.

The lubrication and periodic service intervals are for normal working conditions. These intervals should be shortened when operating under adverse conditions.

awqniwx,1721974294130-19-26JUL24

General Information Regarding Condition of Vehicle

Perform a thorough visual inspection on the machine on a regular basis or at every service interval at the latest, ensuring the following:

- Safety features and shields are in place and installed properly.
- All warning labels and decals are in place and are legible.
- Tires are in good condition.
- All lines and hoses are in good condition.
- Electrical wiring and ground connections are in good condition.
- There are no flammable materials in high heat emission areas.
- Vehicle shows no signs of leakage.

cf4bipj,1685601907749-19-01JUN23

Check/Replace Hydraulic Hoses

Check hydraulic hoses regularly, at least once a year - for leaks, kinks, cuts, tears, rubbing, bulges, corrosion, exposed fabric, and other signs of wear or damage.

Replace worn or damaged hoses immediately.

For more information about hose replacement, see your John Deere dealer or other service provider.

cf4bipj,1685601914649-19-18AUG25

Maintenance Points—Left Hand Side



TG640734—UN—26JUL24

- 1—Cat IV Filter
- 2—Cab Recirculation Filter (Cat I - Cat III)
- 3—Cab Fresh Air Filter (under operator's seat)
- 4—Hand Washing Tank
- 5—Engine Cover (access to coolant reservoir)

- 6—Fan / Compressor Belt, Engine Dipstick - Oil Level
- 7—Urea Tank (behind cab)
- 8—Diesel Fueling Point
- 9—Spray System Panel (MSpray or Standard)

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Maintenance Points—Right Hand Side



TG640735—UN—20SEP24

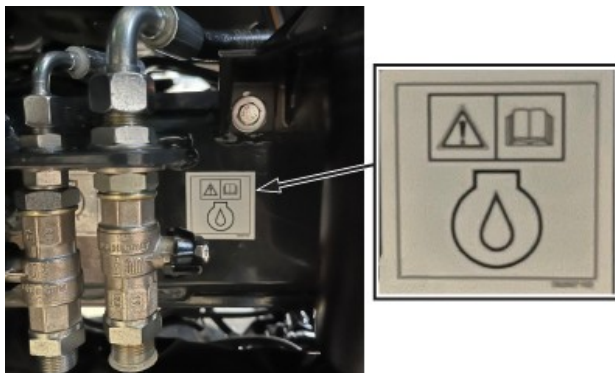
- 10—Engine Air Filter
- 11—Hydraulic Filter (suction side)
- 12—Hydraulic Oil Reservoir
- 13—Hydraulic Filter (return side), Water Separator Filter

- 14—Battery Compartment
- 15—Utilities Panel, Spray Pump, Centrifugal Pump (if equipped)
- 16—High Pressure Filter

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Instructional Service Points

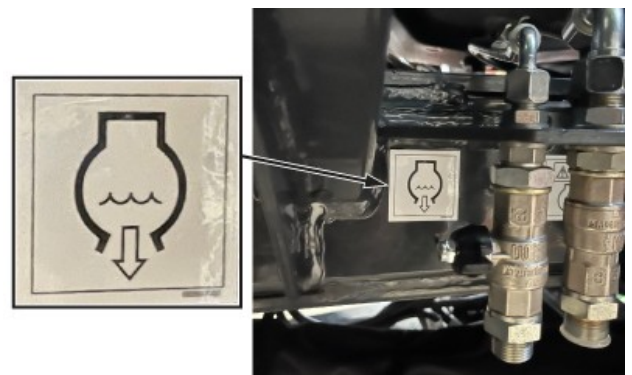
Engine Oil Drain Point Decal



TG618081—UN—27MAR24

Observe the engine drain location point.

Engine Coolant Drain Point Decal



TG618082—UN—27MAR24

Engine Coolant Drain Point Decal

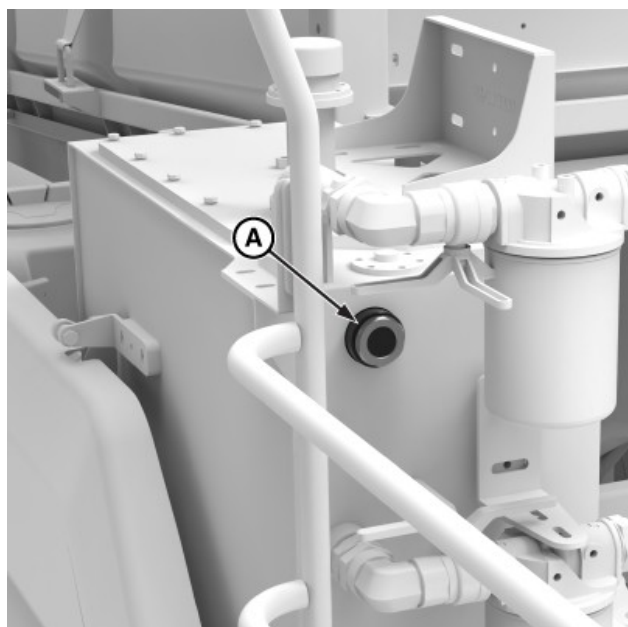
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Hydraulic System

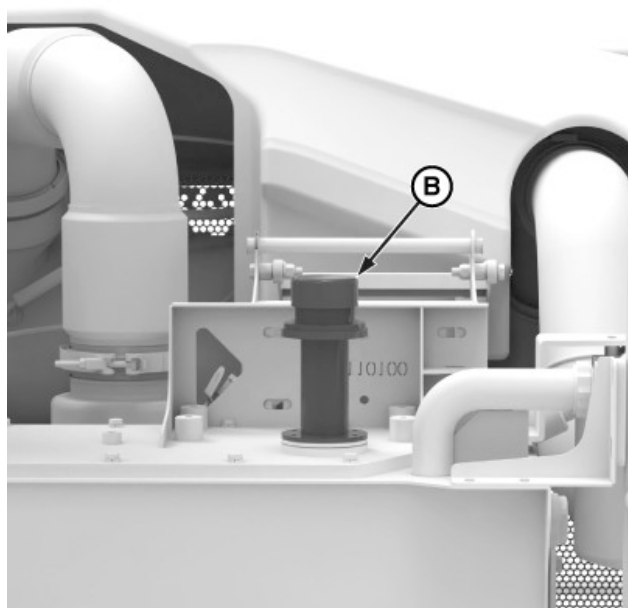
⚠ CAUTION: Fine jets of pressurized hydraulic oil can penetrate the skin. Do NOT use your fingers to search for leaks, but use a piece of cardboard.

⚠ CAUTION: Use only compatible oil approved by the manufacturer.

Checking the Oil Level in the Main Tank



APY85132—UN—17MAY23



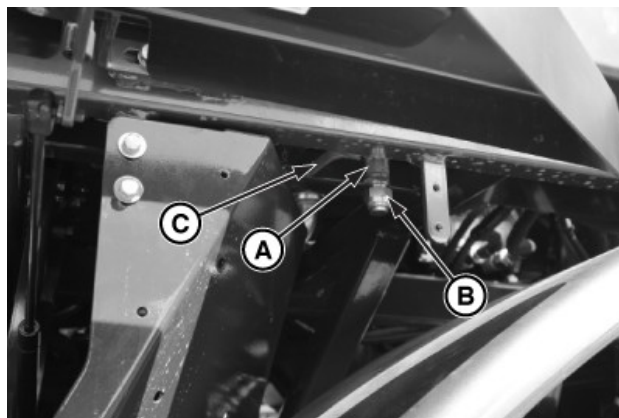
TG640339—UN—11JUL24

A—Hydraulic Oil Level Indicator
B—Cap

- Check the hydraulic oil level daily through hydraulic oil level indicator (A).

- If required, add oil through the cap (B)

Drain Hydraulic Oil—Main Tank



TG598789—UN—24OCT23

A—Hydraulic Oil Drain Port
B—Drain Cover
C—Drain Lever

When it is necessary to replace the hydraulic oil, proceed as follows:

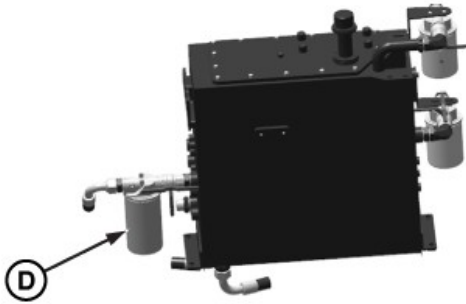
1. Park machine on a flat, level surface and turn engine off and ensure that the park brake is engaged.
2. The drain port (A) is located near the right front tire of the machine.
3. Open the right hand cover of the machine to gain access to drain port (A).
4. Place a suitable container under drain port (A).
5. Remove the drain cover (B).
6. Rotate the drain lever (C) to open.
7. After the oil is drained close the drain lever (C)
8. Clean and install the drain cover (B).

Replace Hydraulic Oil Filter Cartridge—Return Side

⚠ CAUTION: The hydraulic oil filter cartridges can in no way be reused after cleaning or washing. They must therefore be replaced with new cartridges of the type recommended by the manufacturer.

⚠ CAUTION: Replace the filter cartridge whenever this is indicated by an error code on the dashboard display (TERA Monitor).

⚠ CAUTION: When the oil is cold, the clogged cartridge warning may appear on the TERA monitor, wait for the oil to warm up and ensure that the warning disappears. If the warning does not disappear, replace the cartridge.



D—Cartridge

TG598976—UN—24OCT23

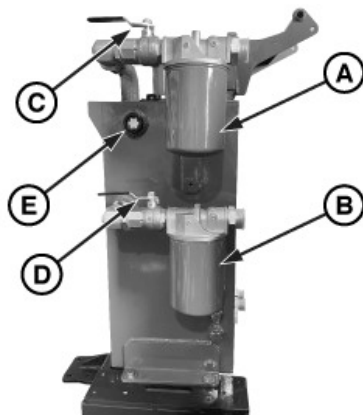
1. Park machine on a flat, level surface and turn engine off and ensure that the park brake is engaged.
2. Place a suitable container under the filter cartridge to collect oil leaks.
3. Remove the cartridge (D).
4. Replace the cartridge (D). Clean and lubricate the seat and seal.
5. Align and tighten the cartridge (D) manually.

Replace Hydraulic Oil Filter Cartridge—Intake Side

CAUTION: The hydraulic oil filter cartridges can in no way be reused after cleaning or washing. They must therefore be replaced with new cartridges of the type recommended by the manufacturer.

CAUTION: Replace the filter cartridge whenever this is indicated by an error code on the dashboard display (TERA Monitor).

CAUTION: When the oil is cold, the cartridge clogged warning may appear on the TERA monitor, wait for the oil to warm up and ensure that the warning disappears. If the warning does not disappear, replace the cartridge.



TG640723—UN—12JUL24

A—Cartridge
B—Cartridge
C—Tap

D—Tap
E—Oil Level Indicator

1. Park machine on a flat, level surface and turn engine off and ensure that the parking brake is engaged.
2. Place a suitable container under the filter cartridge to collect oil leaks.
3. Close the tap (C) and (D).
4. Remove the filter cartridge (A) and (B) by using a chain wrench.
5. Replace the cartridge (A) and (B).
6. Clean and lubricate the seat and seal.
7. Tighten by hand then open the tap (C) and (D) again and block it with a clip.
8. Tighten the cartridge and open the tap (C) and (D). Lock the tap by using a clip.

Replace Hydraulic Oil Filter Cartridge—Delivery Side

CAUTION: The hydraulic oil filter cartridges can in no way be reused after cleaning or washing. They must therefore be replaced with new cartridges of the type recommended by the manufacturer.

CAUTION: Replace the filter cartridge whenever this is indicated by an error code on the dashboard display (TERA Monitor).

CAUTION: When the oil is cold, the cartridge clogged warning may appear on the TERA monitor, wait for the oil to warm up and ensure that the warning disappears. If the warning does not disappear, replace the cartridge.



TG648224—UN—24SEP24

G—Cartridge

1. Park machine on a flat, level surface and turn engine off and ensure that the parking brake is engaged.
2. Place a suitable container under the filter cartridge to collect oil leaks.
3. Loosen the filter cover and remove the filter cartridge.

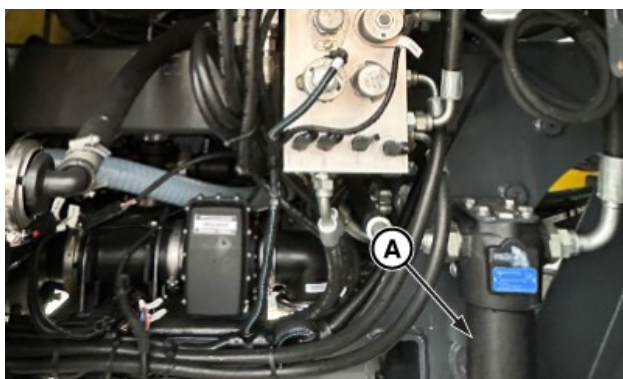
4. Replace the cartridge (G) Clean and lubricate the seat and seal.
5. Tighten the cartridge (G).

Replace MSpray Pump Filter

CAUTION: The Mspray pump filter can in no way be reused after cleaning or washing. They must therefore be replaced with new filter of the type recommended by the manufacturer.

CAUTION: Replace the filter cartridge whenever this is indicated by an error code on the dashboard display (TERA Monitor).

CAUTION: When the oil is cold, the filter clogged warning may appear on the TERA monitor, wait for the oil to warm up and ensure that the warning disappears. If the warning does not disappear, replace the filter.



TG618851—UN—05APR24

A—MSpray Filter

1. Park machine on a flat, level surface and turn engine off and ensure that the park brake is engaged.
2. Place a suitable container under the filter cartridge to collect oil leaks.
3. Remove the filter (A).
4. Replace the filter (A). Clean and lubricate the seat and seal.
5. Align and tighten the filter (A) manually.

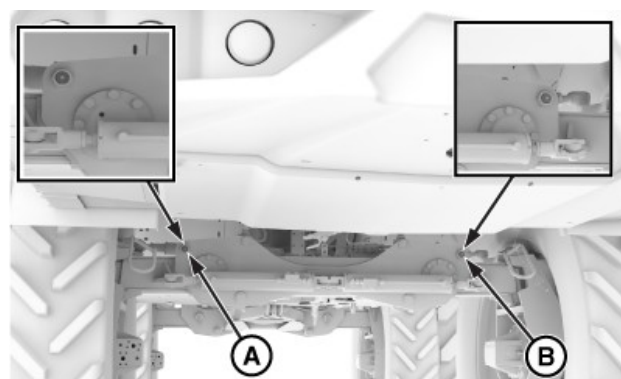
awqniwx,1720686286968-19-11OCT24

Greasing Points

CAUTION: Before injecting grease into the greasing points, clean the greasing points thoroughly to prevent mud, dust or other foreign bodies from mixing with the grease. This procedure is applicable to any boom type or configuration.

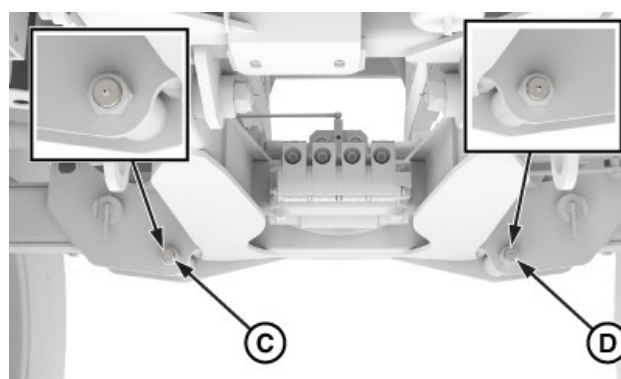
Grease all joints and rotating parts with lubricators periodically.

Front Axle Greasing Points



TG598221—UN—19OCT23

Front Axle Front View

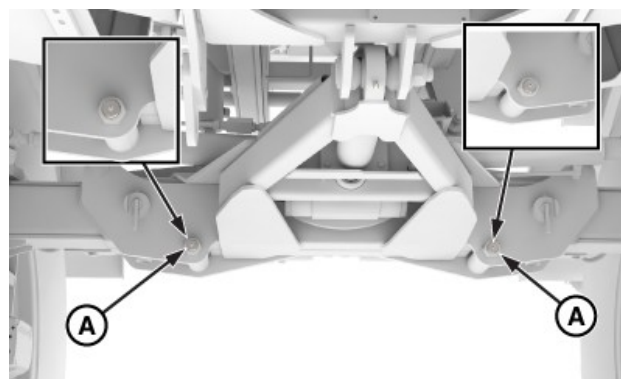


TG598222—UN—19OCT23

Front Axle Rear View

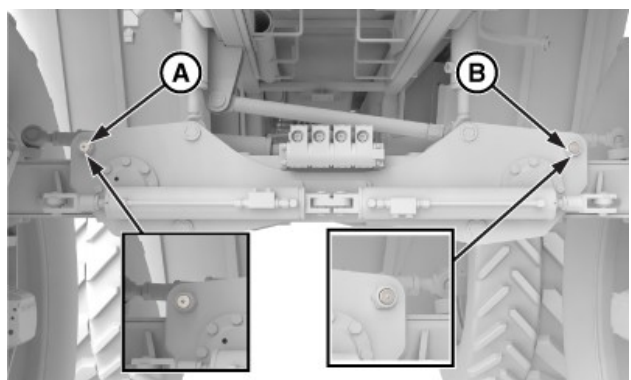
- A—Greasing Point
- B—Greasing Point
- C—Greasing Point
- D—Greasing Point

Rear Axle Greasing Points



TG598227—UN—19OCT23

Rear Axle Front View

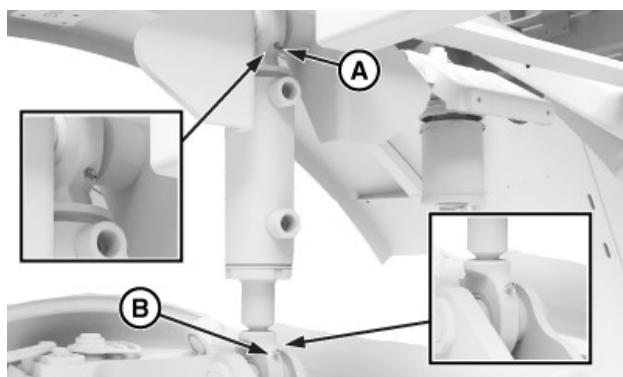


TG598226—UN—19OCT23

Rear Axle Rear View

- A—Greasing Point
- B—Greasing Point
- C—Greasing Point
- D—Greasing Point

Suspension Cylinders Greasing Points

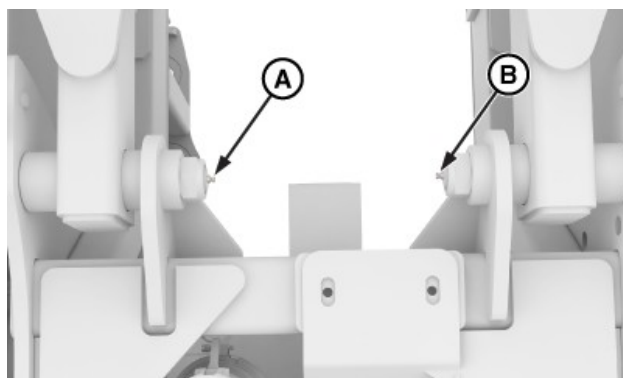


TG598223—UN—19OCT23

- A—Greasing Point
- B—Greasing Point

Each suspension cylinder has two greasing points. One is at the eye mounted on the chassis structure and other on the eye mounted on the axle. Lubricate all the four suspension cylinders periodically.

Greasing Pivot Point for Front Axle Assembly Mount on Chassis

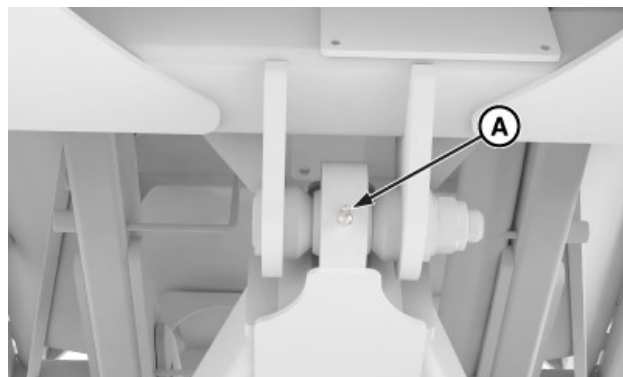


TG598224—UN—19OCT23

- A—Greasing Point
- B—Greasing Point

There are two points for the front axle assembly pivot points mounted on chassis. This can be accessed underneath the machine.

Greasing Pivot Point for Rear Axle Assembly Mount on Chassis

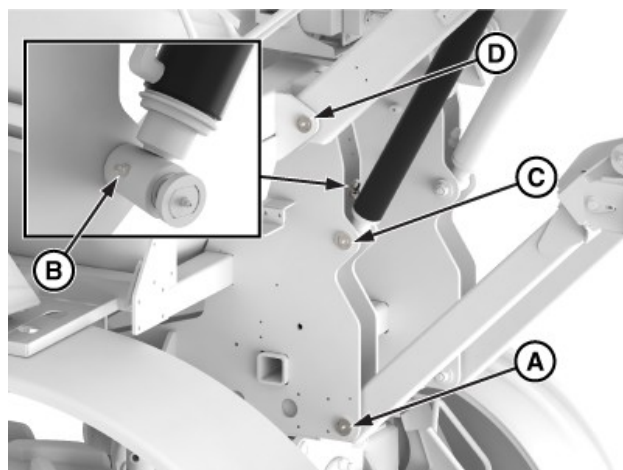


TG598225—UN—19OCT23

- A—Greasing Point

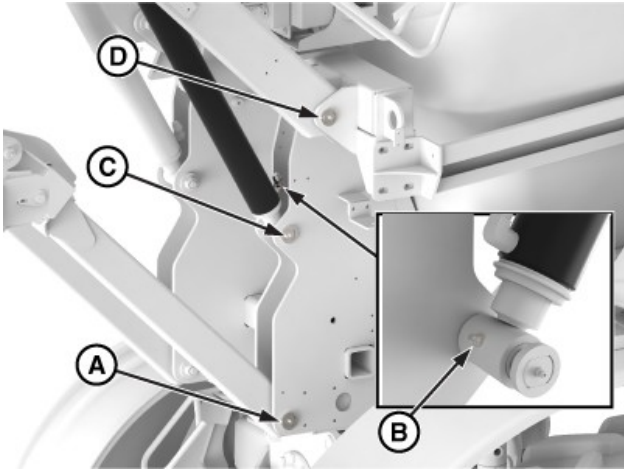
There is one greasing point for the rear axle assembly pivot point mounted on chassis. This can be accessed underneath the machine.

Center Frame Greasing Points



TG598229—UN—20OCT23

Left Hand Side Greasing Points



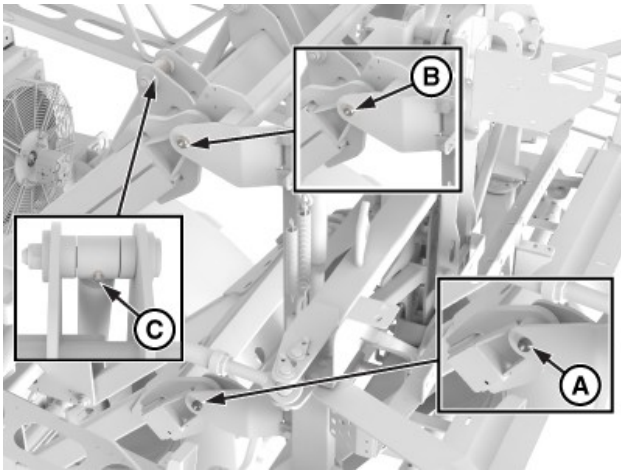
TG598228—UN—20OCT23

Right Hand Side Greasing Points

- A—Greasing Point Center Frame
- B—Greasing Point Boom Lift Cylinder
- C—Greasing Point Center Frame
- D—Greasing Point Center Frame

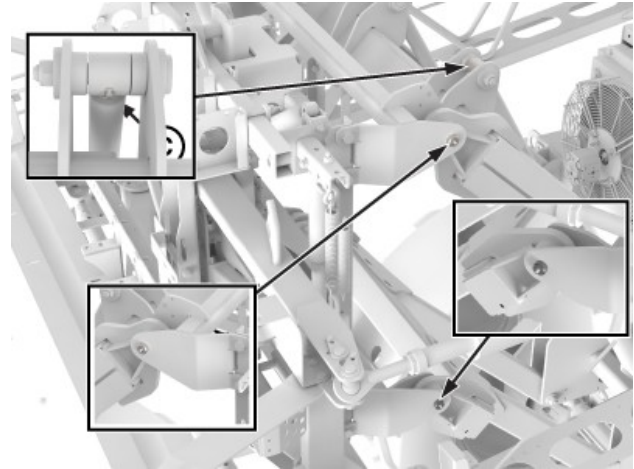
There are four greasing points on the center frame as shown above.

Central Boom Structure



TG598230—UN—20OCT23

Left Hand Side Greasing Points



TG598231—UN—20OCT23

Right Hand Side Greasing Points

- A—Greasing Point Central Boom Structure
- B—Greasing Point Central Boom Structure
- C—Greasing Point Boom Lift Cylinder

There are three greasing points on central boom structure as shown above

awqniwx,1720686135864-19-11OCT24

Diesel Engine Maintenance

Clean or Replace the Engine Air Filters

Clean the cartridges with a compressed air jet at the maximum pressure of 6 bar, aiming the jet from the inside outwards.

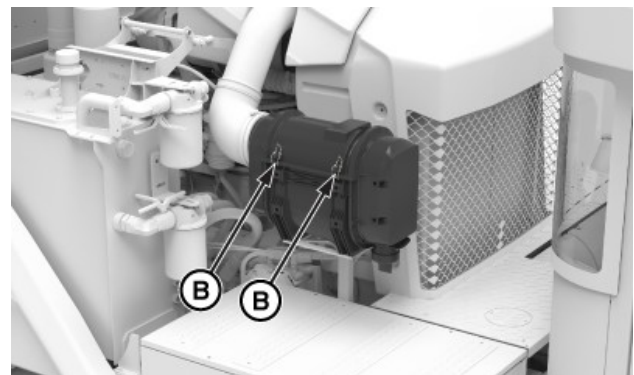
Check that there are no cracks in the cartridge, after inserting a light source.

If damaged, replace them promptly.

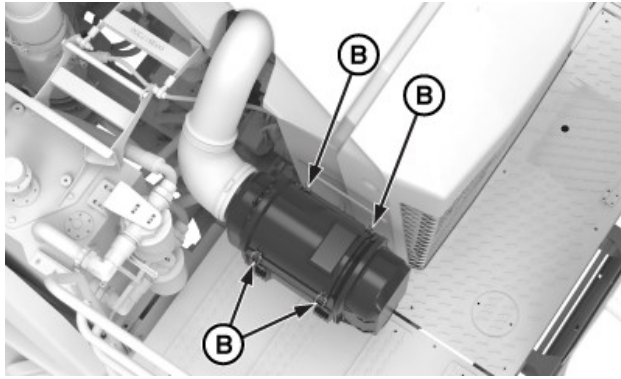
In general, considering the wear level of the filters, it could be necessary to anticipate their replacement times, differently than indicated in the aforementioned booklet.

In order to access the engine filters for the purpose of cleaning or replacing them, it is necessary to:

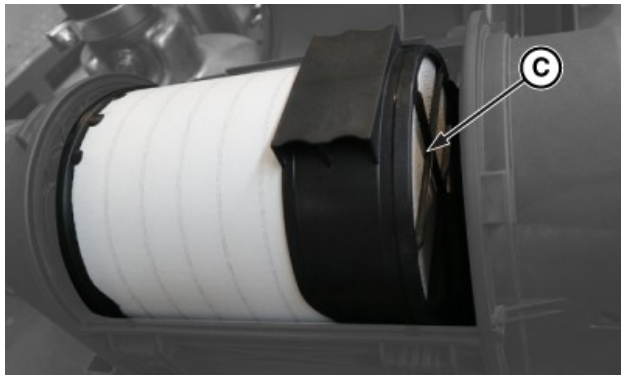
1. STOP the engine.



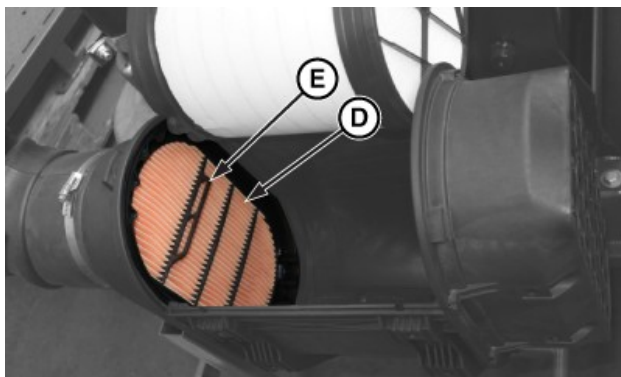
APY85143—UN—31MAY23



APY85144—UN—31MAY23



APY85194—UN—28JUL23



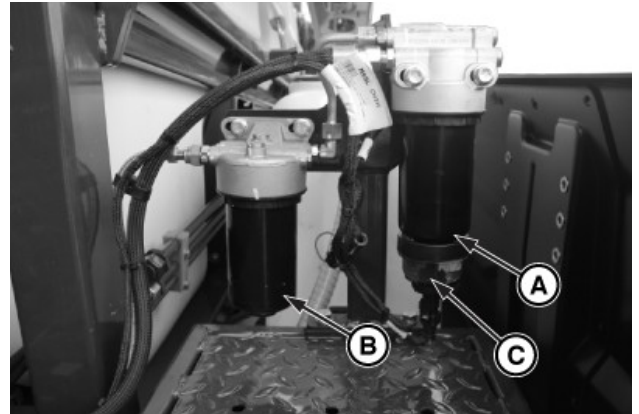
APY85196—UN—28JUL23

A—Cover
B—Closing Hook (4 Used)
C—Primary Filter
D—Secondary Filter
E—Handle

2. Lift cover (A) of the engine hood.
3. Open the closing hooks (B) of the filter housing box.
4. Tilt and remove the primary filter (C).
5. Pull the handle (E) and remove the secondary filter (D).
6. Clean the inside of the two extracted filters, or replaced them as indicated in Maintenance section.
7. Reassemble the second filter (D) by exerting pressure on the joint.
8. Keep the first filter (C).
9. Close the cover of the filter housing box.
10. Close the lift cover (A) on the engine hood.

Check Engine Filters

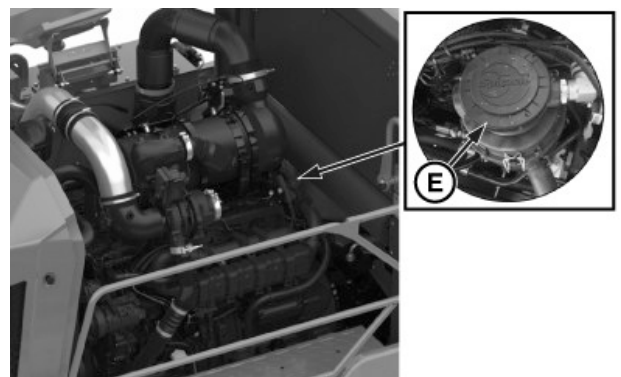
⚠ CAUTION: The image below represents a stage V, that is a John Deere engine in its most complete configuration.



TG659410—UN—03FEB25



TG598974—UN—24OCT23



TG640722—UN—12JUL24

A—Primary Diesel Fuel Filter
B—Secondary Diesel Fuel Filter
C—Decanter Filter
D—Engine Oil Filter
E—OCV (open crankcase ventilation) Filter

If water or sediment deposits have settled in filter, proceed as follows:

1. STOP the engine.
2. Lift the engine hood cover.
3. Loosen the decanter filter (C) drain valve and

additional 3/4 turn. Retighten the plug as soon as water and sediment deposits have drained out.

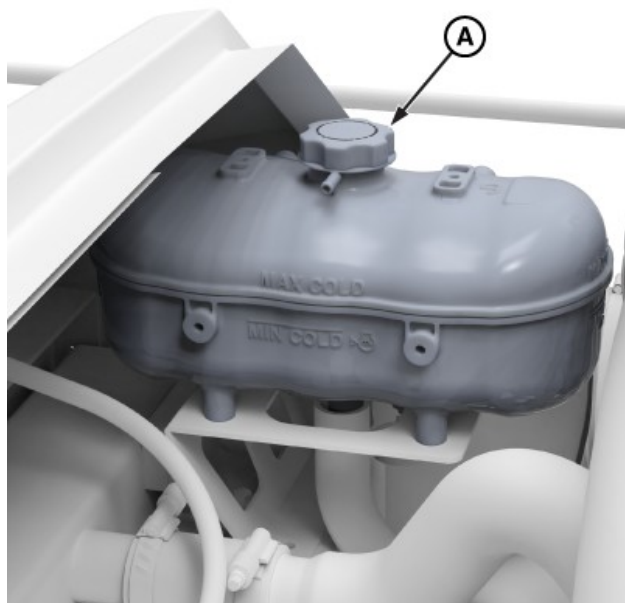
4. Turn key in main switch to the right to the first switch position so that the fuel transfer pump is operating. Keep the pump running for approximately 40 seconds.

For periodic replacement of the filters shown in the image above, refer to the John Deere Engine manual supplied with the machine.

In particular, refer to the service intervals and instructions for replacing:

- Primary diesel fuel filter (A)
- Secondary diesel fuel filter (B)
- Engine oil filter (D)
- Open crankcase ventilation (OCV) filter (E)

Replace or Add Coolant



A—Filler Cap

APY85130—UN—17MAY23

To access the coolant tank, open the engine cover.

Before starting the daily work, wait until the fluid has cooled down/is cold and check that the coolant is between the minimum (MIN) and maximum (MAX) level.

If necessary, add Cool-Gard™ II through filler cap (A).

To fully drain the mixture:

1. Allow the engine to cool.
2. Remove the filler cap (A) and open the drain tap on the bottom of the radiator.
3. Once completely drained, close the tap and add the new antifreeze mixture.

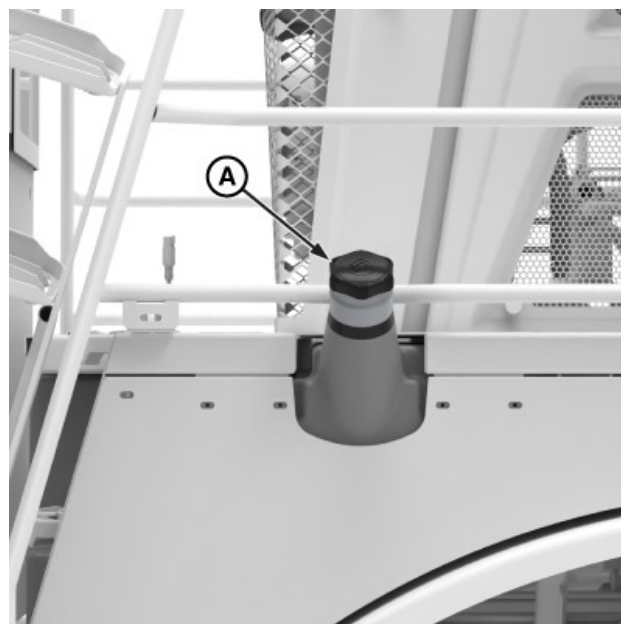
Clean the protective radiator grille daily. Clean any impurities in the radiator fins.

Refuel Tank

CAUTION: Do NOT smoke, while refueling.

CAUTION: Do NOT spill fuel from the tank while filling and ensure it doesn't contact with hot surfaces.

IMPORTANT: Carefully check the specific diesel requirements of the machine, before refilling.



APY85133—UN—17MAY23

A—Cap

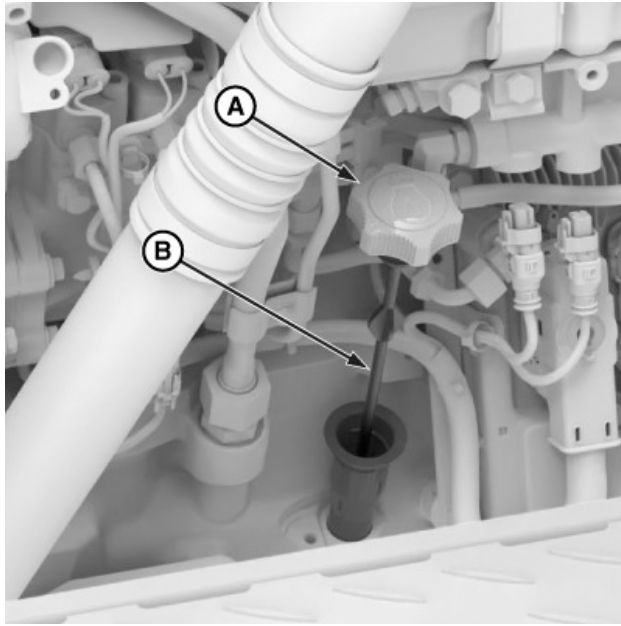
Refuel as follows:

- STOP the machine on a level ground, away from flammable material, then move the arms of the spraying boom to transport position.
- Shut off the engine before filling fuel tank.
- Reach the fuel tank, located behind the cab, and turn cap (A) counter-clockwise and lift to remove.
- Fill the tank then put cap (A) back in place.

Check Engine Oil Level

IMPORTANT: Do NOT operate engine with oil level below the lower mark on dipstick. Do NOT fill oil level above the upper mark on dipstick.

1. Park machine on level ground. STOP engine and remove key.



TG640337—UN—11JUL24

A—Cap
B—Dipstick

2. Loosen cap (A) of the engine.
3. Remove the dipstick (B) and clean oil from dipstick.
4. Insert the dipstick and check oil level on dipstick.
5. Oil level is adequate if level is between marks on dipstick.
6. If oil level is below the lower mark, then add engine oil and recheck until level is adequate. See Lubricants and Coolants section.

After long storage period

Check whether dirt or other foreign bodies have collected under the hood. If dirt or other foreign bodies are present, remove them.

Fill Diesel Exhaust Fluid (DEF) Tank

CAUTION: Avoid serious injury from falling. Do NOT stand on fuel tank. The diesel exhaust fluid (DEF) contains urea. Do NOT get the substance in eyes. In case of contact, immediately flush eyes with large amounts of water for a minimum of 15 minutes. Do NOT take internally. In the event DEF is ingested, contact a physician immediately. Reference materials safety data sheet (MSDS) for additional information.

IMPORTANT: Never put DEF in diesel fuel tank, or diesel fuel in DEF tank.

NOTE: Spilled DEF, if left to dry or if only wiped away with a cloth, leaves a white residue. Aside from cosmetic issues, an improperly cleaned DEF spill may interfere with diagnosis of selective catalytic reduction (SCR) system leakage problems.

IMPORTANT: If an unapproved fluid, such as diesel fuel, or engine coolant is added to vehicle DEF tank, drain and rinse tank.

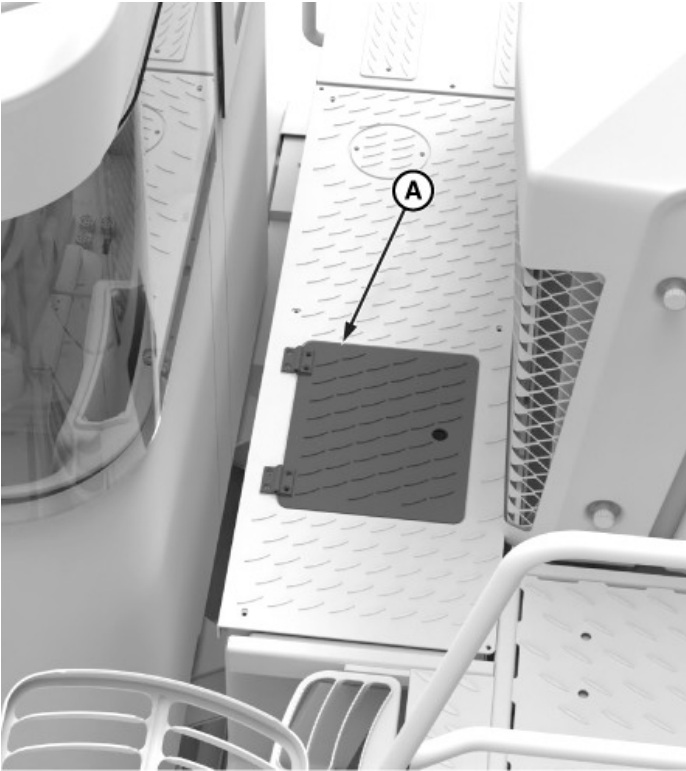
Fill DEF tank to the specification.

Specification	
DEF Tank—Capacity.	19 L (5 gal)

Fill tank every time machine is refueled. Otherwise, monitor diesel exhaust fluid (DEF) level indicator activates primary display unit, refill as required.

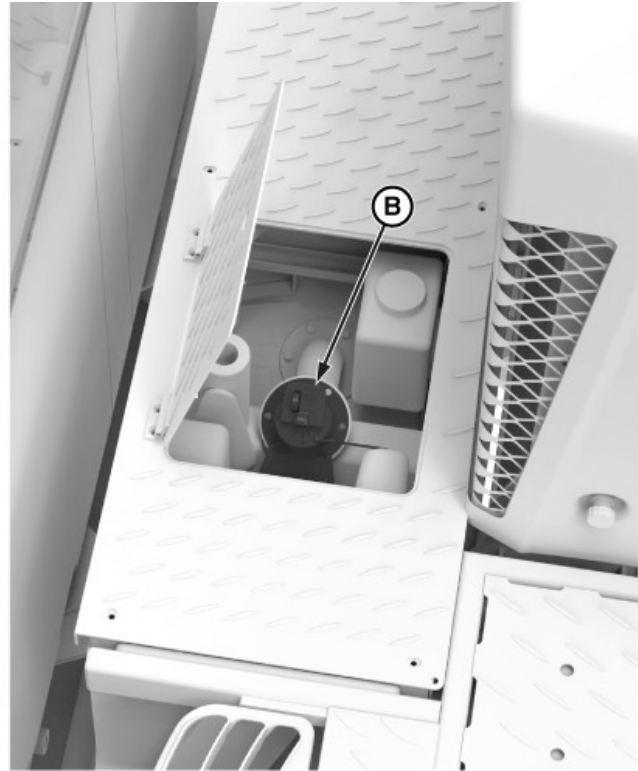
To avoid drastic changes in machine performance, always keep DEF level above topmost red mark on level indicator. See Operating the Machine section.

To fill DEF tank:



A—DEF Tank Cover

1. Before using containers, funnels, etc. to dispense DEF, wash and rinse items thoroughly with distilled water to remove contaminants.
2. Pull out on DEF tank cover (A) to access DEF tank.
3. Wipe DEF tank cap (B) and areas around filler neck to reduce chance of contaminating DEF.



TG640340—UN—11JUL24

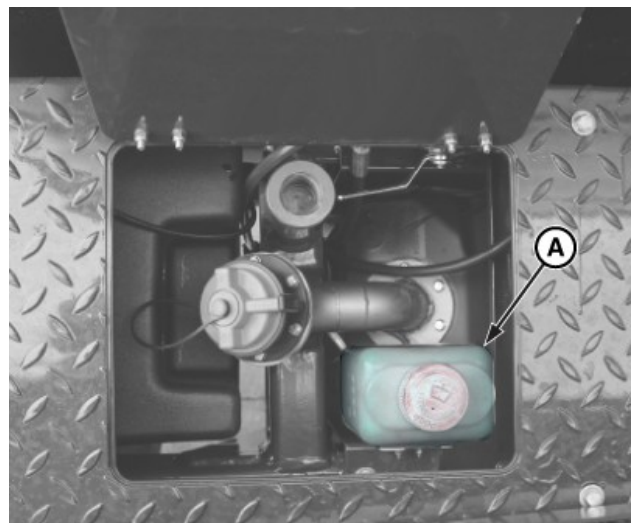
B—DEF Tank Cap

4. Remove DEF tank cap (B).
5. Using funnel, carefully pour DEF into tank, watching level through filler neck.
6. Securely tighten DEF tank cap (B).
7. Carefully clean any spills, using distilled water only.

awqniwx,1720686242967-19-03FEB25

Top Up Washer Fluid

⚠ CAUTION: Use suitably diluted concentrated or ready-to-use solution. In particularly harsh climates, an antifreeze solution is recommended.



APY85193—UN—28JUL23

A—Washer Fluid Tank

To add the windshield washer fluid tank, proceed as follows:

1. Remove the cap from washer fluid tank (A) accessible from behind the cab or in front of the engine.
2. Add a specific window cleaner product.
3. Close the cap.

awqniwx,1720686119914-19-11JUL24

Wheels and Tires

IMPORTANT: If want to install different tires other than those mounted on the machine, (even for those listed in the homologation booklet) it is mandatory to request specific written authorization to John Deere technical office.

Without this authorization, John Deere will not be liable for any consequent anomalies, breakdowns or personal injury.

CAUTION: Over-inflated or overheated tires could explode. Do NOT cut or weld on the wheel rims. For any repairs, contact a specialist technician.

CAUTION: In the case of replacement of tires, use only the measures provided for in the road registration document, ensuring that the load indices and all the technical characteristics corresponding to the wheels originally mounted on the machine are checked.

CAUTION: Do NOT use the machine with very deflated tires to avoid consuming the tread in an abnormal way.

IMPORTANT: When replacing a wheel, perform the axle lifting procedure described in the Operator's Manual.

IMPORTANT: It is the user's responsibility to verify that the tires comply with the weight of the laden vehicle and the speed of circulation. If machine weight exceeds the tires specification, the vehicle could run on the road in a reduced gear.

When inflating or replacing the tires, follow the indications in the table.

Tires Models	MAF 32	MAF 40	Index	Brand	Diameter (mm)	Section (mm)	Inflation Pressure (Bar)
270/95R48 VF	✓	✓	155D	ALLIANCE Agriflex +363	1605	284	3.6
320/90R46 IF	✓	✓	155D	ALLIANCE TL	1744	320	3.6
340/85R46	✓	✓	151A8	ALLIANCE 350 TL	1760	340	3.6
380/90R46		✓	165A8	ALLIANCE 842	1863	380	4.9
650/60R38 VF		✓	155D	MICHELIN XEOBIB	1735	677	1
380/80R38	✓	✓	149D	ALLIANCE TL	1595	398	2.4
380/95R38	✓		159D	ALLIANCE AGRIFLEX	1687	390	2.4
540/65R38	✓	✓	153/D	ALLIANCE 365	1667	540	2.4

In new machines, whenever a wheel is removed or replaced, check the tightness of the wheel nuts at every 2 hours until it completely settled.

Tighten the nuts of poclain engines to the specifications.

Item	Measurement	Specification
Nuts of Poclain with MS08 HF	Capacity	600 N·m (M20 X 1,5 cl. 10.9)

Item	Measurement	Specification
Nuts of Poclain with MHP11	Capacity	1000 N·m (M22 X 1,5 cl. 12.9)

awqniwx,1720686184738-19-11OCT24

Adjust Toe-in



Uncorrected

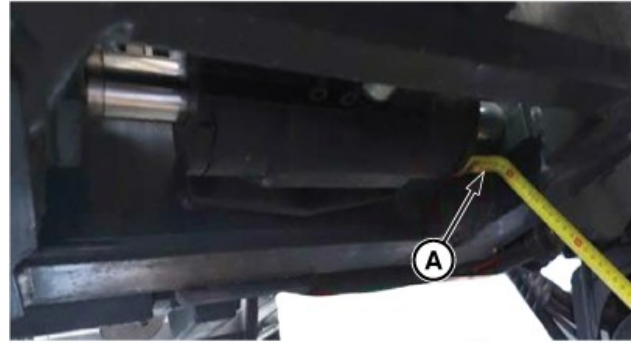
TG654508—UN—24NOV24



TG659400—UN—09JAN25

A—Two-Wheel Steering

1. Execute the front steering from left to right to ensure that the end stroke is reached and bled through.
2. Open and close the front and rear tread adjust cylinders a few times.
3. Ensure that the tread adjust cylinder is completely opened when starting this procedure.
4. Make sure the machine is in two-wheel steering mode (A) so that the rear axle is in the straight position.



TG654510—UN—24NOV24

A—Rod Length

5. Start at the data point, beginning with the rear axle at the rear steering ram.
6. Ensure that the ram has equal lengths of rod (A), with a tolerance of ± 1 mm.



TG654511—UN—24NOV24

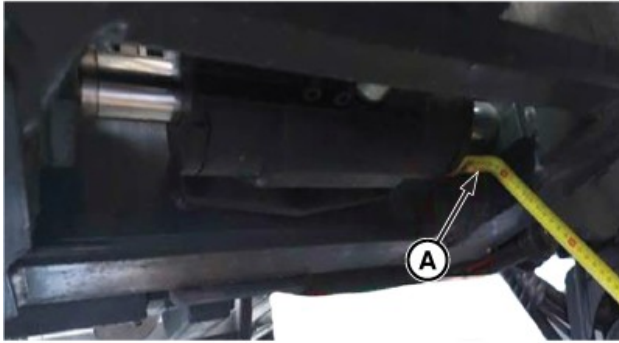


TG659401—UN—09JAN25

A—Sensor

B—Rear Steering in Center Position Signal Lamp

7. Alter the position sensor on the steering ram.
8. The yellow light rear steering in center position signal lamp (B) will illuminate on the Terra10 screen.
9. This provides a good visual indication moving forward to know that the steering is nearly central.



TG654510—UN—24NOV24

A—Rod Length

10. Now adjust the front steering cylinder.
11. Ensure that the ram has equal lengths of rod (A), with a tolerance of ± 1 mm.



TG654511—UN—24NOV24

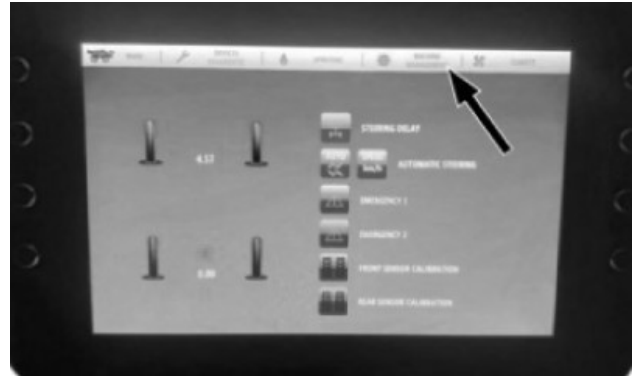


TG659402—UN—09JAN25

A—Sensor

B—Front Steering in Center Position Signal Lamp

12. Alter the position sensor on the steering ram.
13. The green light front steering in center position signal lamp (B) will illuminate on the Terra10 screen.
14. This provides a good visual indication moving forward to know that the steering is nearly central.
15. Once both steering rams have been adjusted, it is mandatory to set the center position for both wheel angle sensors.

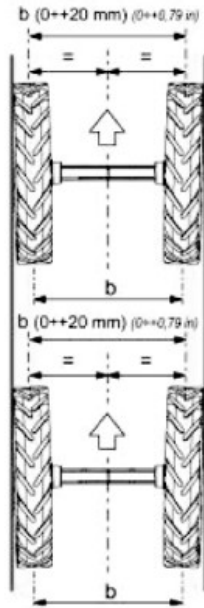


TG659403—UN—09JAN25

16. To execute the calibration, select **Machine Management** and then **Steering**.
17. Save the center position for the front sensor.
18. Save the center position for the rear sensor.
19. Ensure that only the center position is saved.
20. After saving the center positions, check that the readings from both sensors are near 0° .
21. Fully open track adjustment cylinders on both sides (front and rear).



TG654731—UN—24NOV24



TG654732—UN—24NOV24

22. String a line from the front to the rear.
23. Check the toe-in measurement; it should be no more than 20 mm from front to rear.



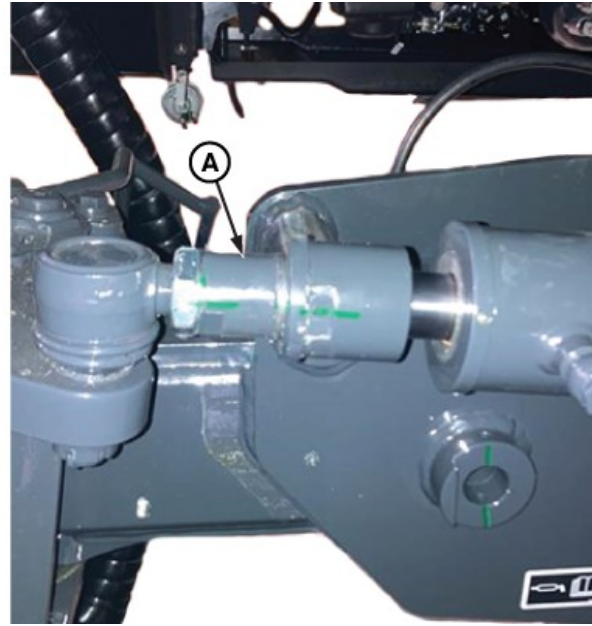
A—Nut

TG654733—UN—24NOV24

24. If it is necessary to adjust the toe-in, slightly close the track adjustment cylinders (we suggest closing the rod by approximately 2 cm to relieve pressure in the system) and work on the tie-rod heads.

NOTE: A small amount, such as one turn, is a significant adjustment.

25. Once everything has been adjusted, fully close the track, then fully open the cylinders again, and check if the toe-in is correct.
26. If everything is fine, ensure that all the nuts are completely tightened.
27. If everything is fine, the toe in procedure is finished. Otherwise, it is necessary to work on the bushings.



TG654734—UN—24NOV24

A—Bushing

28. Slightly open the track to relieve pressure in the system, then screw or unscrew the bushing (A) as needed.
29. Once everything has been adjusted, tighten all the parts securely, and the procedure will be complete.

awqniwx,1734001277450-19-09JAN25

Mechanical Differential Axle

Power train is composed of axle body and planetary gearbox.

Axle Body

Axle body is composed of spiral bevel gear and pinion. The axle is made up by three parts: central casing, and steering side bodies. The above mentioned parts are connected to the steering axle body by means of screws.

Planetary Gearbox Spur Gears

The planetary gearbox is made up by one annular gear and one planetary carrier. The annular gear is integral to the hub for planetary annulus gear splined on the Spindle. The spindle is connected to the external half articulation through screws. The external half articulations are connected to the steering drive bodies by means of articulation pins. The driving torque, when entering into the transmission flange splined to the bevel pinion is transmitted to the ring bevel gear. This last one, being fixed by screws, it will transmit the driving torque to the differential casing.

The driving torque then will be transmitted to the universal joints with drive shafts. These last ones will transmit the driving torque to the planetary gearboxes which are integral to the wheel hubs.

Differential locking

The control of this disengagement is hydraulic and mechanical and it is equipped with a switch that detect the engagement and disengagement positions of the clutch sleeve. The hydraulic oil must be kept at a constant pressure of max 30 bar.

When single-acting hydraulic control is turn on, it is necessary to comply with the following instructions:

- Locking phase: Transfer pressure to the hydraulic control of the clutch sleeve. If the pilot light, which is connected to the related position switch and signals the occurred engagement, would not switch on, it will be necessary to turn very slowly the transmission flange in order to make the engagement easy.
- Unlocking phase: Take pressure away from the hydraulic control of the clutch sleeve. In this way the spring will turn the clutch sleeve in disengagement position. If the pilot light, which is connected to the related position switch and signals the occurred engagement, would not switch off, it will be necessary to turn very slowly the transmission flange in a clockwise or anti-clockwise direction in order to remove any pressures on the engaged teethings, making in this way the operation easier.

Regular checking of oil levels

Check the oil level weekly.

Axle Body

- Oil level can be checked by removing the oil level gauge located on the steering axle body. Await some minutes after the axle stopping, in order to settle the oil level.
- Check the level with the axle in horizontal position and with warm oil.
- Level should be kept on the lower edge of the level indicating hole. If level results to be inadequate, make toppings up.
- Remove the filling plug located on the axle body. Add the prescribed oil until required level is reached.
- Remount the filling plug and the level one then clamp to the prescribed torque.

Planetary Gearboxes

- The oil level can be checked by removing the plugs and the gaskets located on the planetary gearboxes.
- Await some minutes after the axle stopping, in order to settle the oil level
- Check the level with the axle in horizontal position and with warm oil.
- Level should be kept on the lower edge of the level indicating hole. If level results to be inadequate, make toppings up.
- Remove the plugs and the gaskets. Add oil till the prescribed oil level is reached

- Remount the plugs as well as the gaskets and then clamp to the prescribed torque.

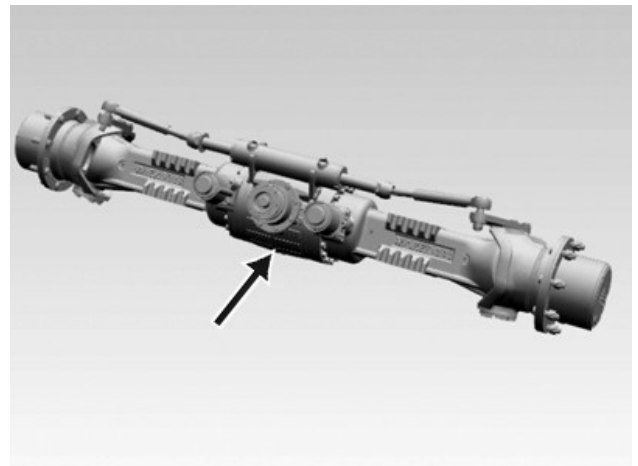
Oil Replacement

NOTE: This operation should be made with warm oil. As a matter of facts, in these conditions oil is more fluid and its draining is quicker and complete.



TG532003—UN—12APR22

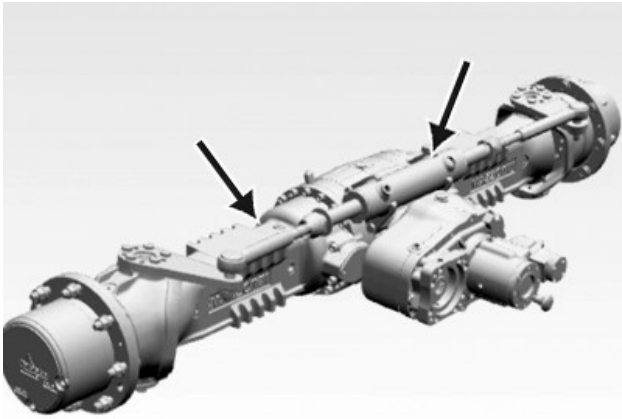
Magnetic Drain Plug - Front Axle



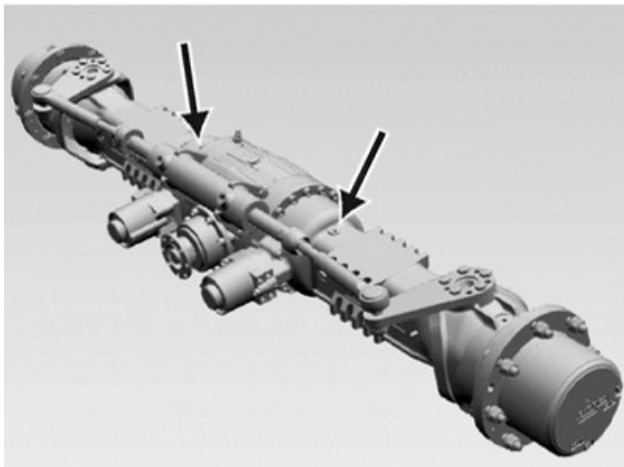
TG532002—UN—12APR22

Magnetic Drain Plug - Rear Axle

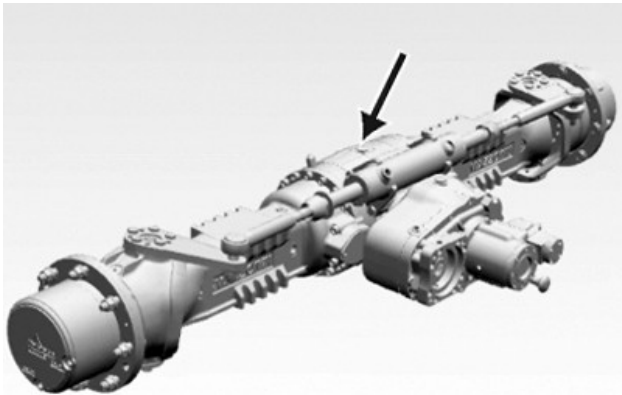
- For axle body remove the magnetic drain plug and the gaskets from central casing. Then drain used up oil.
- For planetary gearbox remove the plugs and the gaskets from the planetary gearbox. Then drain used up oil



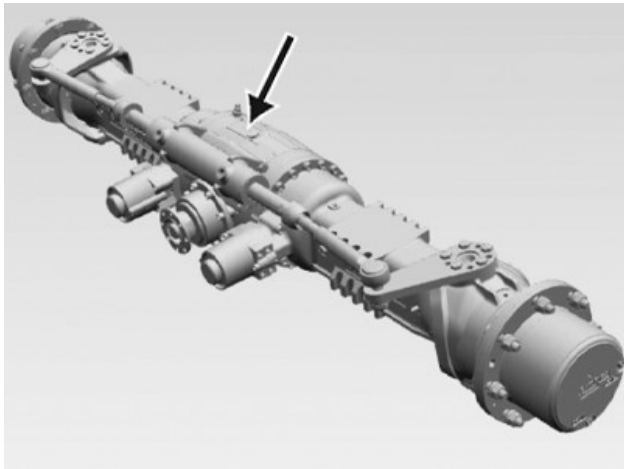
TG531998—UN—12APR22
Planetary Gearbox Filling Points



TG532001—UN—12APR22
Planetary Gearbox Filling Points



TG531999—UN—12APR22
Axle Body Filling Point



TG532000—UN—12APR22
Axle Body Filling Point

- To fill the front axle with oil, use the plugs shown with the specified capacities.

- To fill the rear axle with oil, use the plugs shown with the specified capacities.

Item	Measurement	Specification
Front Axle		
Axle Body	Capacity	9 L 2.37 gal
Shifting Gear	Capacity	3.5 L 1.71 gal
Planetary Gearboxes	Capacity	1.25 L (each) 0.33 gal (each)

Item	Measurement	Specification
Rear Axle		
Rear Body	Capacity	13 L 3.43 gal
Planetary Gearboxes	Capacity	1.25 L (each) 0.33 gal (each)

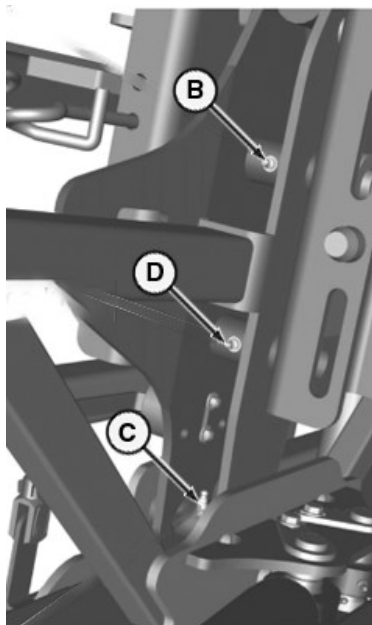
VK06011,00008E6-19-24JAN25

24—30 m HC Spray Boom

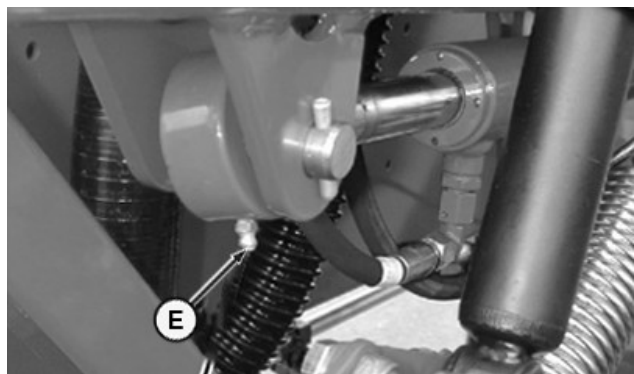
Maintenance

Lubricating points

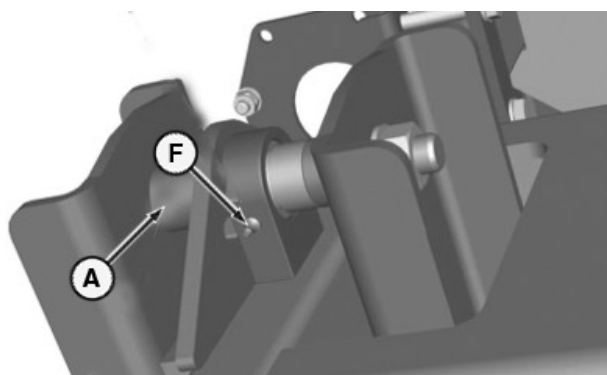
All grease nipples can be filled with a quality brand universal grease type. Use a mechanical grease pump. Two injections per grease nipple are sufficient.



APY64426—UN—23JUL21



APY64427—UN—23JUL21



APY64428—UN—23JUL21

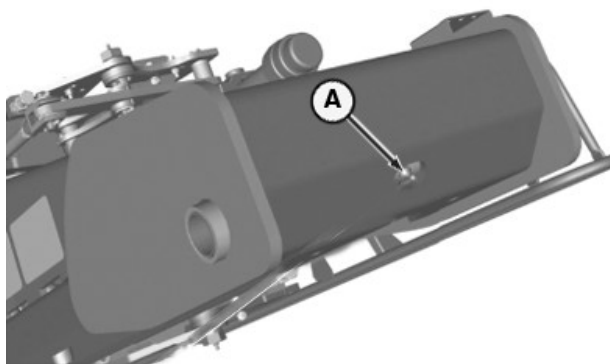
A—Highest Pin Joint
B—Centre-Most Pin Joint
C—Lowest Pin Joint
D—Locking Point

E—Hydraulic Slope Correction
F—Grease Nipple

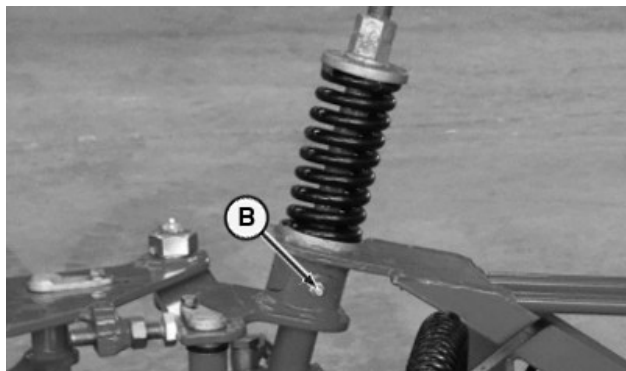
- At the highest pin joint (A) of the pendulum suspension where the pendulum is connected to the lifting frame.
- At the centremost pin joint (B) of the pendulum suspension where the pendulum is connected to the middle section.
- At the lowest pin joint (C) where the crank is fastened to the middle section.
- At the point of attachment of the hydraulic cylinder of the hydraulic slope correction (E).
- At the attachment points of folding cylinders.
- At the attachment points of the buffer cylinders.
- At the pin joint of the middle of spray boom.
- With the upper and lower hinge points of the spray boom parts.
- At the lowest bearing of the impact protection.

1. Grease the guides of the middle section and the lifting frame.
2. Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.

NOTE: Use grease that will not dry out and become hard. That will prevent damage to cylinder oil seals.



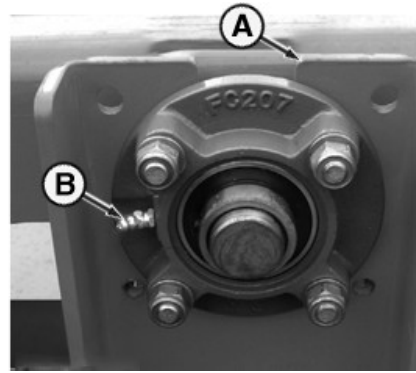
APY64430—UN—23JUL21



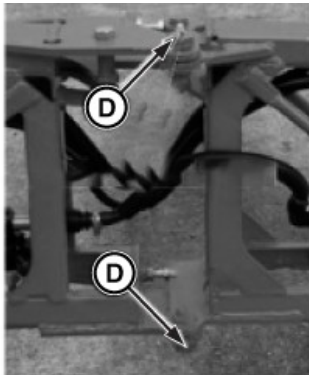
APY64431—UN—23JUL21



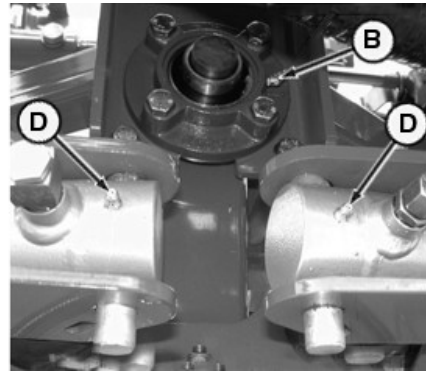
APY64432—UN—23JUL21



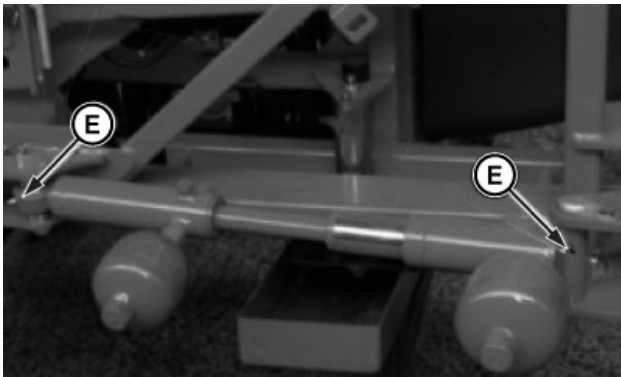
APY64450—UN—31JUL21



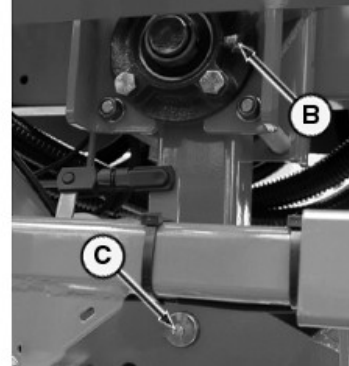
TG598737—UN—23OCT23



APY64451—UN—05AUG21



TG598738—UN—23OCT23



APY64452—UN—05AUG21

- A—Lowest Attachment Point
- B—Safety Tip End
- C—Guide
- D—Pin Joint of Spray Boom Section
- E—Buffer Cylinder

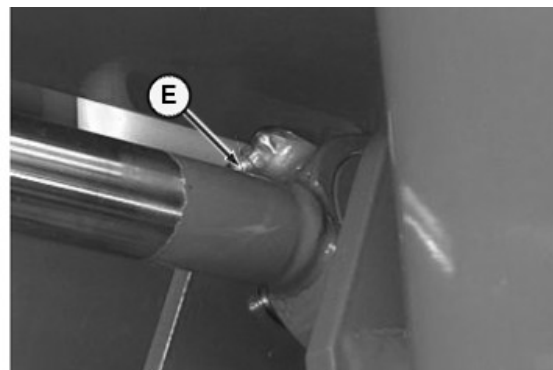
awqniwx, 1734603711366-19-19DEC24

24—36 m HSA-HSS Spray Boom

Maintenance

Lubricating Points

All grease nipples can be filled with a quality brand universal grease type. Use a mechanical grease pump. Two injections per grease nipple are sufficient.



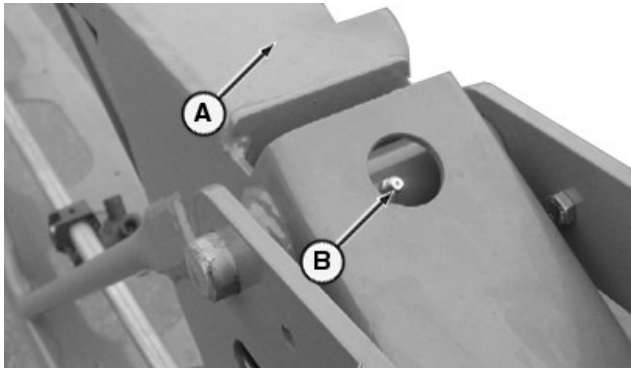
APY64453—UN—05AUG21

- A—Highest Pin Joint
- B—Centermost Pin Joint
- C—Lowest Pin Joint
- D—Fold Cylinders of Innermost Spray Boom Parts
- E—Hydraulic Slope Correction

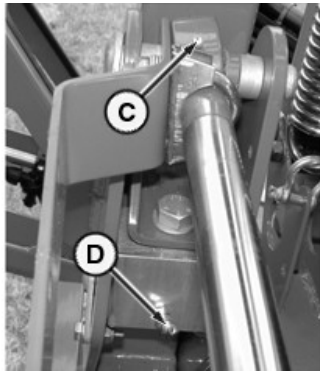
- At the highest pin joint (A) of the pendulum

suspension where the pendulum is connected to the lifting frame.

- At the centermost pin joint (B) of the pendulum suspension where the pendulum is connected to the middle section.
- At the lowest pin joint (C) where the crank is fastened to the middle section.
- At the point of attachment of the hydraulic cylinder of the hydraulic slope correction (E).



APY64454—UN—06AUG21

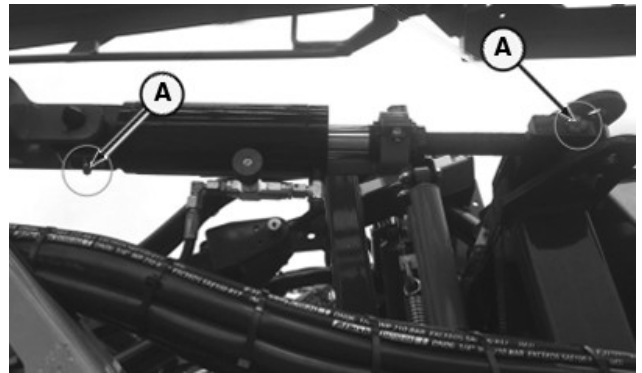


APY64455—UN—05AUG21

A—Locking Arm Pendulum
B—Uppermost Point of Attachment
C—Ball Eye Cylinder
D—Lowest Attachment Point

- At the points of attachment of the hydraulic cylinders before the innermost spray boom parts are folded in.
- With the ball eye cylinders (C) and the lowering of the locking arms or locking arm pendulum lowered (A).

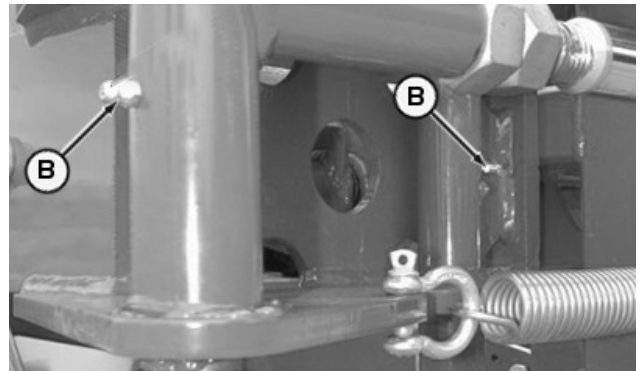
HSS Spray Boom



APY64456—UN—05AUG21

A—Cylinder's Independent Slope Correction

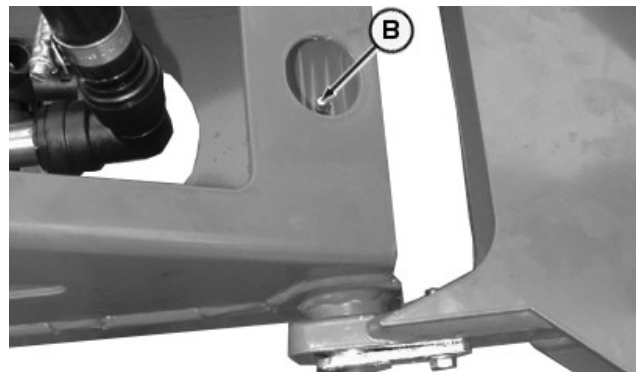
- At the cylinder's independent slope correction (A).



APY64457—UN—05AUG21

B—Horizontal Pin Joint

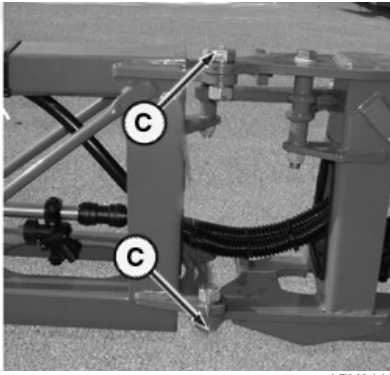
- At the horizontal pin joint (B) in the middle of spray boom.



APY64459—UN—06AUG21

B—Vertical Pin Joint

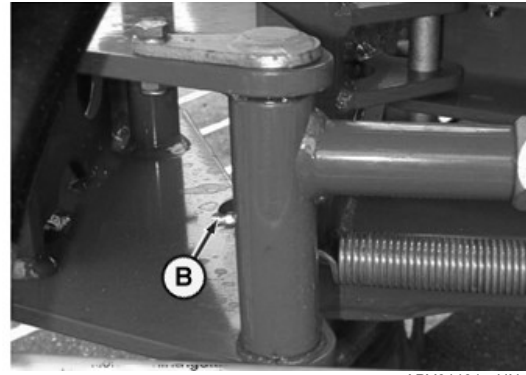
- At the vertical pin joint (B) of the spray boom halves.



APY64460—UN—05AUG21

C—Hinge Point of Outermost Spray Boom Part

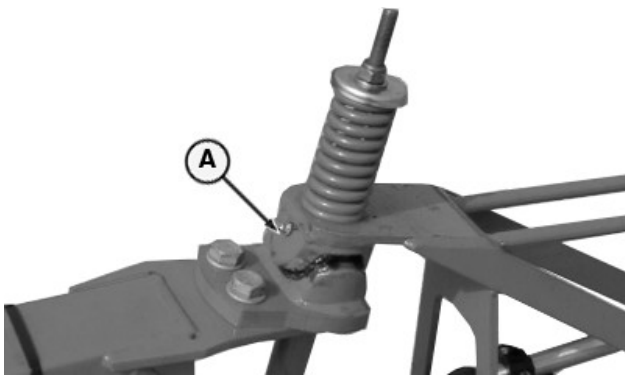
- With the upper and lower hinge point of outer most spray boom part (C).



APY64464—UN—02AUG21

B—Horizontal Hinge Shaft

- Horizontal hinge shaft (B) of boom parts.

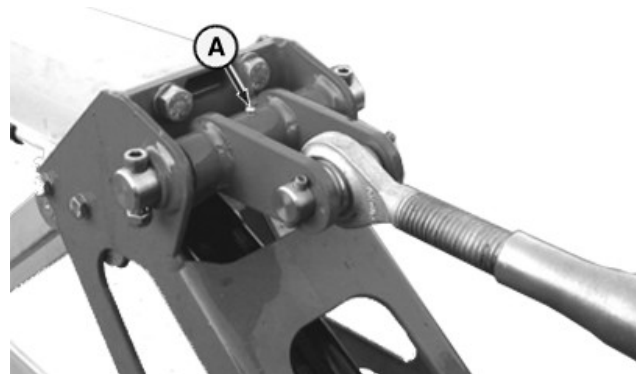


APY64458—UN—06AUG21

A—Impact Protection

- At the lowest bearing of the impact protection (A).

NOTE: Grease the guides of the middle section and the lifting frame.

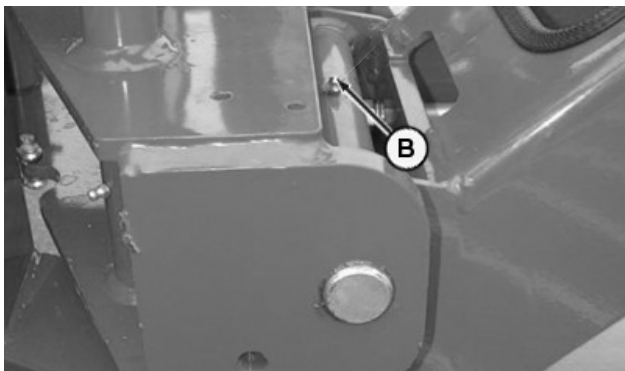


APY64463—UN—06AUG21

A—Coupling Point of the Boom Parts

- Coupling point of the boom parts (A).
- Folding cylinder hydraulic coupling points.
- Axle between innermost and outermost side plate.

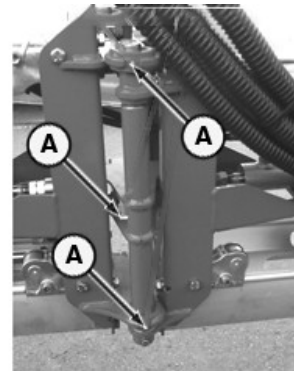
HSA Spray Boom



APY64462—UN—05AUG21

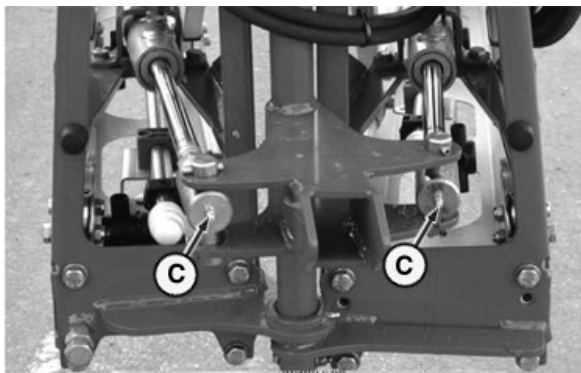
B—Vertical Hinge Shaft

- Vertical hinge shaft (B) of boom parts.



APY64461—UN—05AUG21

A—Hinge Point of Outermost Spray Boom Part



APY64465—UN—02AUG21

C—Folding the Coupling Point of the Boom Parts

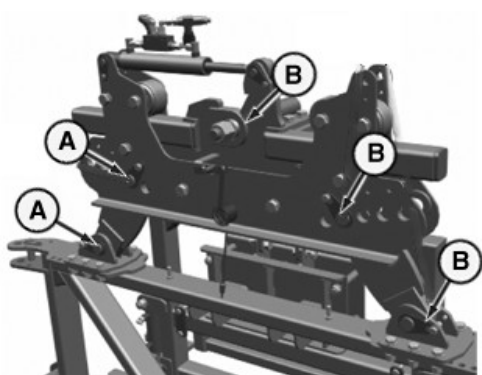
A—Hinge Points

B—Hinge Points

There are lubrication points in the flat land balancing.

awqniwx,1734603845751-19-19DEC24

Flat Land Balancing



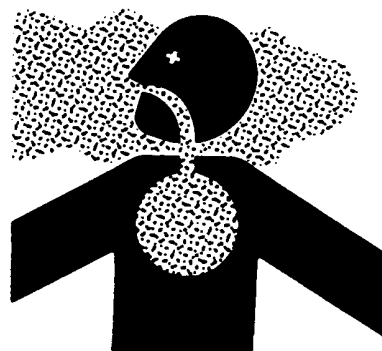
APY64466—UN—02AUG21

Maintenance—Individual Nozzle Control and Individual Nozzle Control Pro

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.

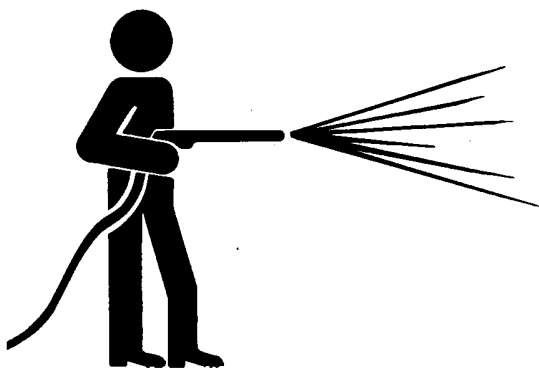
Reduce risk of exposure and injury:

- 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.

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.

Clean Solution System



WZ290102608—UN—10APR17

Rinse Button - One Rinse Cycle

A—Rinse Button

Clean the **Solution System** either with the **Rinse Button** on the **Operator Station** or with **System Rinse** menus on the display.

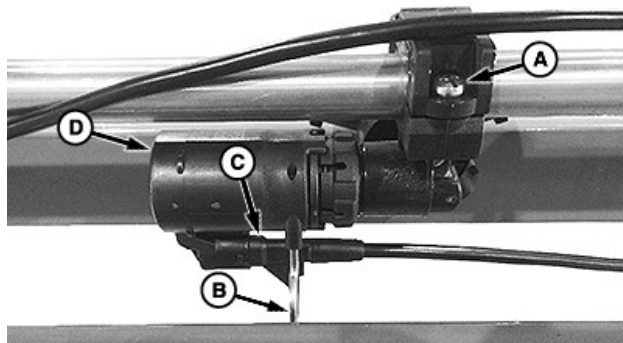
For further information, see:

- **Rinse Button** in the **Wet System** section or
- **System Rinse** in the Gen4 Sprayer Control System section

Remove and Install Individual Nozzle Control (INC) or Individual Nozzle Control Pro (INC Pro) Holder (5-Way)

CAUTION: Spray lines can contain liquid with crop protection chemicals. Wear appropriate personal protection equipment.

Catch any escaping liquid and dispose of it properly.



WZ290913324—UN—09JUN20

A—Slotted Screw
B—Clip
C—Electrical Connector
D—Solenoid

1. Remove clip (B).
2. Disconnect electrical connector (C) and remove solenoid (D).
3. Remove slotted screw (A) and the nozzle holder.
4. Install in reverse order of removal.

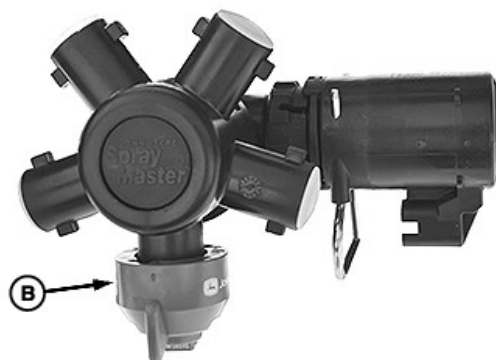
Disassemble and Assemble Individual Nozzle Control (INC) or Individual Nozzle Control Pro (INC Pro) Holder (5-Way)

To disassemble and assemble the INC or INC Pro holders, several special tools and other materials are required. See your John Deere dealer or other service provider for more information on special tools and other materials.

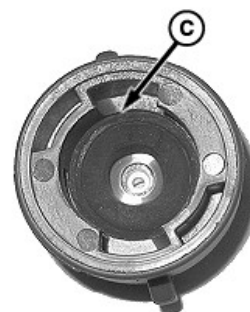
1. Remove nozzle holder.



WZ290901222—UN—08JAN10



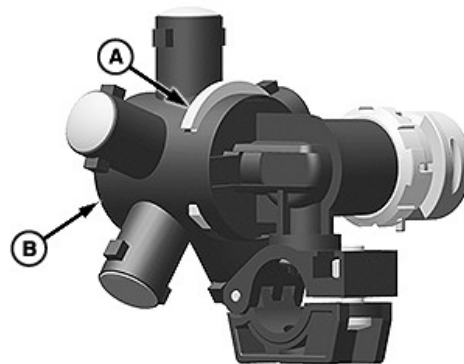
WZ290913325—UN—10JUN20



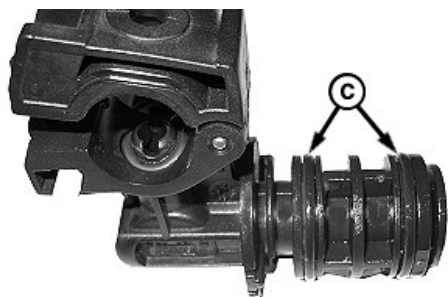
WZ290901225—UN—08JAN10

A—O-Ring
B—Nozzle Cap
C—Seal

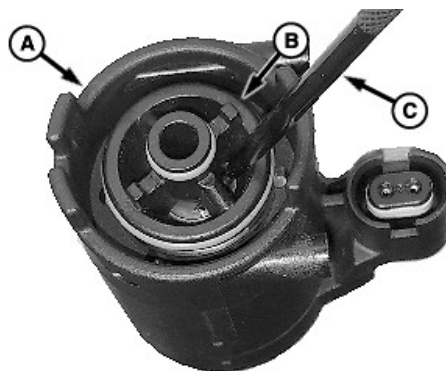
2. Remove O-ring (A).
3. Remove nozzle cap (B).
4. Remove seal (C). Repeat steps for remaining nozzle caps.



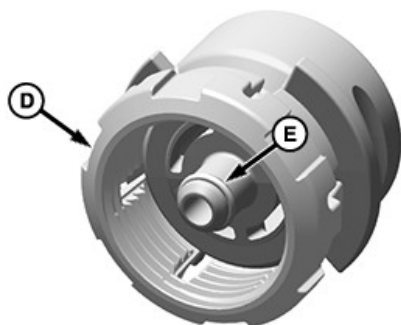
WZ290913326—UN—10JUN20



WZ290913327—UN—10JUN20



N128221—UN—24FEB17



WZ290913933—UN—12NOV20

A—Clip
B—Housing
C—O-Ring (2 used)
D—Solenoid Adapter
E—O-Ring

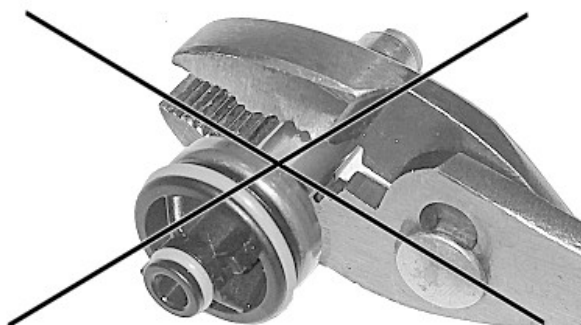
5. Remove clip (A) and housing (B).
6. Remove O-rings (C).
7. Remove solenoid adapter (D).
8. Remove O-ring (E) and adapter outer O-ring.

IMPORTANT: Do not use a channel lock or pliers on the tube of the cartridge.

When pulling cartridge out of solenoid with hook pick, make sure to hook it under the spoke. Do not damage the sealing surface of the valve seat.

NOTE: PT21225 Offset Hook, AKK21854 Cartridge Wrench, and AKK27249 Torque Wrench are included in Nozzle Kit AKK23253.

NOTE: These additional parts are required during maintenance of the INC, 5MZ4302187 Torque Wrench (2—10 N·m), 5MZ0822586 INC Wrench Head, and 5MZ0813906 INC Wrench Socket.

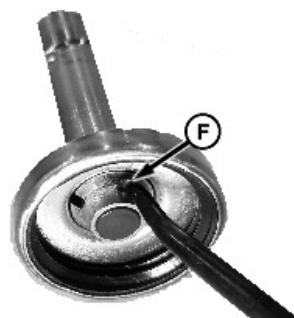


N125077—UN—24FEB17

Incorrect



N128223—UN—24FEB17



N128222—UN—24FEB17

A—Solenoid
B—Cartridge Assembly

C—Offset Hook
D—Torque Wrench
E—Cartridge Wrench
F—Hole (if applicable)

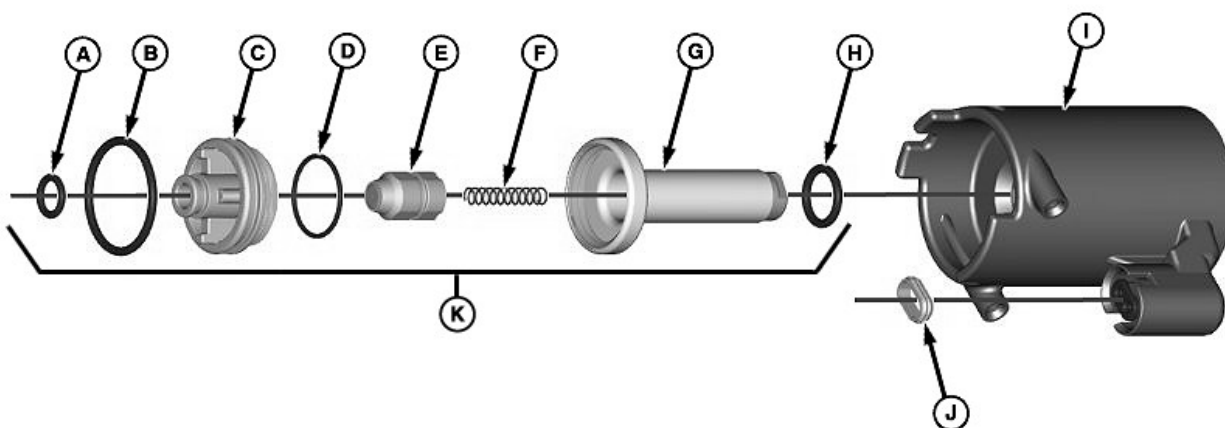
Remove cartridge assembly (B) from solenoid (A). When a cartridge does not pull out by hand, use PT21225 Offset Hook (C). Insert the Offset Hook into a quadrant in the valve seat.

1. Install cartridge into the AKK21854 Cartridge Wrench (E) and align flats.
2. Install AKK27249 Torque Wrench (D) onto the valve seat.

3. Turn valve seat counterclockwise to remove from cartridge assembly.
4. Remove plunger and spring. If necessary, insert PT21225 Offset Hook into a hole (F) in the plunger.

IMPORTANT: Do not soak the solenoid (I) in spray cleaner solution.

NOTE: Dilute Erase™ Spray System Cleaner per label instructions.



A—O-Ring
B—O-Ring
C—Valve Seat
D—O-Ring
E—Plunger
F—Spring

G—Tube Assembly
H—O-Ring
I—Solenoid
J—Harness Connector Seal
K—Cartridge assembly

N128220—UN—27FEB17

5. After valve seat (C) is removed from cartridge assembly (K), the remaining parts can be soaked in Erase™ Spray System Cleaner or an equivalent cleaner, to aid in disassembly.
6. Disassemble remaining parts (A), (B), (D), (E), (F), (G), and (H).

IMPORTANT: Always use new O-rings. Damaged or used O-rings leak.

NOTE: Do not apply any lubricant to cartridge O-rings when reassembling.

7. Inspect parts for wear or damage, replace as needed.

IMPORTANT: AKK27249 Torque Wrench must be used when tightening valve seat to prevent damage.

NOTE: The provided torque wrench has a preset value of 0.56 N·m (5 lb·in).

Pin must easily install by hand. If tapping or excessive force is required, inspect the cartridge and electrical connector for contamination or misalignment.

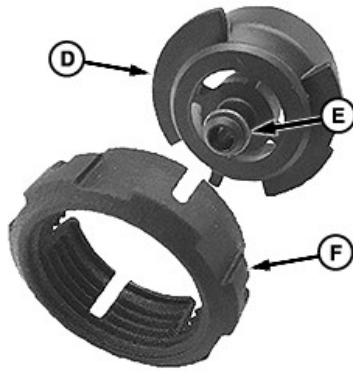
8. Assemble in reverse order following these special instructions:

- a. Spray a small amount of Electronic Contact Cleaner inside the 2-pin connector of the solenoid (I). Clean any solution that came into contact with the pins. Allow to dry before installing solenoid.

NOTE: Harness connector seal (J) removed for clarity.

- b. Lubricate harness connector seal (J) with NyoGel® Dielectric Grease or equivalent.

*Erase is a trademark of Precision Laboratories, LLC
NyoGel is a trademark of Nye Lubricants Inc.*



D—Solenoid Adapter
E—O-Ring
F—Retaining Nut

WZ290913328—UN—11JUN20

- c. Make sure O-ring (E) seats correctly in solenoid adapter (D). Tighten retaining nut (F) to maximum **3.5 N·m (31 lb·in)**.

IMPORTANT: Hand tighten the retaining nut (F). Do not over tight retaining nut (F) by rotating the solenoid after retaining nut (F) has been hand tighten.

Remote Service ADVISOR™ Connection Locations

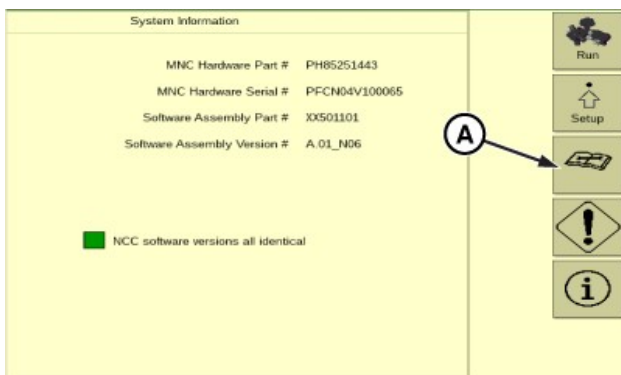
Service ADVISOR™ connections and are on the boom center frame allowing for the easy programming of nozzle bodies when necessary.

See your John Deere dealer for programming a nozzle body.

Nozzle Information Pages

Diagnostic information is available for all nozzles on the spray boom. The following steps should be followed to access nozzle information page:

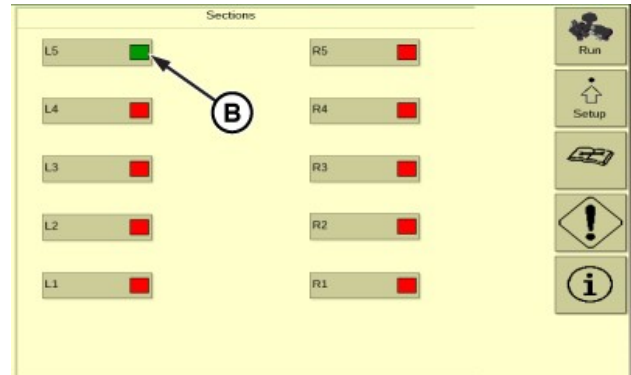
1. Select the Diagnostic Softkey (A).



A—Diagnostic Softkey

WZ643362—UN—21AUG24

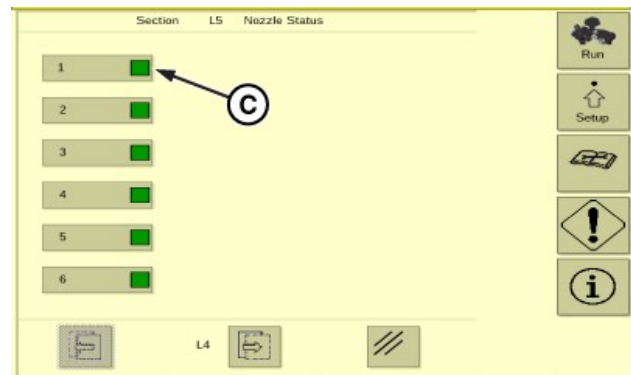
2. Select the required section in which you want to navigate from the sections page. As shown in the figure, Section L5 (B) is selected.



WZ643359—UN—22AUG24

B—Section L5

3. Select the required nozzle position in the Nozzle Status page. As shown in the figure, the nozzle in position 1 (C) is selected.



WZ643360—UN—22AUG24

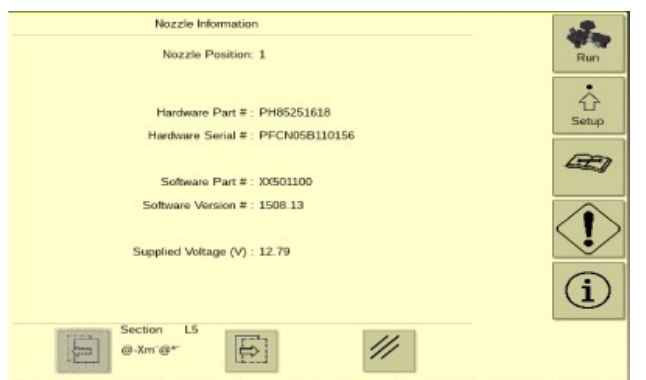
Nozzle Status Page

C—Nozzle Position 1

NOTE: The Section page and the Nozzle Status page display the section or nozzle in green if there are no issues and in red when there is an issue.

4. The following information is available on the Nozzle Information page:

- Nozzle Position on the spray boom
- Hardware Part Number
- Hardware Serial Number
- Software Part Number
- Software Version
- Supplied Voltage



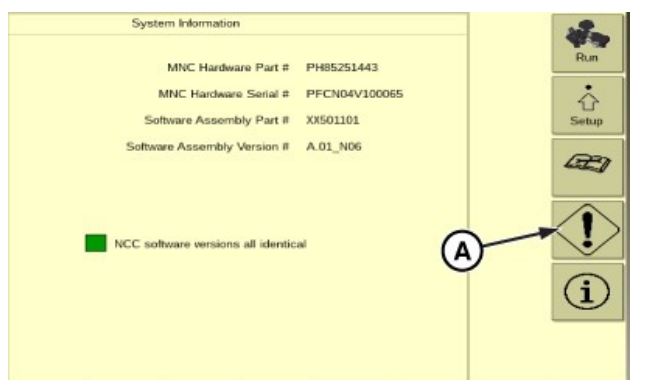
WZ643358—UN—16AUG24

Nozzle Information Page

Alerts and Faults Page

The alerts and faults concerning INC or INC Pro can be viewed on this page, including a description and the nozzle position.

The alerts and faults page can be accessed by selecting the Fault Summary Softkey (A).

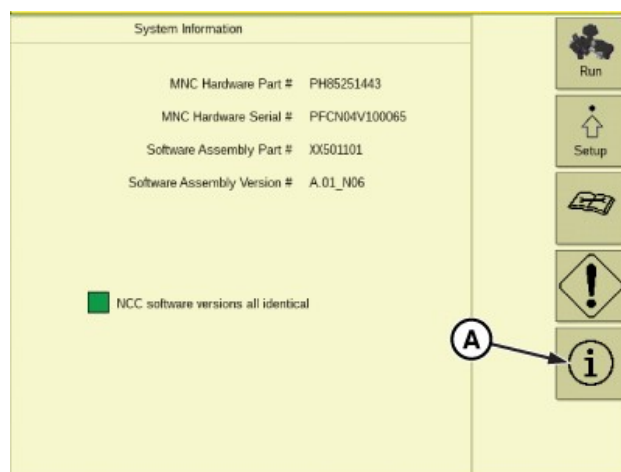


WZ643361—UN—16AUG24

A—Fault Summary Softkey

System Information Page

System Information page provides the following information and indicates if all NCCs or NCPs are running on the same software or not.



WZ632747—UN—22AUG24

System Information page

A—System Information Tab

The following information is available on the System Information page

- MNC or NDC Hardware Part Number
- MNC or NDC Hardware Serial Number
- Software Assembly Part Number
- Software Assembly Version
- Indicator if all nozzle controllers (NCC or NCP) are using the identical software version

Nozzle Body

Symptom	Problem	Solution
Valve is lodged open.	Debris in the valve.	Clean debris from effected valve. Pressure strainer damaged. Check pressure strainers for holes or other damage.
Valve is lodged closed.	Debris in the valve.	Clean debris from effected valve.
Coil circuit is open.	Defective nozzle body.	Test nozzle body. See your John Deere dealer or other service provider for more information on nozzle body. Replace nozzle body.
	Coil is defective.	Test coil resistance (6.0—7.0 ohm).

Symptom	Problem	Solution
Nozzle drips or does not shut off.	Plunger is lodged with debris.	Remove and clean the plunger.
	Plunger is worn.	Inspect and replace plunger.
	An O-ring is damaged.	Replace O-ring.
	Cartridge tube bent.	Roll tube on flat surface to check straightness, replace as necessary.
	Cartridge tube out of round.	Inspect for damage due to improper tool usage. Verify plunge moves freely in tube. Replace as necessary.
	Valve seat over-tightened.	Check for damaged or deformed threads. Replace as necessary.
Nozzle sprays erratically.	Plunger is worn.	Inspect and replace plunger.
Solution leaks from other nozzles and around turret.	Turret seals failure.	Replace turret seals as needed.
	Debris on turret seal.	Clean and lubricate turret seal.
Solution leaking around solenoid coil.	Damaged or missing valve seat O-rings.	Inspect and replace as necessary.
Remote Nozzle Control		
Symptom	Problem	Solution
Remote control is not activating nozzle bodies.	Remote control is out of range from the receiver.	Move remote control closer to the receiver.
	Remote control has not repaired after being taken out of range.	Move receiver in to the connection range and wait 20 seconds for pairing to take place.
		Place remote control within 3 m (9.8 ft) for 20 seconds.
	Remote control is locked-up from pressing and holding a button while moving out of range.	Remove battery from the remote control, wait 20 seconds, then install battery.
	Remote control usage attempted too soon after machine start-up.	Wait at least 2 minutes after machine start-up before using the remote control.
	Signal to the receiver is blocked.	Ensure that there is a clear line of sight to the receiver. Avoid having steel structure between the receiver and remote control.

Performing Welds

 **CAUTION:** Avoid potentially toxic fumes and dust. Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch. Do all work outside or in a well ventilated area.

Dispose paint and solvent properly. If using sand or grind paint, avoid breathing the dust by wearing an approved respirator. If using solvent or paint stripper, remove with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area before welding. Allow fumes to disperse at least 15 minutes before welding or heating.

 **CAUTION:** High currents or electrostatic discharge into electronic components from welding may cause permanent damage.

 **CAUTION:** When disconnecting the battery poles, ensure that the cables do NOT come into contact with the frame of the machine.

 **CAUTION:** If using an absorption device (for voltage peaks), please connect it to the battery terminals after they are disconnected from the battery.

IMPORTANT: Mazzotti company accepts no liability for damage to the machine caused by not having scrupulously complied with these requirements.

 **CAUTION:** Welding on the engine is NOT allowed. If welding must be performed on the machine, follow these precautions.

If it is necessary to perform welding work on the machine, follow the procedure:

- Position the machine away from flammable materials.
- Wear suitable clothes for accident prevention.
- STOP the machine by putting the ignition switch in the OFF position.
- Remove paint before welding or heating.

Follow the steps as per sequence:

1. Connect the negative pole of the welding machine as close as possible to the weld (maximum allowable distance 30 cm).
2. Take care to shield the welding zone to prevent damage to electrical cables or pipes with heat produced or welding spatter.
3. Remove paint from the area to be welded and ground cable clamp location.
4. If the electronic battery disconnect button is present, turn off the battery switch and proceed with manual disconnection of the poles. If the battery disconnect switch is not present, proceed directly with the disconnection of the poles, in the following order.
5. Disconnect the negative (-) and positive (+) battery cables from the battery.
6. Disconnect connectors from electronic control unit (ECU).
7. Clear or move any wiring harness sections away from the welding area.
8. Welding on engine components is not allowed.
9. Never connect the welder ground to any engine component or engine driven components that could be connected to the engine.
10. After welding, repeat steps 5-7 in reverse order.

KWPZAG2,0000A28-19-29AUG21

Regular Maintenance Intervals - Machine

U ^a D ^b	TASK	Every 5 hours	Every 10 Hours / Daily	Every 100 hours	Every 50 Hours or Weekly	Every 250 Hours	Every Month	Every 3 Months	Every 6 Months	Every 500 Hours / 1 Year	Every 1000 Hours / 2 Years	Every 1500 Hours / 3 Years	Every 2000 Hours / 4 Years	Every 3000 Hours / 6 Years	Every 4000 Hours	Every 5 Years	Every 12000 Hours / 6 Years	As Required
	Wheel Bolts Tightness (with an appropriate dynamometric wrench)	U	U															
	Tightness of the Nuts and Bolts (in general)	U																
	Oil Leaks from the Pipe Fittings	U																
	Pressure and Condition of Tires	U	U															
	General Condition	U	U															
	Hydraulic Oil Level		U															
	Possible Hydraulic Oil Leaks	U	U															
	Engine Air Filter		U															
	Service and Parking Brakes Operation	U	U															
	Rotating Parts and Joints		U															
	Air-Conditioner Compressor Belt Tension		U															
	Headlights and Flashing Operation		U															
	Steering and Hydraulic Services Operation		U															
	Instrumentation Operation		U															
	Warning Lights and Buzzer Operation		U															
	Poly Battery Tightening					U												
	Rubbing / Damaging of Flexible Pipes				U													
	Heads and Clamping Bolts - Tie Rods Clearance	U								D								
	Hydraulic Oil Filter Cartridge on Return					U				D								
	Hydraulic Oil Suction Filter Cartridge					U				D								
	Hydraulic Oil Filter Cartridge on Delivery					U				D								
	MSpray Pump Filter Cartridge					U				D								

^aUser

^bDealer

Lubrication and Maintenance

U ^a D ^b	TASK	Every 5 hours	Every 10 Hours / Daily	Every 100 hours	Every 50 Hours or Weekly	Every 250 Hours	Every Month	Every 3 Months	Every 6 Months	Every 500 Hours / 1 Year	Every 100- 0 Hours / 2 Years	Every 150- 0 Hours / 3 Years	Every 200- 0 Hours / 4 Years	Every 300- 0 Hours / 6 Years	Every 40- 00 Hours	Every 5 Years	Every 120- 00 Hours / 6 Years	As Re- quired
Roadway and Convergence	Check					U				D								
Tightening Axle Lock Bolts	Check	U		D	U													
Carbon Air Filter Cartridge (Cat IV)	Check							U										
Carbon Air Filter Cartridge (Cat IV)	Replace					U				U								
Carbon Air Filter Cartridge (Non Cat IV)	Check							U										
Carbon Air Filter Cartridge (Non Cat IV)	Replace					U				U								
Internal Recirculation Air Filter (Cat IV)	Replace					U				U								
Air Conditioner Circuit Charge	Check / Re- charge																	
Hydraulic Oil / Tank	Check / Replace										D							
Oil Cooler	Clean- ing									D								
Air Conditioner Cooler	Clean- ing									D								
Engine Oil	Replace									D								
Emergency Brake	Check										D							
Flexible Pipes	Replace														D			
MS Wheel Motors (at an authorized Poclain center)	Check														D			
MHP Wheel Motors (at an authorized Poclain center)	Check														D			
Moving Machine Parts	Grease						U											
Spraying Pump Oil Condition and Level	Check		U															
Spraying System Filters	Check / Clean		U															
Nozzles and Anti-Drip Membranes	Check / Clean		U															
Whole Boom	Check / Wash		U															
Accumulator Pressure	Check				U					D								

^aUser

^bDealer

Lubrication and Maintenance

U ^a D ^b	TASK	Every 5 hours	Every 10 Hours / Daily	Every 100 hours	Every 50 Hours or Weekly	Every 250 Hours	Every Month	Every 3 Months	Every 6 Months	Every 500 Hours / 1 Year	Every 10- 00 Hours / 2 Years	Every 1500 Hours / 3 Years	Every 2000 Hours / 4 Years	Every 300- 0 Hours / 6 Years	Every 40- 00 Hours	Every 5 Years	Every 120- 00 Hours / 6 Years	As Re- quired
Boom Safety Joint Springs	Check				U													
Nozzle	Check / Replace					U												
Nozzle Flow Rate (with a graduate jug)	Check					U												
Boom Components	Grease				U													
Flow meter Flow- Rate and Cleaning			U							D								
Air Sleeve (if equipped)	Check				U					D								
Booms Alignment and Integrity	Visual Check				U					D								
Hydraulic System	Check									D								
Boom Hydraulic System Hoses	Replace															D		
Boom Pneumatic System Hoses	Replace															D		
Boom Water System Hoses	Replace															D		
Moving Boom Parts	Grease				U													
Check oil level – Axle body	Check																	U
Check oil level – Planetary gearbox	Check																	U
Replace oil – Axle body	Replace									D	D	D	D	D	D	D	D	D
Replace oil – Planetary gearbox	Replace									D	D	D	D	D	D	D	D	D
Visually check for leaks	CHECK									D	D	D	D	D	D	D	D	D

^aUser

^bDealer

awqniwx,1722235073990-19-11OCT24

Maintenance and Service Intervals Engine

John Deere Engine 6068 FT4

⚠ CAUTION: The new engine requires an initial break-in period of about 100 hours. To ensure correct operation, follow all the instructions given in the Operator's Manual.

Item	Lubrication and Maintenance Service Intervals								
	Daily/ Before Every Startup	500 Hours of Operation or Every 12 Months	1500 Hours of Operation or Every 36 Months	3000 Hours of Operation or Every 36 Months	4500 Hours of Operation or Every 36 Months	4500 Hours of Operation or Every 60 Months	6000 Hours of Operation or Every 72 Months	8500 Hours of Operation or Every 36 Months	As Re- quired
Check Engine Oil	•								
Check Coolant Level	•								
Drain Water From Fuel Filters	•								
Check Air Cleaner Dust Valve Restriction Indicator Gauges	•								
Perform Inspection of Engine Compartment	•								
Service Fire Extinguisher		•							
Service Battery		•							
Change Engine Oil And Replace Oil Filter ^{ab}		•							
Check Coolant Pump Weep Hole		•							
Check Open Crankcase Vent (OCV) System		•							
Replace Fuel Filter Elements		•							
Check Belt Tensioner and Belt Wear		•							
Check Cooling System		•							
Pressure Test Cooling System		•							
Check Engine Speeds		•							
Check Engine Mounts		•							
Checking Engine Ground Connection		•							
Changing Open Crankcase Ventilation (OCV) Filter ^c			•						
Change DEF Dosing Unit Filter ^d			•		•				
Replace Inline DEF Filter								•	
Replace DEF Header Filter			•						
Checking Crankshaft Vibration Damper			•	•					
Adjust Engine Valve Clearance				•					
Test Glow Plugs for Continuity				•					
Replace Elastomeric Crankshaft Vibration Damper (If Equipped)						•			
Flush and Refill Cooling System							•		
Test Thermostats							•		
Drain Water From Fuel Filters When Alarm Sounds									•
Add Coolant									•
Clean DEF Tank									•
Pre-Start Cleaning Guide									•
Service Air Cleaner Filter Elements									•
Clean Diesel Particulate Filter ^c									•
Replace Alternator/Fan Belt									•
Check Fuses									•
Check Electrical Wiring and Connections									•

Lubrication and Maintenance

Item	Lubrication and Maintenance Service Intervals								
	Daily/ Before Every Startup	500 Hours of Opera- tion or Every 12 Months	1500 Hours of Opera- tion or Every 36 Months	3000 Hours of Opera- tion or Every 36 Months	4500 Hours of Opera- tion or Every 36 Months	4500 Hours of Opera- tion or Every 60 Months	6000 Hours of Opera- tion or Every 72 Months	8500 Hours of Opera- tion or Every 36 Months	As Re- quired
Check Air Compressors (If Equipped)									•
Check Refrigerant (A/C) Compressor (If Equipped)									•
Check Rear Power Take-Off (If Equipped)									•
Replace Aftertreatment DEF Dosing System Coolant Filter									•
Clean and/or Replace DEF Tank Inlet Screen									•
Clean and/or Replace DEF Tank Vent									•

^aDuring the initial operation of a new or rebuilt engine with Break-In Plus, change the oil and filter between a minimum of 100 hours and a maximum of up to 500 hours.

^bService intervals depend on sulfur content of the diesel fuel, oil pan capacity, and the oil and filter used. (See Diesel Engine Oil and Filter Service Intervals in the Fuels, Lubricants, and Coolants Section.)

^cActual service should take place when the dash indicator light comes on or as indicated by the diagnostic gauge.

^dFor engines equipped with inline DEF filter, service interval is 3500 hours.

John Deere Engine 4045 FT4

CAUTION: The new engine requires an initial break-in period of about 100 hours. To ensure correct operation, follow all the instructions given in the Operator's Manual.

Item	Lubrication and Maintenance Service Intervals							
	Daily/ Before Every Startup	500 Hours of Operation or Every 12 Months	1500 Hours of Operation or Every 36 Months	3000 Hours of Operation or Every 36 Months	3500 Hours of Operation or Every 36 Months	6000 Hours of Operation or Every 72 Months	8500 Hours of Operation or Every 36 Months	As Re- quired
Check Engine Oil	•							
Check Coolant Level	•							
Drain Water From Fuel Filters	•							
Check Air Cleaner Dust Valve Restriction Indicator Gauges	•							
Perform Inspection of Engine Compartment	•							
Service Fire Extinguisher		•						
Service Battery		•						
Change Engine Oil And Replace Oil Filter ^{ab}		•						
Check Coolant Pump Weep Hole		•						
Check Open Crankcase Vent (OCV) System		•						
Replace Fuel Filter Elements		•						
Check Belt Tensioner and Belt Wear		•						
Check Cooling System		•						
Pressure Test Cooling System		•						
Check Engine Speeds		•						
Check Engine Mounts		•						
Check Engine Ground Connection		•						
Change Open Crankcase Ventilation (OCV) Filter ^c			•					
Change DEF Dosing Unit Filter ^d			•		•			
Replace Inline DEF Filter							•	
Replace DEF Header Filter			•					
Adjust Engine Valve Clearance				•				
Test Glow Plugs for Continuity				•				
Flush and Refill Cooling System						•		
Test Thermostats						•		
Drain Water From Fuel Filters When Alarm Sounds								•
Add Coolant								•
Clean DEF Tank								•
Pre-Start Cleaning Guide								•
Service Air Cleaner Filter Elements								•
Clean Diesel Particulate Filter ^c								•
Replace Alternator/Fan Belt								•
Check Fuses								•
Check Electrical Wiring and Connections								•
Check Air Compressors (If Equipped)								•
Check Refrigerant (A/C) Compressor (If Equipped)								•
Replace Aftertreatment DEF Dosing System Coolant Filter								•
Clean and/or Replace DEF Tank Inlet Screen								•

Lubrication and Maintenance

Item	Lubrication and Maintenance Service Intervals							
	Daily/ Before Every Startup	500 Hours of Opera- tion or Every 12 Months	1500 Hours of Opera- tion or Every 36 Months	3000 Hours of Opera- tion or Every 36 Months	3500 Hours of Opera- tion or Every 36 Months	6000 Hours of Opera- tion or Every 72 Months	8500 Hours of Opera- tion or Every 36 Months	As Re- quired
Clean and/or Replace DEF Tank Vent								•

^aDuring the initial operation of a new or rebuilt engine with Break-In Plus, change the oil and filter between a minimum of 100 hours and a maximum of up to 500 hours.

^bService intervals depend on sulfur content of the diesel fuel, oil pan capacity, and the oil and filter used. (See Diesel Engine Oil and Filter Service Intervals in the Fuels, Lubricants, and Coolants Section.)

^cActual service should take place when the dash indicator light comes on or as indicated by the diagnostic gauge.

^dFor engines equipped with inline DEF filter, service interval is 3500 hours.

cf4bipj,1685601948321-19-27OCT23

Scheduled Maintenance Interval: 100 Hours

REGULAR MAINTENANCE ^a 1/1	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Change Engine Oil			
Replace Engine Oil Filter			
Replace Fuel Filter			
Check Tightness Axles Locking Bolts			

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

cf4bipj,1685601985366-19-27OCT23

Scheduled Maintenance Interval: 500 Hours / 1 Year

REGULAR MAINTENANCE ^a	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Replace Hydraulic Oil Filter Cartridge on Return			
Replace Hydraulic Oil Filter Cartridge on Intake (2 Filters)			
Replace Hydraulic Oil Filter Cartridge on Delivery			
Replace MSpray Pump Filter Cartridge			
Check Track and Toe-In			
Check Loosening of Steering Heads and Tightening Steering Bolts Tie Rods			
Check / Fill Up Air Conditioning Circuit			
Clean Air Conditioning Cooler			
Clean Hydraulic Oil Cooler			
Check the Flow and Clean the Flowmeter			
Visual Inspection Air Sleeve (if equipped)			
Check Alignment and Integrity of the Boom			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Hydraulic Filter for MSpray System			
Hydraulic Tube Inspection			

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

Lubrication and Maintenance

JOHN DEERE ENGINE JOHN DEERE ENGINE (6068 FT4)	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Check Engine Mounts			
Service Battery			
Check Engine Oil and Replace Oil Filter			
Check Coolant Pump			
Check Open Crankcase Ventilation (OCV) System			
Remove and Replace Fuel Filter Elements			
Check Automatic Belt Tensioner and Belt Wear			
Check Engine Electrical Ground Connection			
Coolant Solution Analysis (add SCAs as required)			
Pressure Test Cooling System			
Check Engine Speeds			

JOHN DEERE ENGINE^a JOHN DEERE ENGINE (4045 FT4)	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Service Battery			
Change Engine Oil and Replace Oil Filter			
Check Coolant Pump Weep Hole			
Check Open Crankcase Ventilation (OCV) System			
Remove and Replace Fuel Filters Elements			
Check Belt Tensioner and Belt Wear			
Check Cooling System			
Pressure Test Cooling System			
Check Engine Speeds			
Check Engine Mounts			
Check Engine Ground Connections			

Regular Maintenance Intervals—Machine

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

awqniwx, 1722241318377-19-20SEP24

Scheduled Maintenance Interval: 1000 Hours / 2 Year

REGULAR MAINTENANCE^a 1/1	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Replace Hydraulic Oil Filter Cartridge on the Return			
Replace Hydraulic Oil Filter Cartridge on the Intake			
Replace Hydraulic Oil Filter Cartridge on the Delivery			
Replace MSpray Pump Filter Cartridge			
Check Track and Toe-In			
Check Loosening of Steering Heads and Tightening Steering Bolts Tie Rods			
Check/Fill up Air Conditioning Circuit			
Clean Air Conditioning Cooler			
Clean Hydraulic Oil Cooler			
Drain Hydraulic Oil Tank			

Lubrication and Maintenance

Change the Oil and Wash the Tank			
Replace Hydraulic Oil Filter Cartridge on the Return			
Replace Hydraulic Oil Filter Cartridge on the Intake			
Check Emergency Brake			
Check Flow and Clean the Flow meter			
Visual Inspection Air Sleeve (if equipped)			
Check Alignment and Integrity of the Boom			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Hydraulic Filter for MSpray System			

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

awqniwx,1722241326653-19-11OCT24

Scheduled Maintenance Interval: 1500 Hours / 3 Year

REGULAR MAINTENANCE ^a 1/1	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Replace Hydraulic Oil Filter Cartridge on the Return			
Replace Hydraulic Oil Filter Cartridge on the Intake			
Replace Hydraulic Oil Filter Cartridge on the Delivery			
Replace MSpray Pump Filter Cartridge			
Check Track and Toe-In			
Check Loosening of Steering Heads and Tightening Steering Bolts Tie Rods			
Check/Fill up Air Conditioning Circuit			
Clean Air Conditioning Cooler			
Clean Hydraulic Oil Cooler			
Check the Flow and Clean the Flow meter			
Visual Inspection Air Sleeve (if equipped)			
Check Alignment and Integrity of the Boom			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Hydraulic Filter for MSpray System			

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

JOHN DEERE ENGINE JOHN DEERE ENGINE (6068 FT4)	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Change Open Crankcase Ventilation (OCV) Filter			
Change Diesel Exhaust Filter (DEF) Dosing Unit Filter			
Replace Diesel Exhaust Filter (DEF) Tank Header Suction Screen			

JOHN DEERE ENGINE ^a JOHN DEERE ENGINE (4045 FT4)	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Change Open Crankcase Ventilation (OCV) Filter			
Change Diesel Exhaust Filter (DEF) Dosing Unit Filter			
Replace Diesel Exhaust Filter (DEF) Tank Header Suction Screen			

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

awqniwx,1722241503081-19-24JAN25

Scheduled Maintenance Interval: As Required

JOHN DEERE ENGINE JOHN DEERE ENGINE (6068 FT4)	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Drain Water From Fuel Filters (when alarm sounds)			
Add Coolant			
Clean Diesel Exhaust Filter (DEF) Tank			

Lubrication and Maintenance

Replace Air Filter Elements			
Clean Diesel Particulate Filter (DPF)			
Replace Fan and Alternator Belts			
Check Fuses			
Check Electrical Wiring and Connections			
Check Air Compressor (if equipped)			
Bleed Fuel System			
Check Refrigerant (A/C) Compressor (if equipped)			
Replace Aftertreatment DEF Dosing System Coolant Filter			

JOHN DEERE ENGINE ^a JOHN DEERE ENGINE (4045 FT4)	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
SUBJECT	MARK PERFORMED SERVICE		
	INSPECT / CLEAN	REPLACE	NOTE
Drain Water From Fuel Filters (when alarm sounds)			
Add Coolant			
Clean Diesel Exhaust Filter (DEF) Tank			
Replace Air Filter Elements			
Clean Diesel Particulate Filter (DPF)			
Replace Alternator / Fan Belt			
Check Fuses			
Check Electrical Wiring and Connections			
Bleed Fuel System			
Check Air Compressors (if equipped)			
Check Refrigerant Air-Conditioner Compressor (if equipped)			
Replace Aftertreatment DEF Dosing System Coolant Filter			

^aIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

cf4bipj,1685602034368-19-27OCT23

Scheduled Maintenance Interval: Mechanical Differential Axle

SCHEDULED MAINTENANCE MECHANICAL AXLE Mechanical Differential Axle	AUTHORIZED DEALER STAMP		DATE:
			HOURS:
SUBJECT	MARK PERFORMED SERVICE		
	INSPECT / CLEAN	REPLACE	NOTE
Check oil level – Axle body			
Check oil level – Planetary gearbox			
Replace oil – Axle body			
Replace oil – Planetary gearbox			
Visually check for leaks			

VK06011,00008E4-19-15MAR22

Extraordinary Maintenance Logbook¹

CHECK / CLEAN / REPAIR / REPLACE (indicate activity performed)	DESCRIPTION OF TECHNICAL OPERATION	DATE:	HOURS:

awqniwx,1722242546528-19-29JUL24

¹ It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

Storage

Clean Vehicle of Hazardous Chemicals

⚠ 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.
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.

KWPZAG2,0000A1B-19-27AUG21

Preparation for Storage

IMPORTANT: The sprayer may only be uncoupled on a sturdy surface with a slope of maximum 8.5°, regardless of the liquid level in the tank.

Store the machine indoors. There are no special statutory regulations on storage, as long as the residual liquids have been processed and the machine has been cleaned after use in the prescribed manner. Keep animals and children away from the uncleaned machine at all times. Clean the machine or, if this is not immediately possible, store it in an area sealed off to unauthorized persons.

If the machine is to be inactive for a long period of time (winter period), the following work must be carried out before the machine is stored away:

- Clean the machine.
- Grease the machine. Refer to Lubrication and Maintenance and Lubrication section.
- Protect the machine against frost. Refer to Protection Against Frost in this section.

KWPZAG2,0000A1C-19-27AUG21

Protection Against Frost

IMPORTANT: Ensure that the hose reel with wash brush and the high-pressure washer options is drained of water for winter protection.

Once the machine has been completely cleaned, both inside and outside, and greased, store the machine properly for winter and protect it from frost, unless it is stored in a frost-free building.

Perform a rinse cycle to clean the machine and afterwards perform a machine AirRinse™ cycle to collect all liquid into the tank. Drain the collected liquid from the tank.

Make sure that no water is left in the machine, in order to avoid frost damage. All machine components must be totally free of water. To this end, all filters, hoses, and lines must be disconnected and valves must be half opened. Do not forget to remove the water from the various supply hoses and lines, by uncoupling the hoses at their lowest point and removing the plugs from the spray line. Also disconnect the nozzles and ensure that they are cleaned, along with the filters, before being replaced after the winter period. Drain water from all electrical shutoff valves by opening the drain valve.

Alternatively, the machine can be filled with antifreeze - this solution is preferable. This method also offers a number of additional advantages. Firstly, it prevents rubber components (e.g. pump diaphragms) from drying out during the winter. Furthermore, antifreeze has a preserving effect, offering the internal components of the machine better protection against corrosion, etc. Finally, machines which have been stored away with antifreeze in the winter experience fewer obstructions in the new spraying season. This is because any residual liquids in the spray lines will not harden.

The machine can be filled with antifreeze as follows:

1. After cleaning the machine thoroughly, add antifreeze to the rinse tank.
2. Perform a rinse cycle to fill all lines with antifreeze. Make sure the machine AirRinse™ check boxes are not ticked so that air cannot flow through the lines.
3. Open the spray master valve shortly so that antifreeze is distributed up to the nozzle tips.
4. Machines equipped with TwinSelect™ or ExactApply™ require antifreeze right up to all the nozzle tips (A+B).

After the winter, remember to drain the antifreeze, and flush the machine thoroughly with clean water.

Pay special attention to the pressure gauge and the pressure sensor. The pressure gauge and the pressure sensor must be removed for the winter storage to prevent them from frost damage. The pressure gauge must be stored upright. After all, superfluous water does not automatically drain out.

KWPZAG2,0000A1D-19-27AUG21

MSpray Winterization Procedure

IMPORTANT: Ensure the hose reel with wash brush option is drained for winter protection.

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ExactApply is a trademark of Deere & Company*

The following procedure is a guide of how best to winterize a Mspray machine.

1. Ensure the machine has been washed and cleaned.
2. Reduce the liquid dead-volume in the machine by performing a machine air-rinse cycle.
3. Drain the solution tank and rinse water tank.
4. Mix winter fluid to the appropriate temperature and load it into the rinse water tank. Fill with winter fluid as required to specification.

Specification

Winter Fluid—Capacity. 150 L
(40 gal)

5. Run a single rinse cycle at volume setting 1 (this is the low setting using approximately 120 L). Do not spray out fluid at this time.

In **machine settings** on the **sprayer** tab ensure the field pressure function AirRinse™ is **checked** and spray line AirRinse™ is **unchecked**.

6. Spray winter fluid until it comes out of the nozzles:

- a. For pressure circulation machines—Press the spray master value button to ON. Wait until winter fluid is observed on all nozzles including edge and off-center nozzles and then turn off the spray master value.

Rotate the nozzle bodies and spray out of each nozzle installed to make sure that they are all protected.

- b. For ExactApply™ machines—Use (A+B) to spray winter fluid until visible. Rotate the ExactApply™ nozzle body to ensure all nozzles fitted are protected.

7. Operate the wash brush or high-pressure cleaner if equipped until winter fluid is present.

8. Run eductor with the solution tank as the source:

- a. Operate the eductor rinse ring, jug rinse nozzle, and eductor cleaning nozzle (in lid) until winter fluid can be detected at each function. Use an empty container to operate the jug rinse nozzle.
- b. Suck the fluid back to the solution tank by activating the eductor venturi.
- c. Turn off the eductor venturi and eductor rinse switches.

9. Pump the winter fluid in the rinse water tank back into the solution tank with the rinse water tank button number 2 as source on the solution command system keypad.

10. Place a large container under the tank drain and drain 100 L from the solution tank.

11. Place the filling hose end into the container.

12. Use the filling pump to load the winter fluid back into both the rinse water tank and the solution tank. This

method protects the large filling hoses for both tanks. Pump the winter fluid in the rinse water tank back into the main tank with button 2 on the solution command system keypad.

13. If steps 10 to 12 are not possible to do, stop the engine. Position a suitable container under the 3 inch filling connection. To drain out the winter fluid, open the 3 inch filling connection. This includes draining the water from the large filling hose that runs to the top of the tank.

- a. Position a suitable container under the filling pump drain plug.

- b. Open filling pump drain plug.

- c. Switch the sprayer ignition key ON and follow the next steps. This process opens the solution system valves towards the filling pump in order for the winter fluid to drain out.

(i) On the solution command system keypad, press the external pump filling (button number 0) and the menu (button number 3) for rinse water tank filling.

(ii) On the solution command system keypad, press the external pump filling (button number 0) for solution tank filling

14. Once the winter fluid has been drained, stop the filling by pressing button number 0 again and close the filling pump drain plug.

15. Drain the hand wash tank.

16. Drain water from the compressed air circuit.

awqniwx,1720682407805-19-11JUL24

Activation After Long Storage Period

When first activating the machine after major overhaul or repairs and after long storage, the machine must be prepared as follows.

CAUTION: Do NOT leave any rinse water in the sprayer for a longer period of time, since high temperatures could cause development of micro-organisms which could be harmful for your health.

IMPORTANT: The risk of malfunctioning is greater than normal if machine has not been operated for a long period. Be more cautious.

- Make sure you are familiar with the user documentation.
- Connect the electrical controls correctly.
- Connect all hydraulic hoses correctly.
- Check the pump oil level.
- Check whether all moving parts can run freely.
- Check whether there is no damage to the machine,

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particularly to external electrical wiring and parts carrying liquid (e.g. transport damage).

- Check the battery voltage. Charge the battery as required, remove the charging cables after charging, and start the engine to check the battery has sufficient power to turn over the engine.
- Check the tire pressure, and check the torque of the wheel bolts.
- Attach all hoses which were uncoupled (frost protection) and/or remove the antifreeze. Fill the tank with water for this purpose and flush the complete machine through.

NOTE: Test running of the machine must always take place using clean water. This gives the least risk for the user, the environment and the crops in the case of any technical malfunctions or operational errors.

- Test run the machine and open the main and boom section valves. Check there are no leakages (pump, hoses) and replace any defective parts (hoses, seals).
- Check the working of all operating functions.
- Check the nozzle flow rate and the spraying pattern of the various nozzles.

The machine is now ready for use.

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Diagnostics and Troubleshooting

Problems—Causes—Solutions

⚠ CAUTION: All maintenance, troubleshooting or repairs should be performed while the machine is at a standstill, with the handbrake on and after removing the key from the control panel.

repairing the most simple faults but, at the same time, provides a clear indication of the actions that can be performed by specialist technicians only.

In case of doubt, do NOT take any action on the machine but always consult a specialist technician.

This section serves as a guide for the operator on

Machine Troubleshooting

Symptom	Problem	Solution
Difficult or impossible to find the neutral position	Fault with the forward lever	Repair or replace the lever.
Significant overheating of the oil in the tank (over 85°)	Oil level too low	Restore the oil level.
	Clogged oil radiator	Clean the oil radiator.
	Unsuitable hydraulic oil	Replace the oil with the recommended hydraulic oil.
	Clogged filter or blocked suction line	Replace the oil filters and check the suction line.
	Faulty or dirty pressure relief valves	Remove, clean or replace the pressure relief valves.
Noise in the transmission	Faulty pump or motors	Replace the pump or motors found to be faulty.
	Oil level too low	Restore the oil level.
	Suction of air into the suction line	Find and eliminate the suction of air into the line.
	Faulty pump or motors	Replace the pump or motors found to be faulty.
The machine moves with a delay in the two directions of rotation	Clogged suction filter	Replace the suction filter.
	Air in the transmission	Find and eliminate the suction of air into the line.
	Supply pressure relief valve faulty or dirty	Remove, clean or replace the valve.
	Clogged hole in the servo control throttle valve	Disassemble the valve and clean the hole with a jet of air.
The machine does not move forward or backward	Faulty pump or motors	Replace the pump or motors found to be faulty.
	Oil level too low	Restore the oil level.

Symptom	Problem	Solution
	Damaged control lever electrical system	Check and repair the cable of control lever electrical system.
	Broken pump/diesel engine connection joint	Replace the pump/diesel engine connection joint.
	Faulty supply pump or broken drive shaft	Replace the pump or the shaft.
	Clogged filter or broken suction line	Replace the filter or the suction line.
	Supply pressure relief valve faulty or dirty	Replace or clean the valve.
	Faulty check valves in the supply circuit	Call the technical assistance service.
	Faulty pump or motors	Replace the pump or the motor.
	Blown fuse	Replace the fuse.
	Faulty or dirty pressure relief valve for the direction of travel	As a check, try inverting the pressure relief valves. If the fault occurs in the opposite direction, this means that a valve is dirty or damaged. Remove, clean, or replace the valves.
The machine has insufficient tractive force or does not move in one direction of travel		
The distribution and self-priming pumps do not run regularly	Clogged relief valve on solenoid valve block	Clean or replace the valve.
	Damaged pump	Replace the pump.
The distribution and self-priming pumps do not run	Interrupted electrical connection	Check the electrical connection on the solenoid valve block.
	Faulty motors	Replace the fuse in-line with motors.
Faulty front and rear steering system	Faulty hydraulic steering gear	Replace the hydraulic steering gear.
	Faulty hydraulic steering gear inlet valve	Replace the gear inlet valve.
	Damaged gear pump	Replace the gear pump.
Rear steering does not work	Faulty solenoid valve block	Replace the solenoid valve block.
	Faulty sensors	Check the electrical connections on the solenoid valve block. Check the fuses. Check the sensors.
Cold air is not supplied	Air conditioning system low	Have specialist personnel check the circuit.

Symptom	Problem	Solution
Insufficient quantity of air from ventilation	Compressor belts slow or broken	Check the tension of the belts and adjust or replace them.
	Faulty control unit	Replace the control unit.
	Dirty radiator	Clean the radiator.
	Clogged air recirculation grilles	Check and clean the grilles.
	Broken fan	Replace the fan.
Unpleasant odor in the cab	Faulty climate control unit	Replace the control unit.
	Need to replace filter	Replace the filters.
	Faulty door seals	Replace the door seals.

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Engine Troubleshooting

John Deere Engine Troubleshooting

Before troubleshooting the engine, first retrieve any fault codes on the diagnostic gauge display and perform the corrective actions.

In case of any problem, use the following charts to solve the engine problems.

Symptom	Problem	Solution
Engine not cranking	Low battery output voltage or discharged battery	Charge or replace batteries.
	Loose or corroded connections	Tighten and clean connections.
	Faulty start circuit relay	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Blown fuse	Replace the fuse.
	Defective main switch or start safety switch	Repair switch as required.
	Starter solenoid defective	Replace the solenoid.
	Starter defective	Replace the starter.
Starter cranks slowly	Low battery output voltage or discharged battery	Charge or replace the batteries.

Symptom	Problem	Solution
Engine hard to start or does not start	Too high viscosity crankcase oil	Drain crankcase oil and add oil with correct viscosity.
	Loose or corroded connections	Clean and tighten connections.
	Engine starting under load	Disengage the PTO.
	Improper starting procedure	Review the starting procedure.
	Exhaust restricted	Check and correct exhaust restriction.
	No fuel	Check the fuel tank.
	Air in fuel line	Bleed fuel lines.
	Poor fuel quality	Drain fuel and replace with fuel of grade and quality appropriate for operating conditions.
	Water, dirt or air in fuel system	Drain, flush, fill, and bleed fuel system.
	Fuel filter restricted or full of water	Replace fuel filter or drain water from fuel filter.
	Dirty or faulty fuel injectors	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic fuel system problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Cold weather	Use cold weather starting aids.
	Too high viscosity crankcase oil	Drain crankcase oil and add oil with correct viscosity.
	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Symptom	Problem	Solution
Engine misfiring or runs irregularly	Poor fuel quality	Incorrect fuel/dirty fuel. Test fuel, drain water from fuel bowl.
	Restricted fuel filter	Replace fuel filter element.
	Water, dirt, or air in fuel system	Drain, flush, fill, and bleed fuel system.
	Low coolant temperature	Remove and check thermostat.

Symptom	Problem	Solution
	Dirty or faulty fuel injectors	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic fuel system problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Lack of engine power	Intake air restriction	Service the air cleaner.
	Exhaust restricted	Check and correct exhaust restriction.
	Poor fuel quality	Drain fuel and replace with proper grade and quality of fuel for operating condition.
	Restricted fuel filter	Replace the fuel filter elements.
	Engine overloaded	Reduce the engine load.
	Improper crankcase oil	Drain crankcase oil and add oil with correct viscosity.
	Low coolant temperature	Remove and check thermostat.
	Improper valve clearance	Adjust the valve clearance
	Dirty or faulty fuel injectors	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Turbocharger not functioning properly	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Air leak in engine intake or exhaust manifold	Check intake and exhaust manifold gaskets and manifolds repair as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Engine derated DTC	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
Engine idles poorly	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Poor fuel quality	Drain fuel and replace with proper grade and quality of fuel for operating condition.
Excessive fuel consumption	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Engine overloaded	Reduce the engine load.
	Air cleaner restricted or dirty	Replace air cleaner element as required.
	Compression too low	Determine cause of low compression and repair as required.
Excessive fuel consumption	Leaks in fuel supply system	Locate source of leak and repair as required.
	Improper type of fuel	Drain fuel and replace with proper grade and quality of fuel for operating condition.
	Poor fuel quality	Drain fuel and replace with proper grade and quality of fuel for operating condition.
	Improper valve clearance	Adjust the valve clearance.
	Dirty or faulty fuel injectors	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic fuel system problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Turbocharger not functioning properly	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
Fuel in oil	Low engine temperature	Remove and check thermostat.
	Restricted fuel return line	Check and fix fuel return lines.
	Engine load too light	Increase the engine load.
Low-pressure fuel system (fuel pressure low)	Leaking fuel injectors	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Restricted fuel filter	Replace the fuel filter.
	Restricted fuel line	Locate restriction, repair as required.
	Faulty transfer pump	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Abnormal engine noise	Faulty high-pressure fuel pump	Remove fuel pump, repair/replace pump as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Worn main or connecting rod bearings	Determine bearing clearance. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Excessive crankshaft end play	Check crankshaft end play. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Loose main bearing caps	Check bearing clearance, replace bearings and bearing cap screws as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Worn connecting rod bushings and piston pins	Inspect piston pins and bushings. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Scored pistons	Inspect pistons. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
Abnormal engine noise	Worn timing gears or excess backlash	Check timing gear back lash. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Excessive valve clearance	Check and adjust valve clearance.
	Worn camshaft lobes	Inspect camshaft. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Worn rocker arm shafts	Inspect rocker arm shafts. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Worn valve guides	Check valve guides for wear. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Damaged valve retainers	Inspect retainers and retainer locks for excessive wear. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Loose or worn rocker arms	Inspect rocker arms for wear. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Bent push rods	Inspect push rods for straightness and check contact ends for wear and damage. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Broken valve springs	Inspect valve springs. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Bent connecting rods	Inspect connecting rods and cap for damage. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
	Worn flywheel	Inspect flywheel and ring gear for damage. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Loose flywheel	Check flywheel mounting screw. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Excessive piston to liner clearance	Check and adjust piston liner clearance. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Excessive thrust bearing clearance	Check and adjust thrust bearing clearance. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	High oil viscosity	Drain engine oil and refill with correct viscosity engine oil.
Turbocharger provides noise or loud noise	Leak in intake air system	Check air system for loose clamps, damaged tubes, charged air cooler leaks, and intake manifold gasket leaks, repair as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Turbocharger noise or vibration¹	Bearings not lubricated (insufficient oil pressure)	Determine cause of lack of lubrication, repair as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Air leak in engine intake or exhaust manifold	Check intake and exhaust manifold gaskets and manifolds, repair as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Improper clearance between turbine wheel and turbine housing	Inspect turbocharger; repair/replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

¹ Variable geometry turbocharger recycles after starting engine, causing a momentary revving sound in the engine. This is normal. Do NOT confuse the whine heard during run down with noise which indicates a bearing failure.

Symptom	Problem	Solution
	Broken blades (or other wheel failures)	Inspect turbocharger: Repair/replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Engine has reached service only soot level	Auto filter cleaning disabled for an extended period of time	Enable exhaust filter cleaning.
	Frequent engine shutdowns during auto cleaning in process	Let the engine run for 30 minutes to clean the exhaust filter.
	Interlock switches not properly set to allow DPF recovery/ regeneration to occur	Machine should be stationary (parked). Engine speed must be above the minimum set-point. Any PTO driven device must be shut off. Engine load should be stable.
SCR high (NOx outlet)	DEF tank low	Fill DEF tank with new DEF.
	Fluid other than DEF added to the DEF tank	Drain, flush, and fill DEF tank with new DEF.
Engine emits white smoke	Engine compression too low	Determine the cause of low compression and repair as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Defective thermostats (does not close)	Test thermostats and replace as required.
	Coolant entering combustion chamber (failed cylinder head gasket or cracked cylinder head)	Repair or replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Improper type of fuel	Drain fuel and replace with proper grade and quality of fuel for operating condition.
	Poor fuel quality	Drain fuel and replace with proper grade and quality of fuel for operating condition.
	Low engine temperature	Warm up engine to normal operating temperature.

Symptom	Problem	Solution
Engine emits black, gray or blue smoke	Defective thermostat	Remove and check thermostat.
	Defective fuel injectors	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Engine overloaded	Reduce engine load.
	Engine burning oil	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Air cleaner restricted or dirty	Replace air cleaner element as required.
	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Exhaust filter is cracked or damaged	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Improper type of fuel	Use proper fuel.
	Fuel injectors dirty	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Electronic control system problem or basic engine problem	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Engine overheats	Turbocharger not functioning properly	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Air cleaner restricted or dirty	Replace air cleaner element as required.
	Lack of coolant in cooling system	Fill cooling system to proper level. Check radiator and hoses for loose connections or leaks.
	Low engine oil level	Check oil level. Add oil as required.
	Radiator core dirty	Clean cooling system as required.

Symptom	Problem	Solution
	Cooling system needs flushing	Flush coolant system.
	Engine overloaded	Reduce engine load.
	Loose or defective fan belt	Check automatic belt tensioner and belts. Replace as required.
	Defective or wrong type of thermostats	Test thermostat opening temperature, replace thermostats as required.
	Damaged cylinder head gasket	Replace cylinder head gasket. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Leak at cylinder head gasket	Replace cylinder head gasket. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Defective coolant pump	Replace coolant pump. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Defective radiator cap	Replace radiator cap as required.
	Defective temperature gauge or sender	Check coolant temperature with thermometer and replace if necessary.
Coolant temperature below normal	Incorrect grade of fuel	Use correct grade of fuel.
	Defective thermostats	Check and replace thermostats as required.
	Defective temperature gauge or temperature sender	Check gauge, sender, and connections.
Coolant in crankcase	Cylinder head gasket defective	Replace cylinder head gasket. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Cylinder head or block cracked	Locate crack, repair/replace components as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
	Cylinder liner seals leaking	Remove and inspect cylinder liners. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Pitted cylinder liners	Remove and inspect cylinder liners. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Leaking oil cooler	Pressure test oil cooler, repair/replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Defective oil cooler O-rings	Remove and inspect oil cooler O-rings, replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	EGR cooler system leaking	Pressure test EGR cooler system, repair/replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Faulty coolant pump seal, weep hole plugged, coolant leaking through bearing	Replace coolant pump seals. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Low oil pressure	Low crankcase oil level	Fill crankcase to proper oil level.
	Faulty pressure sensor	Replace sensor. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Restricted oil cooler or filter	Remove and inspect oil cooler. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Excessive oil temperature	Remove and inspect oil cooler. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
	Defective oil pump	Remove and inspect oil pump. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Incorrect oil	Drain crankcase and refill with correct oil.
	Oil pressure regulating valve failure	Remove and inspect oil pressure regulating valve. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Restricted oil pump screen or cracked pick-up tube	Remove oil pan and clean screen/replace pick-up tube.
	Excessive main or connecting rod bearing clearance	Determine bearing clearance. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Low oil pressure	Crankcase oil level too high	Check engine oil level and drain as necessary.
High oil pressure	Improper oil classification	Drain crankcase and refill with correct oil.
	Faulty pressure sensor	Replace sensor. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Oil pressure regulating valve failure	Remove and inspect oil pressure regulating valve. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Stuck or damaged filter bypass valve	Remove and inspect filter bypass valve. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Stuck or damaged oil cooler bypass valve	Remove and inspect oil cooler bypass valve. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Excessive oil consumption	Too low viscosity crankcase oil	Drain crankcase and add oil with correct viscosity.

Symptom	Problem	Solution
	Crankcase oil level too high	Drain oil until oil level is correct.
	External oil leaks	Determine source of oil leaks and repair as required.
	Excessive oil pressure	Check oil pressure.
	Oil control rings not seated	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Oil control rings worn or broken	Replace piston rings. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Restricted crankcase vent tube	Clean vent tube, verify that crankcase oil level is not too high.
	Defective turbocharger	See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Scored cylinder liners or pistons	Remove and inspect cylinders and liners, replace as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Worn valve guides or stems	Inspect and measure valve stems and valve guides, repair as required. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Piston ring grooves excessively worn	Remove and inspect pistons. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Piston rings sticking in ring grooves	Remove and inspect pistons. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Insufficient piston ring tension	Remove and inspect pistons. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.

Symptom	Problem	Solution
	Piston ring gaps not staggered	Remove and inspect pistons. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Excessive oil consumption	Front and/or rear crankshaft oil seal faulty	Replace oil seals. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
Undercharged electrical system	Excessive electrical load from added accessories	Remove accessories or install higher output alternator. See your John Deere engine distributor or other service provider for more information about engine troubleshooting.
	Excessive engine idling	Increase engine rpm when heavy electrical load is used.
	Poor electrical connections on battery, ground strap, starter, or alternator	Inspect and clean as necessary.
	Defective battery	Test the battery.
	Defective alternator	Test the charging system.
Battery used too much water	Cracked battery case	Check for moisture and replace as necessary.
	Defective battery	Test the battery.
	Battery charging rate too high	Test charging system.
Batteries not charging	Loose or corroded connections	Clean and tighten connections.
	Sulfated or worn-out batteries	Replace the batteries.
	Stretched belt or defective belt tensioner	Adjust the belt tension or replace belts.
Starter and hour meter functions, rest of electrical system does not function	Blown fuse	Replace the fuse.
Entire electrical system does not function	Faulty battery connection	Clean and tighten connections.
	Sulfated or worn-out batteries	Replace the batteries.
	Blown fuse	Replace the fuse.

Alarm Cabin Sound

A sound alarm goes off when:

- The operator stands up from the seat.
- Automatic axles are activated.

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Error Codes Locations



TG645269—UN—30AUG24

Steering System Error Codes

A—Steering System Error Code



TG645270—UN—30AUG24

Machine Error Codes

B—Machine Error Code



TG645271—UN—30AUG24

Drive System Error Codes

C—Drive System Error Codes

NOTE: For ECU code alerts, red color warning indicates high severity level, orange color indicates moderate severity level, yellow color indicates low severity level.



TG645272—UN—30AUG24

ECU Code Alert

D—High Severity Level



TG645273—UN—30AUG24

ECU Code Alert

E—Moderate Severity Level



ECU Code Alert

TG645274—UN—30AUG24



Machine Error Codes

TG645275—UN—30AUG24

F—Low Severity Level

A—Machine Error Code

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List of machine error codes that appear on Tera 10 display:

Machine Error Codes

IMPORTANT: Error codes are presented in the Tera10 display, in the alarm zone as shown.

Alarm Code	Description	Probable Cause	Troubleshooting
1	HE154 ECU system alarm	Probable software corruption or electronic internal fault	Upload software/parameters on the ECU Replace ECU due to internal fault
2	HE154 ECU outputs fault	ECU outputs could have no power or there is a power supply connected on outputs while they are off	Check outputs wiring from HE154 ECU to the utilities (valves, relays, etc.) Check power supplies connected to HE154 ECU (Pins Z1, Z3, Z4, Y1, Y2, Y4, Y5, K4)
10	LE70 ECU system alarm	Probable software corruption or electronic internal fault	Upload software/parameters on the ECU Replace ECU due to internal fault
11 or 12	LE70 ECU power supply A fault	Some outputs could have no power	Check power supply connected to LE70 ECU (Pin A33)
13 or 14	LE70 ECU power supply B fault	Some outputs could have no power	Check power supply connected to LE70 ECU (Pin B33)
15	LE70 ECU outputs fault	There could be a power supply connected on outputs while they are off	Check outputs wirings from LE70 ECU to the utilities (valves, relays, etc.)
16	LE70 ECU CAN messages timeout	LE70 ECU isn't present on CAN-BUS line	Check LE70 ECU power supply Check LE70 CAN-BUS line connection
20	LE70 Sprayer ECU system alarm	Probable software corruption or electronic internal fault	Upload software/parameters on the ECU Replace ECU due to internal fault
21 or 22	LE70 Sprayer ECU power supply A fault	Some outputs could have no power	Check power supply connected to LE70 Sprayer ECU (Pin A33)
23 or 24	LE70 Sprayer ECU power supply B fault	Some outputs could have no power	Check power supply connected to LE70 Sprayer ECU (Pin B33)
25	LE70 Sprayer ECU outputs fault	There could be a power supply connected on outputs while they are off	Check outputs wiring from LE70 Sprayer ECU to the utilities (valves, relays, etc.)
26	LE70 Sprayer ECU CAN messages timeout	LE70 Sprayer ECU isn't present on CAN-BUS line	Check LE70 ECU power supply Check LE70 CAN-BUS line connection
41	TERA10 Display CAN messages timeout	TERA10 Display isn't present on CAN-BUS line	Check TERA10 display power supply

Diagnostics and Troubleshooting

			Check TERA10 display CAN-BUS line connection
51	IO-CORE CPU0 ECU system alarm	Probable software corruption or electronic internal fault	Replace ECU due to internal fault
52	IO-CORE CPU1 ECU system alarm	Probable software corruption or electronic internal fault	Replace ECU due to internal fault
53	IO-CORE ECU CAN messages timeout	IO-CORE ECU isn't present on CAN-BUS line	Check IO-CORE ECU power supply Check IO-CORE CAN-BUS line connection
61	KEYPAD 1 CAN messages timeout	KEYPAD 1 isn't present on CAN-BUS line	Check KEYPAD 1 power supply Check KEYPAD 1 CAN-BUS line connection
62	KEYPAD 2 CAN messages timeout	KEYPAD 2 isn't present on CAN-BUS line	Check KEYPAD 2 power supply Check KEYPAD 2 CAN-BUS line connection
63	KEYPAD 3 CAN messages timeout	KEYPAD 3 isn't present on CAN-BUS line	Check KEYPAD 3 power supply Check KEYPAD 3 CAN-BUS line connection
64	KEYPAD 4 CAN messages timeout	KEYPAD 4 isn't present on CAN-BUS line	Check KEYPAD 4 power supply Check KEYPAD 4 CAN-BUS line connection
65	KEYPAD 1 system alarm	Probable software corruption or electronic internal fault	Replace KEYPAD due to internal fault
66	KEYPAD 2 system alarm	Probable software corruption or electronic internal fault	Replace KEYPAD due to internal fault
67	KEYPAD 3 system alarm	Probable software corruption or electronic internal fault	Replace KEYPAD due to internal fault
68	KEYPAD 4 system alarm	Probable software corruption or electronic internal fault	Replace KEYPAD due to internal fault
71	LIBERTY LINK ECU CAN messages timeout	LIBERTY LINK ECU isn't present on CAN-BUS J1939 line	Check LIBERTY LINK ECU power supply Check LIBERTY LINK CAN-BUS line connection
72	LIBERTY LINK ECU system alarm	Probable software corruption or electronic internal fault	Replace LIBERTY LINK ECU due to internal fault
81	TPR CAN messages timeout	TPR isn't present on CAN-BUS line	Check TPR power supply Check TPR CAN-BUS line connection
82	TPR system alarm	Probable software corruption or electronic internal fault	Replace TPR due to internal fault
101 or 103	Drive Joystick channel 1 low signal	Drive joystick probably not properly connected. Signal very low, around 0V	Check Drive Joystick wiring Replace drive joystick
102 or 104	Drive Joystick channel 1 high signal	Drive joystick probably not properly connected. Signal very high, around +5V	Check Drive Joystick wiring Replace drive joystick
105 or 107	Drive Joystick channel 2 low signal	Drive joystick probably not properly connected. Signal very low, around 0V	Check Drive Joystick wiring Replace drive joystick
106 or 108	Drive Joystick channel 2 high signal	Drive joystick probably not properly connected. Signal very high, around +5V	Check Drive Joystick wiring Replace drive joystick
109	Drive Joystick redundancy alarm	Drive joystick channel 1 or channel 2 not properly connected. The 2 channels potentiometers should go opposite	Check Drive Joystick wiring Replace drive joystick
112	Drive joystick neutral position alarm	Drive joystick neutral micro switch doesn't match with drive joystick voltage channels	Check Drive Joystick wiring, especially neutral micro switch wiring Replace drive joystick
116	Rear Axle not blocked with fast speed	Rear axle not properly blocked with fast speed selected	Check rear axle block proximity wiring Replace rear axle block proximity

Diagnostics and Troubleshooting

121 or 123	S6 braking system sensor channel 1 low signal	S6 braking system sensor probably not properly connected. Signal very low, around 0mA	Check S6 braking system sensor wiring Replace S6 braking system sensor
122 or 124	S6 braking system sensor channel 1 high signal	S6 braking system sensor probably not properly connected. Signal very high, around 20mA	Check S6 braking system sensor wiring Replace S6 braking system sensor
125 or 127	S6 braking system sensor channel 2 low signal	S6 braking system sensor probably not properly connected. Signal very low, around 0mA	Check S6 braking system sensor wiring Replace S6 braking system sensor
126 or 128	S6 braking system sensor channel 2 high signal	S6 braking system sensor probably not properly connected. Signal very high, around 20mA	Check S6 braking system sensor wiring Replace S6 braking system sensor
129	S6 braking system sensor redundancy alarm	S6 braking system sensor channel 1 or channel 2 not properly connected. The 2 channels potentiometers should go opposite	Check S6 braking system sensor wiring Replace S6 braking system sensor
130	S6 braking system pressure alarm	S6 braking system pressure under 150 bar	Check S6 braking system sensor wiring Check S6 braking system hydraulic pressure
131 or 133	Slow motion knob low signal	Slow motion knob probably not properly connected. Signal very low, around 0V	Check Slow motion knob wiring Replace Slow motion knob
132 or 134	Slow motion knob high signal	Slow motion knob probably not properly connected. Signal very high, around +5V	Check Slow motion knob wiring Replace Slow motion knob
141 or 143	Air sleeve knob low signal	Air sleeve knob probably not properly connected. Signal very low, around 0V	Check air sleeve knob wiring Replace air sleeve knob
142 or 144	Air sleeve knob high signal	Air sleeve knob probably not properly connected. Signal very high, around +5V	Check air sleeve knob wiring Replace air sleeve knob
150	Wheel speed sensors redundancy alarm	Wheel speed sensors 1 and 2 mounted on front wheels doesn't match	Check wheel speed sensors wiring Replace wheel speed sensors 1 or 2
191	Tank level sensor alarm	Tank level sensor signal probably not properly connected. Signal very low, around 0mA or very high, around 20mA	Check tank level sensor wiring Replace tank level sensor
201 or 203	Cabin throttle knob channel 1 low signal	Cabin throttle knob probably not properly connected. Signal very low, around 0V	Check Cabin throttle knob wiring Replace Cabin throttle knob
202 or 204	Cabin throttle knob channel 1 high signal	Cabin throttle knob probably not properly connected. Signal very high, around +5V	Check Cabin throttle knob wiring Replace Cabin throttle knob
205 or 207	Cabin throttle knob channel 2 low signal	Cabin throttle knob probably not properly connected. Signal very low, around 0V	Check Cabin throttle knob wiring Replace Cabin throttle knob
206 or 208	Cabin throttle knob channel 2 high signal	Cabin throttle knob probably not properly connected. Signal very high, around +5V	Check Cabin throttle knob wiring Replace Cabin throttle knob
211	Cabin throttle knob redundancy alarm	Cabin throttle knob channel 1 or channel 2 not properly connected. The 2 channels potentiometers doesn't match	Check Cabin throttle knob wiring Replace Cabin throttle knob
221 or 223	Truck throttle knob channel 1 low signal	Truck throttle knob probably not properly connected. Signal very low, around 0V	Check Truck throttle knob wiring Replace Truck throttle knob
222 or 224	Truck throttle knob channel 1 high signal	Truck throttle knob probably not properly connected. Signal very high, around +5V	Check Truck throttle knob wiring Replace Truck throttle knob
225 or 227	Truck throttle knob channel 2 low signal	Truck throttle knob probably not properly connected. Signal very low, around 0V	Check Truck throttle knob wiring Replace Truck throttle knob
226 or 228	Truck throttle knob channel 2 high signal	Truck throttle knob probably not properly connected. Signal very high, around +5V	Check Truck throttle knob wiring Replace Truck throttle knob

Diagnostics and Troubleshooting

231	Truck throttle knob redundancy alarm	Truck throttle knob channel 1 or channel 2 not properly connected. The 2 channels potentiometers doesn't match	Check Truck throttle knob wiring Replace Truck throttle knob
252	Low oil level alarm	Low oil level sensor active	Check oil level Check oil level sensor
253	Back oil alarm	Back oil hydraulic circuit sensor active	Check oil circuit Check back oil sensor
254	Put oil alarm	Put oil hydraulic circuit sensor active	Check oil circuit Check put oil sensor
255	Air filter alarm	Engine air filter sensor active, analog or from engine CAN-BUS J1939	Check air filter Check air filter sensor or CAN-BUS J1939 line
256	Radiator oil temperature alarm	Radiator oil temperature sensor over a parametrized threshold	Check radiator oil Check radiator oil temperature sensor
271	JOHN DEERE ENGINE ECU CAN messages timeout	JOHN DEERE ENGINE ECU isn't present on CAN-BUS J1939 line	Check JOHN DEERE ENGINE ECU power supply Check JOHN DEERE ENGINE ECU CAN-BUS line connection
272	Poclain drive system fault	Some error occurs from Poclain drive system	Check on Tera10 display the proper error code Call Poclain assistance
273	POCLAIN ECU CAN messages timeout	POCLAIN ECU isn't present on CAN-BUS J1939 line	Check POCLAIN ECU power supply Check POCLAIN ECU CAN-BUS line connection
280	Rear rod angle sensor redundancy alarm	Rear rod angle sensor channel 1 or channel 2 not properly connected. The 2 channels potentiometers doesn't match	Check Rear rod angle sensor wiring Replace Rear rod angle sensor
281 or 283	Rear rod angle sensor channel 1 low signal	Rear rod angle sensor probably not properly connected. Signal very low, around 0V	Check Rear rod angle sensor wiring Replace Rear rod angle sensor
282 or 284	Rear rod angle sensor channel 1 high signal	Rear rod angle sensor probably not properly connected. Signal very high, around +5V	Check Rear rod angle sensor wiring Replace Rear rod angle sensor
285 or 287	Rear rod angle sensor channel 2 low signal	Rear rod angle sensor probably not properly connected. Signal very low, around 0V	Check Rear rod angle sensor wiring Replace Rear rod angle sensor
286 or 288	Rear rod angle sensor channel 2 high signal	Rear rod angle sensor probably not properly connected. Signal very high, around +5V	Check Rear rod angle sensor wiring Replace Rear rod angle sensor
290	Front wheels angle sensor redundancy alarm	Front wheels angle sensor channel 1 or channel 2 not properly connected. The 2 channels potentiometers doesn't match	Check Front wheels angle sensor wiring Replace Front wheels angle sensor
291 or 293	Front wheels angle sensor channel 1 low signal	Front wheels angle sensor probably not properly connected. Signal very low, around 0V	Check Front wheels angle sensor wiring Replace Front wheels angle sensor
292 or 294	Front wheels angle sensor channel 1 high signal	Front wheels angle sensor probably not properly connected. Signal very high, around +5V	Check Front wheels angle sensor wiring Replace Front wheels angle sensor
295 or 297	Front wheels angle sensor channel 2 low signal	Front wheels angle sensor probably not properly connected. Signal very low, around 0V	Check Front wheels angle sensor wiring Replace Front wheels angle sensor
296 or 298	Front wheels angle sensor channel 2 high signal	Front wheels angle sensor probably not properly connected. Signal very high, around +5V	Check Front wheels angle sensor wiring Replace Front wheels angle sensor
300	Rear wheels angle sensor redundancy alarm	Rear wheels angle sensor channel 1 or channel 2 not properly connected. The 2 channels potentiometers doesn't match	Check Rear wheels angle sensor wiring Replace Rear wheels angle sensor

Diagnostics and Troubleshooting

301 or 303	Rear wheels angle sensor channel 1 low signal	Rear wheels angle sensor probably not properly connected. Signal very low, around 0V	Check Rear wheels angle sensor wiring Replace Rear wheels angle sensor
302 or 304	Rear wheels angle sensor channel 1 high signal	Rear wheels angle sensor probably not properly connected. Signal very high, around +5V	Check Rear wheels angle sensor wiring Replace Rear wheels angle sensor
305 or 307	Rear wheels angle sensor channel 2 low signal	Rear wheels angle sensor probably not properly connected. Signal very low, around 0V	Check Rear wheels angle sensor wiring Replace Rear wheels angle sensor
306 or 308	Rear wheels angle sensor channel 2 high signal	Rear wheels angle sensor probably not properly connected. Signal very high, around +5V	Check Rear wheels angle sensor wiring Replace Rear wheels angle sensor

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Poclain Hydraulic Motors MHP11 Errors

1	LOW_VBAT	Vbat is too low.
2	HIGH_VBAT	Vbat is too high.
3	LOW_VBAT_D1	Vbat_D1 is too low.
4	LOW_VBAT_D2	Vbat_D2 is too low.
5	LOW_VBAT_D3	Vbat_D3 is too low.
6	VBATD_RELAY	Vbat_Dx relay is in incorrect state.
7	VBAT_BELOW_SPECIFIED	Vbat is below 12/24 specific range.
8	VBAT_ABOVE_SPECIFIED	Vbat is above 12/24 specific range.
10	5VOUT_UNDERVOLTAGE	5 V output is undervoltage.
11	5VOUT_OVERVOLTAGE	5 V output is overvoltage.
12	5VOUT_SC_VBAT	5 V output is shortcircuit to Vbat.
13	5VOUT_SC_GND	5 V output is shortcircuit to ground.
14	5VOUT_REGULATOR_UNDERVOLTAGE	5 V output regulator is undervoltage.
20	EEPROM	Indicates EEPROM error.
22	OVER_TEMPERATURE_YELLOW	Over temperature <= 25 s (yellow zone).
24	OVER_CURRENT_ORANGE	It indicates ECU over current (orange zone warning).
25	OVER_TEMPERATURE_RED	It indicates ECU over temperature (red zone warning).
26	INT_VOLTAGE_FAILURE_RED	It internal voltage out of range (red zone warning).
27	OVER_CURRENT_RED	It indicates ECU over current (red zone warning).
28	ADC_FAILURE_RED	ADC reference voltage out of range (red zone warning).
29	SPI_FAILURE_RED	SPI bus failure (red zone warning).
30	GROUND_FAILURE_RED	GND lost detected (red zone warning).
40	PARAM_CHECKSUM	Parameter EEPROM checksum error.
41	PARAM_MINMAX	Parameter min/max (maximum or minimum) error.
42	PARAM_EEPNOTREAD	Parameter can not be read from EEPROM.
44	PARAM_EEPNOTSAVED	Parameter not saved to EEPROM.
50	INCOMPATIBLE_HW	Indicates incompatible hardware.
51	CAN_ADDRESS_MISMATCH	Mismatch between initial and current ECU address (TSA80).
54	VIO_CONFIG	Configuration of virtual inputs and outputs is not correct.
55	IO_CONFIG	Input-output configuration error.
56	LSD	Error of activation/deactivation of LSD12 or LSD34.
60	5VREF_UNDERVOLTAGE	5VRef is undervoltage.
61	5VREF_OVERVOLTAGE	5VRef is overvoltage.
62	VBATB_UNDERVOLTAGE	VbatB is undervoltage.
63	VBATB_OVERVOLTAGE	VbatB is overvoltage.
101	SCVBAT_PWM1	PWM1 out, is short circuit to Vbat.

Diagnostics and Troubleshooting

102	SCVBAT_PWM2	PWM2 out, is short circuit to Vbat.
103	SCVBAT_PWM3	PWM3 out, is short circuit to Vbat.
104	SCVBAT_PWM4	PWM4 out, is short circuit to Vbat.
105	SCVBAT_PWM5	PWM5 out, is short circuit to Vbat.
106	SCVBAT_PWM6	PWM6 out, is short circuit to Vbat.
107	SCVBAT_PWM7	PWM7 out, is short circuit to Vbat.
108	SCVBAT_PWM8	PWM8 out, is short circuit to Vbat.
131	SCGND_PWM1	PWM1 out, is short circuit to GND (or overcurrent).
132	SCGND_PWM2	PWM2 out, is short circuit to GND (or overcurrent).
133	SCGND_PWM3	PWM3 out, is short circuit to GND (or overcurrent).
134	SCGND_PWM4	PWM4 out, is short circuit to GND (or overcurrent).
135	SCGND_PWM5	PWM5 out, is short circuit to GND (or overcurrent).
136	SCGND_PWM6	PWM6 out, is short circuit to GND (or overcurrent).
137	SCGND_PWM7	PWM7 out, is short circuit to GND (or overcurrent).
138	SCGND_PWM8	PWM8 out, is short circuit to GND (or overcurrent).
161	OC_PWM1	PWM1 out, is open circuit.
162	OC_PWM2	PWM2 out, is open circuit.
163	OC_PWM3	PWM3 out, is open circuit.
164	OC_PWM4	PWM4 out, is open circuit.
165	OC_PWM5	PWM5 out, is open circuit.
166	OC_PWM6	PWM6 out, is open circuit.
167	OC_PWM7	PWM7 out, is open circuit.
168	OC_PWM8	PWM8 out, is open circuit.
191	EP_PWM1	PWM1 out, indicates electrical problem.
192	EP_PWM2	PWM2 out, indicates electrical problem.
193	EP_PWM3	PWM3 out, indicates electrical problem.
194	EP_PWM4	PWM4 out, indicates electrical problem.
195	EP_PWM5	PWM5 out, indicates electrical problem.
196	EP_PWM6	PWM6 out, indicates electrical problem.
197	EP_PWM7	PWM7 out, indicates electrical problem.
198	EP_PWM8	PWM8 out, indicates electrical problem.
221	SCVBAT_DIGOUT1	DIG1 out, is short circuit to Vbat.
222	SCVBAT_DIGOUT2	DIG2 out, is short circuit to Vbat.
223	SCVBAT_DIGOUT3	DIG3 out, is short circuit to Vbat.
224	SCVBAT_DIGOUT4	DIG4 out, is short circuit to Vbat.
225	SCVBAT_DIGOUT5	DIG5 out, is short circuit to Vbat.
226	SCVBAT_DIGOUT6	DIG6 out, is short circuit to Vbat.
227	SCVBAT_DIGOUT7	DIG7 out, is short circuit to Vbat.
228	SCVBAT_DIGOUT8	DIG8 out, is short circuit to Vbat.
251	SCGND_DIGOUT1	DIG1 out, is short circuit to GND (or overcurrent).
252	SCGND_DIGOUT2	DIG2 out, is short circuit to GND (or overcurrent).
253	SCGND_DIGOUT3	DIG3 out, is short circuit to GND (or overcurrent).
254	SCGND_DIGOUT4	DIG4 out, is short circuit to GND (or overcurrent).
255	SCGND_DIGOUT5	DIG5 out, is short circuit to GND (or overcurrent).
256	SCGND_DIGOUT6	DIG6 out, is short circuit to GND (or overcurrent).
257	SCGND_DIGOUT7	DIG7 out, is short circuit to GND (or overcurrent).
258	SCGND_DIGOUT8	DIG8 out, is short circuit to GND (or overcurrent).
281	OC_DIGOUT1	DIG1 out, is open circuit.
282	OC_DIGOUT2	DIG2 out, is open circuit.
283	OC_DIGOUT3	DIG3 out, is open circuit.
284	OC_DIGOUT4	DIG4 out, is open circuit.
285	OC_DIGOUT5	DIG5 out, is open circuit.
286	OC_DIGOUT6	DIG6 out, is open circuit.

Diagnostics and Troubleshooting

287	OC_DIGOUT7	DIG7 out, is open circuit.
288	OC_DIGOUT8	DIG8 out, is open circuit.
311	EP_DIGOUT1	DIG1 out, indicates electrical problem.
312	EP_DIGOUT2	DIG2 out, indicates electrical problem.
313	EP_DIGOUT3	DIG3 out, indicates electrical problem.
314	EP_DIGOUT4	DIG4 out, indicates electrical problem.
315	EP_DIGOUT5	DIG5 out, indicates electrical problem.
316	EP_DIGOUT6	DIG6 out, indicates electrical problem.
317	EP_DIGOUT7	DIG7 out, indicates electrical problem.
318	EP_DIGOUT8	DIG8 out, indicates electrical problem.
341	SCVBAT_LSD1	LSD1, is short circuit to Vbat (or overcurrent).
342	SCVBAT_LSD2	LSD2, is short circuit to Vbat (or overcurrent).
343	SCVBAT_LSD3	LSD3, is short circuit to Vbat (or overcurrent).
344	SCVBAT_LSD4	LSD4, is short circuit to Vbat (or overcurrent).
345	SCVBAT_LSD5	LSD5, is short circuit to Vbat (or overcurrent).
346	SCVBAT_LSD6	LSD6, is short circuit to Vbat (or overcurrent).
371	SCGND_LSD1	LSD1, is short circuit to GND.
372	SCGND_LSD2	LSD2, is short circuit to GND.
373	SCGND_LSD3	LSD3, is short circuit to GND.
374	SCGND_LSD4	LSD4, is short circuit to GND.
375	SCGND_LSD5	LSD5, is short circuit to GND.
376	SCGND_LSD6	LSD6, is short circuit to GND.
401	OC_LSD1	LSD1, is open circuit.
402	OC_LSD2	LSD2, is open circuit.
403	OC_LSD3	LSD3, is open circuit.
404	OC_LSD4	LSD4, is open circuit.
405	OC_LSD5	LSD5, is open circuit.
406	OC_LSD6	LSD6, is open circuit.
407	CANDISPLAY_CONFIG	Wrong graphical CAN display configuration.
1003	PRM_WRONG_PARAM_CFG_FILE_CHECKSUM	Wrong parameters configured.
1004	OE_OUTPUTONINGSS	Output is activated in general safe state.
1005	SYSTEM_INIT_FAILURE	System initialization failed.
1006	DEV_INIT_FAILURE	Device initialization failed.
1042	DEV_CALIB_NOT_DONE	Calibrate devices and restart ECU.

1045	VDIGIN_NOT_LINKED_TO_DIGIN	Virtual digital input not linked to the physical input.
1046	VANAIN_NOT_LINKED_TO_ANAIN	Virtual analog input not linked to the physical input.
1047	VFREQIN_NOT_LINKED_TO_FREQIN	Virtual frequency input not linked to the physical input.
1048	VDIGOUT_NOT_LINKED_TO_DIGOUT	Virtual digital output not linked to the physical output.
1049	VPWMOUT_NOT_LINKED_TO_PWMOUT	Virtual PWM output not linked to the physical output.
1050	VLSDOUT_NOT_LINKED_TO_LSDOUT	Virtual LSD output not linked to the physical output.
1101	MAF_LOADING	MAF loading from EEPROM failed.
1102	MAF_KEY_LOADING	MAF key loading from EEPROM failed.
1103	MAF_KEY_INVALID	MAF key is not valid.
1104	MAF_INCONSISTENT	MAF is not consistent with MAF rules.
1105	MAF_RAM_CORRUPT	MAF in RAM is corrupted, backup used.
1106	MAF_RAM_FATAL_CORRUPT	MAF and backup MAF in RAM is corrupted.
1107	MAF_NEW_MAF_IN_EEPROM	New MAF in EEPROM, reset ECU.
1108	MAF_NOT_COMPATIBLE_WITH_ECU	MAF is not compatible with ECU on which software is running.

Diagnostics and Troubleshooting

2500	UNDEFINED_ERROR	Undefined error, triggered when requested error code not found.
3000	PUMP_CONFIG	Wrong configuration of pump type or voltage.
3001	LOOP_P1	Loop error on pump 1.
3002	LOOP_P2	Loop error on pump 2.
3011	FB_P1	Feedback sensor connection error on pump 1.
3012	FB_P2	Feedback sensor connection error on pump 2.
3021	DRIFT_P1	Drift too high on pump 1.
3022	DRIFT_P2	Drift too high on pump 2.
3031	CNX_P1S1	Solenoid 1 connection error on pump 1.
3032	CNX_P2S1	Solenoid 1 connection error on pump 2.
3041	CNX_P1S2	Solenoid 2 connection error on pump 1.
3042	CNX_P2S2	Solenoid 2 connection error on pump 2.
3051	CNX_P1CUTOFF	Cutoff connection error on pump 1.
3052	CNX_P2CUTOFF	Cutoff connection error on pump 2.
3071	CUTOFF_P1	Cutoff is active while not powered.
3072	CUTOFF_P2	Cutoff is active while not powered on pump 2.
4001	SIGNALOUTOFRANGE_JOY1	Signal out of range for joystick 1.
4006	SIGNALOUTOFRANGE_ACCJOY	Signal out of range for acceleration joystick.
4011	SIGNALOUTOFRANGE_JOY_2SIG	Redundant signal out of range for 2-signal joystick.
4016	SIGNALOUTOFRANGE_ACCJOY_2SIG	Redundant signal out of range for 2-signal of acceleration joystick

4021	SIGNALINCONSISTENCY_JOY_2SIG	2-signal joystick has analog signal inconsistency.
4026	SIGNALINCONSISTENCY_ACCJOY_2SIG	2-signal acceleration joystick has analog signal inconsistency.
4031	SIGNALINCONSISTENCY_JOY1	Switch indicates neutral/signal indicates out of neutral for joystick 1.
4035	SIGNALINCONSISTENCY_DIRSWITCH_JOY	Direction switches are not at low state and joystick is used.
4036	SIGNALINCONSISTENCY_ACCJOY2	Switch indicates neutral/signal indicates out of neutral for acceleration joystick.
4041	SIGNALOUTOFRANGE_TP1	Signal out of range for travel pedal 1.
4051	SIGNALOUTOFRANGE_TP_2SIG	Redundant signal out of range for 2-signal travel pedal.
4061	SIGNALINCONSISTENCY_TP_2SIG	2-signal pedal analog signal inconsistency.
4071	SIGNALOUTOFRANGE_CMDLIMITER1	Signal out of range for command limiter 1.
4081	SIGNALOUTOFRANGE_BPEDAL1	Signal out of range for brake pedal 1.
4091	SIGNALOUTOFRANGE_BPEDAL_2SIG	Redundant signal out of range for 2-signal brake pedal.
4101	SIGNALINCONSISTENCY_BPEDAL_2SIG	2-signal brake pedal analog signal inconsistency.
4111	BRAKE_SENSOR	Signal out of range for brake pressure sensor.
4121	PRESSURE_SENSOR_A	Signal out of range for pressure sensor A on pump 1.
4122	PRESSURE_SENSOR_A_2	Signal out of range for pressure sensor A on pump 2.
4131	PRESSURE_SENSOR_B	Signal out of range for pressure sensor B on pump 1.
4132	PRESSURE_SENSOR_B_2	Signal out of range for pressure sensor B on pump 2.
4161	PUMP_SPEED_SENSOR	Signal out of range for pump speed sensor.
4171	ENGINE_SPEED_SENSOR	Signal out of range for engine speed sensor.
4175	ENGINE_SPEED_TOOHIGH	Value of engine speed is higher than parameter.
4181	WHEEL_SPEED_SENSOR_1	Signal out of range for wheel speed sensor 1.
4182	WHEEL_SPEED_SENSOR_2	Signal out of range for wheel speed sensor 2.
4201	SIGNALINCONSISTENCY_DIR1	Direction switches inconsistently.
4211	OPERATOR_NOT_PRESENT	Operator is not present during machine run.
4212	OVERTEMP_TEMPERROR	Transmission temperature sensor error.

Diagnostics and Troubleshooting

4213	OVERTEMP_SPEEDREDUCED	Transmission temperature too high. Machine speed is reduced.
4214	OVERTEMP_STOPMACHINE	Transmission temperature critical. Machine should be stopped.
4215	SIGNALOUTOFRANGE_ENGINEPOTENTIOMETER	Signal out of range for engine speed command potentiometer 1 (in cabin).
4216	SIGNALOUTOFRANGE_ENGINEPOTENTIOMETER_2	Signal out of range for engine speed command potentiometer 2 (outside).

4242	MAX_MACHINE_SPEED_REDUCED_BRAKEACU	Maximum machine speed reduced, brake pressure empty.
4500	ACCJOY_INTERPOLATION_SETTING_ERROR	Wrong parameter setting.
4501	ACCJOY_SPEEDS_CONSISTENCY_ERROR	Theoretical and actual machine speeds are not aligned.
6001	EEC1_NOT_RECEIVED	EEC1 CAN message from engine not received.
6002	EEC2_NOT_RECEIVED	EEC2 CAN message from engine not received.
6028	FUEL_ECO_NOT_RECEIVED	LFE CAN message from engine not received.
6069	TSC1_CST_SPD_CMD_MESSAGE_NOT_RECEIVED	CAN message TSC1 for constant engine speed cmd to SD-CT not received.
6071	PHCMD1_MESSAGE_NOT_RECEIVED	CAN message PHCMD1 not received.
6072	DM14_EEPROM_WRITE_LIMIT	DM14 writing to EEPROM exceeds allowed limit.
6073	DM14_EEPROM_WRITE_LIMIT_PERIODIC	DM14 writing to EEPROM within a time period exceeds allowed limit.
6076	CANJOY1_MESSAGE_NOT_RECEIVED	CAN message BJMx from CAN joystick not received.
6410	CANJOY1_INCONSIST_DATA	Received BJMx message is not consistent.
7000	SHIFT_MOT_DISPL_CFG_PARAM_WRONG	Wrong motor displacement configuration parameter (too low or high number of digits or digits not in correct range).
7001	SHIFT_MOT_DISPL_CFG_PARAM_INCONSIST	Motor displacement configuration parameters are inconsistent with pump configuration.

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John Deere Engines—Diagnostic Trouble Codes List (DTC)

IMPORTANT: The codes mentioned below are not used in all the engine applications. The entire list of DTCs are not listed below.

- To use the table below, first write the SPN and FMI codes that are received from the engine diagnostic display.
- Locate each SPN and its associated definition.
- In the same way, locate the FMI and its associated definition.

- There are several possible combinations of SPN and FMI codes.

FMI Code	FMI Name
0	Extremely High
1	Extremely Low
2	Invalid
3	Out of Range High
4	Out of Range Low
5	High Resistance
6	Low Resistance
7	Mismatch
8	Signal Missing
9	Loss of Communication
10	Abnormal Change
11	Activated

Diagnostics and Troubleshooting

12	Error
13	Fault
14	Incorrect Message
15	Slightly High
16	Moderately High
17	Slightly Low
18	Moderately Low
19	Communication Error
31	Condition Exists

SPN Code	SPN Name
27	EGR Valve Position Signal
51	Air Throttle Actuator Position Signal
94	Low Fuel Pressure Signal
97	Water-in-Fuel Signal
100	Engine Oil Pressure Signal
101	Crankcase Pressure
102	Manifold Air Pressure Signal

SPN Code	SPN Name
103	VGT Speed Signal
105	Manifold Air Temperature Signal
107	Air Filter Pressure Differential
108	Barometric Pressure Signal
109	Engine Coolant Pressure Signal
110	Engine Coolant Temperature Signal
111	Engine Coolant Level Alarm Switch
157	Fuel Rail Pressure Signal
158	ECU Power Down
168	Unswitched Battery Voltage
174	Fuel Temperature Signal
189	Engine Speed Derate
190	Engine Speed
412	EGR Temperature Signal
611	Injector Drive 1
612	Injector Drive 2
613	Fuel Pressure Control Valve Drive
629	ECU EEPROM
636	Camshaft Position Signal
637	Crankshaft Position Signal
651	Injector 1
652	Injector 2
653	Injector 3
654	Injector 4
655	Injector 5
656	Injector 6
695	Unapproved Engine Speed Request
970	External Shutdown Switch
1075	Low Pressure Fuel Pump Data
1136	ECU Temperature Signal

Diagnostics and Troubleshooting

1172	Intake Air Temperature
1176	Intake Air Pressure
1180	Calculated VGT Turbine Inlet Temp
1209	Exhaust Manifold Pressure Signal
1213	Malfunction Indicator Lamp
1347	Fuel Pressure Pump Control Valve 1
1348	Fuel Pressure Pump Control Valve 2
1321	Engine Starter Control Circuit
1569	Engine Power Derate
1761	DEF Tank Fuel Level Signal
2002-2253	Source Address 2—253
2629	Fixed Turbo Comp Outlet Temp Signal
2630	Charge Air Cooler Outlet Temp Signal
2659	EGR Flow Signal

SPN Code	SPN Name
2790	Fixed Turbocharger Comp Outlet Temp
2791	EGR Valve Drive Circuit
2795	VGT Calibration Version
2797	Injector High Voltage Supply #1
2798	Injector High Voltage Supply #2
3031	DEF Tank Fluid Temp Signal
3216	DPF Outlet NOx
3226	SCR Outlet NOx
3246	DPF Outlet Temperature
3251	DPF Differential Pressure Signal
3361	DEF Dosing Injector Signal
3464	Air Throttle Actuator Drive Circuit
3509	Sensor Supply 1 Voltage
3510	Sensor Supply 2 Voltage
3511	Sensor Supply 3 Voltage
3512	Sensor Supply 4 Voltage
3513	Sensor Supply 5 Voltage
3514	Sensor Supply 6 Voltage
3516	Aftertreatment DEF Concentration
3517	DEF Tank Fluid Level
3597	Injector Power Supply Voltage
3719	Calculated Soot Level
3720	Calculated Ash Level
3936	DPF Fault Occurrences
4334	DEF Dosing Unit Outlet Pressure
4341	DEF Dosing Unit Pressure Line Heater
4343	DEF Dosing Unit Supply Line Heater
4345	DEF Dosing Unit Return Line Heater
4360	SCR Inlet Temperature
4363	SCR Outlet Temperature
4364	SCR Catalyst Conversion Efficiency
4366	DEF Tank Heater Coolant Valve
4376	Reversing Valve
4490	Intake Air Humidity
4765	DOC Inlet Temp
4766	DOC Outlet Temp

4795	DPF Missing
5018	DOC Fault Occurrences
5125	Sensor Supply #7 Voltage
5126	Sensor Supply #8 Voltage
5298	Sensor Supply #9 Voltage
5127	DOC Efficiency
5435	DEF Dosing Unit Pump

SPN Code	SPN Name
5571	HPCR Pressure Relief Valve
5743	SCR Temperature Module
5745	DEF Dosing Unit Heater
522494	Intake Air Sensor Communication
522495	Exhaust Filter Temperature Module

Diagnostic Trouble Codes (DTCs)—Operation SPN/FMI codes

- Stored and active diagnostic trouble codes (DTCs) are displayed on the diagnostic display on the John Deere electronic instrument panel according to the J1939 standard as a two-part code. See Diagnostics and Troubleshooting section.
- The first part is a suspect parameter number (SPN) followed by a failure mode identifier (FMI) code.
- In order to determine the exact failure, both parts (SPN and FMI) of the code are needed.
- SPN identifies the system or the component that has the failure (for example SPN 000110 indicates a failure in the engine coolant temperature circuit).
- FMI identifies the type of failure that has occurred (for example FMI 03 indicates value above normal).
- Combining SPN 000110 with FMI 03 yields a fault code engine coolant temperature input voltage too high.
- A corrective action is displayed, check the sensor and wiring.
- If this check does not resolve the engine issue, see your John Deere dealer or other service provider for more information about the engine issue.
- See your John Deere dealer or other service provider for help in correcting unsolved diagnostic trouble codes (DTCs) displayed for the engine.

AWQNIWX,1755072383721-19-18AUG25

Diagnostic Functions on the Tera Display 10



TG640727—UN—26JUL24

The Tera display allows to access the diagnostic device page in the superior bar. The diagnostic page provides access to several machine control unit, as shown below:

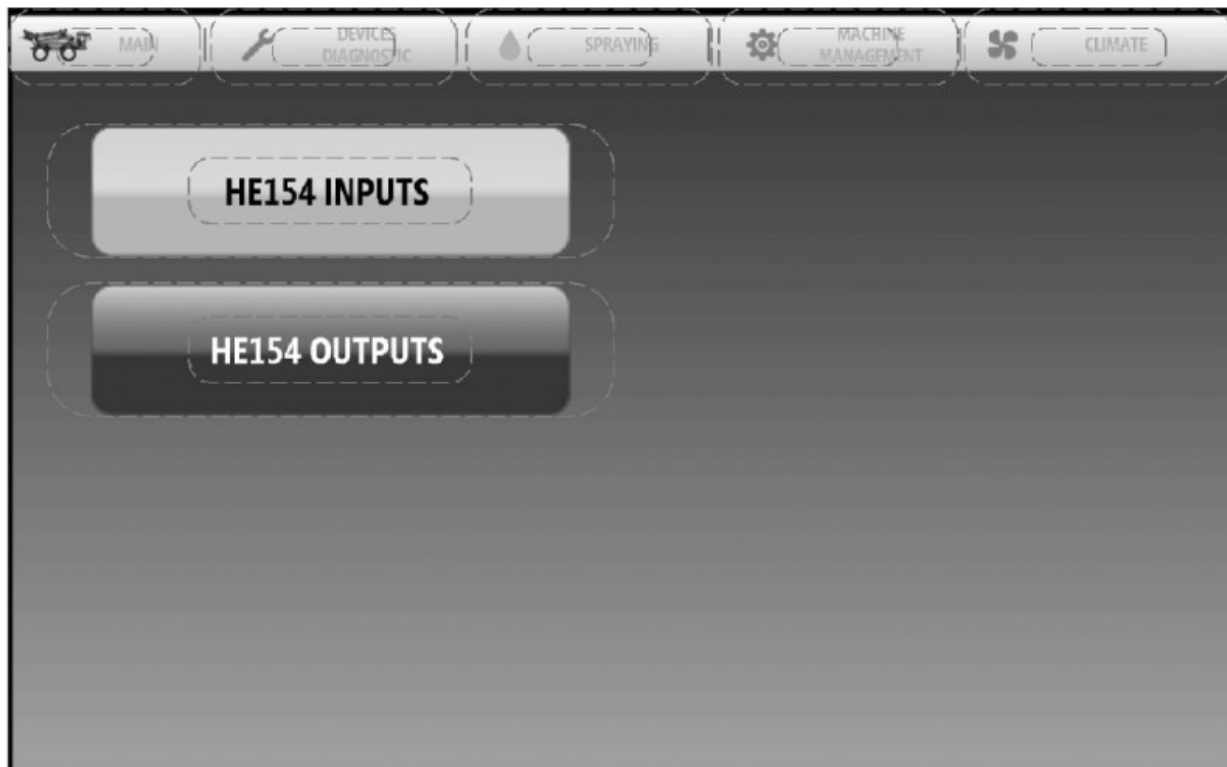
When the controller's diagnostic page is accessed, the following fields are available:

- Digital inputs: Every square means each digital input associated with the controller.
- Digital outputs: Every square means each digital output associated with the controller.
- Analog inputs: Displays analog data linked to controller referring to controller's pin.
- Power supply: The box represents the status of outputs dedicated to stabilized power supply for external sensors.

Interpretation of the square displayed (in different colors):

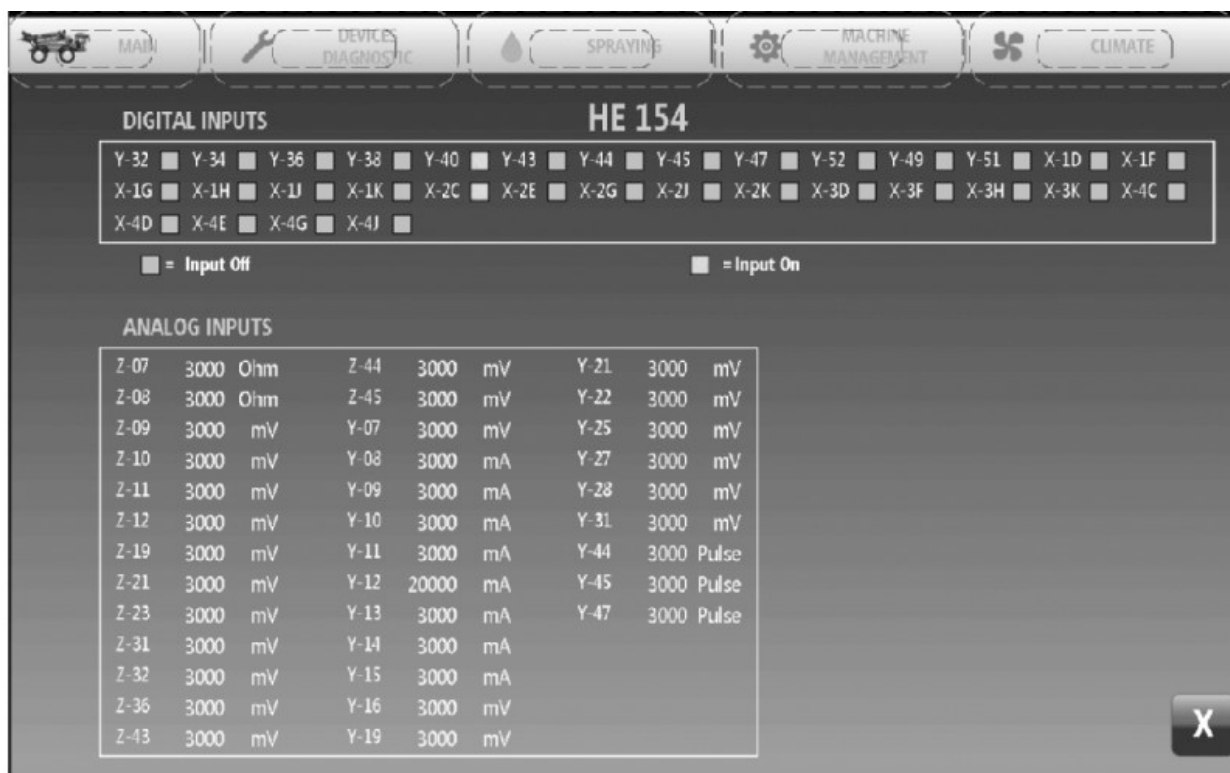
- **Gray:** Digital input (or output) in OFF status.
- **Green:** Digital input (or output) in ON status.
- **Yellow:** Digital input (or output) in software ON status, but without power.
- **Red:** Digital input (or output) in software OFF status, but with power (electric output broken or in short-circuit).

1. HE154 - Primary Vehicle Controller



TG645233—UN—28AUG24

HE154 Screen



TG645234—UN—28AUG24

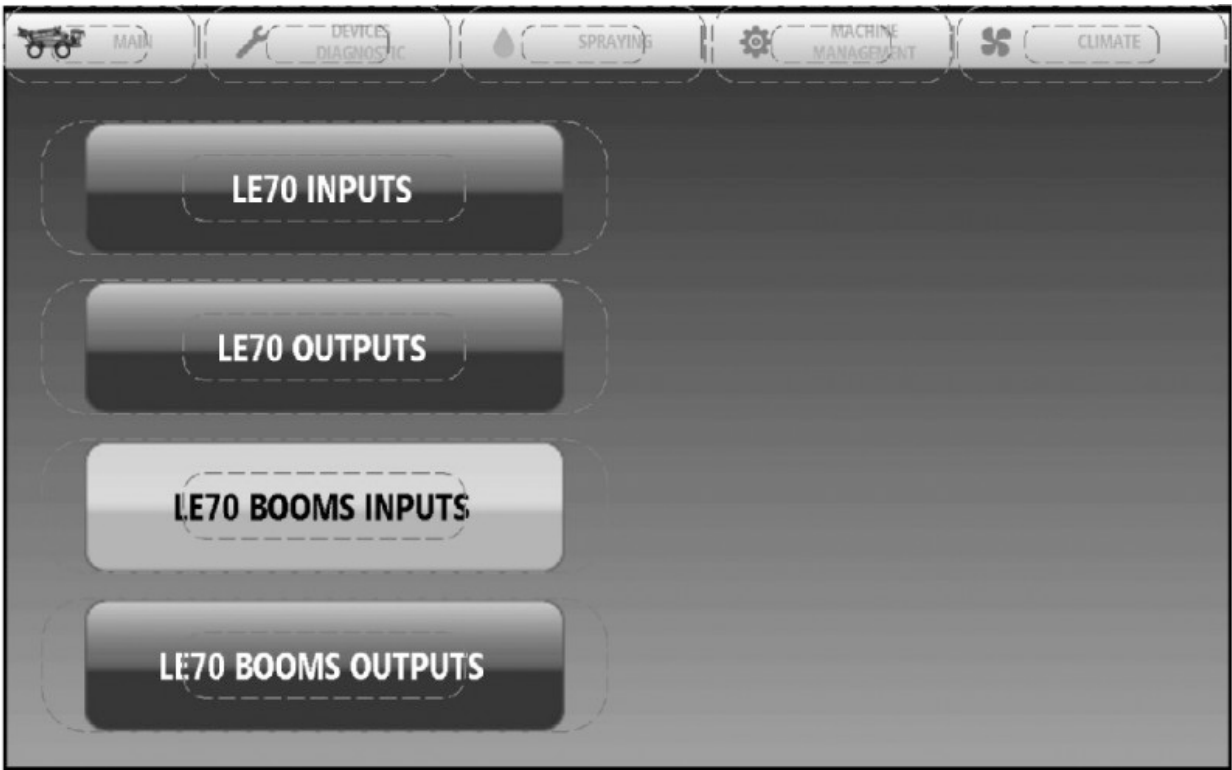
HE154 Inputs Screen



TG645235—UN—28AUG24

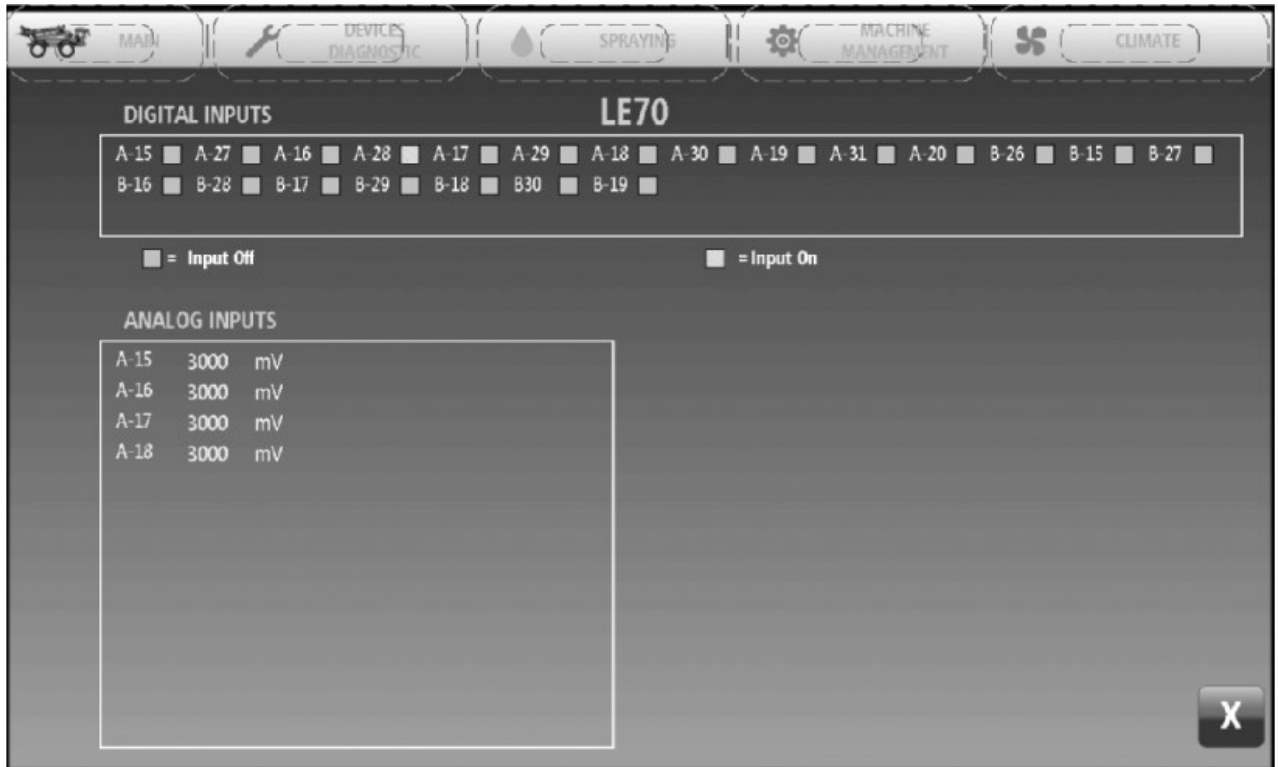
HE154 Outputs Screen

2.LE70 - Secondary Vehicle Controller



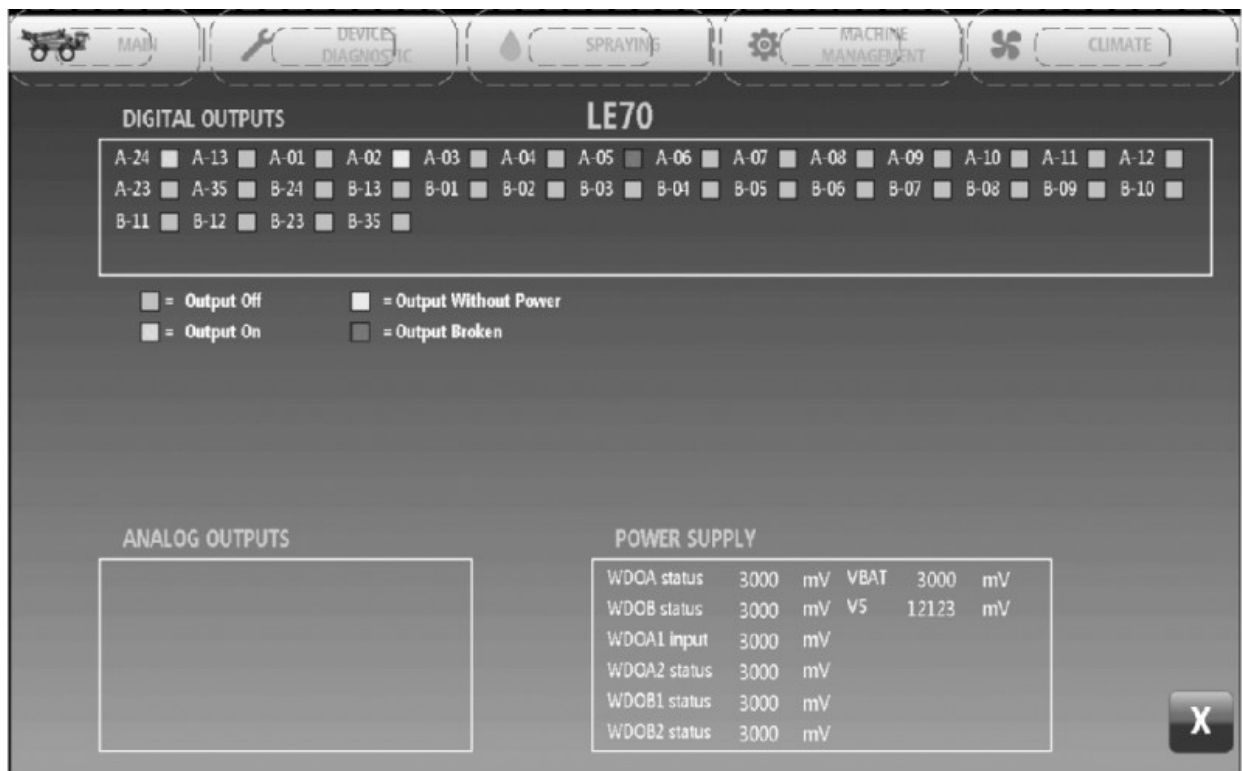
TG645236—UN—28AUG24

LE70 Screen



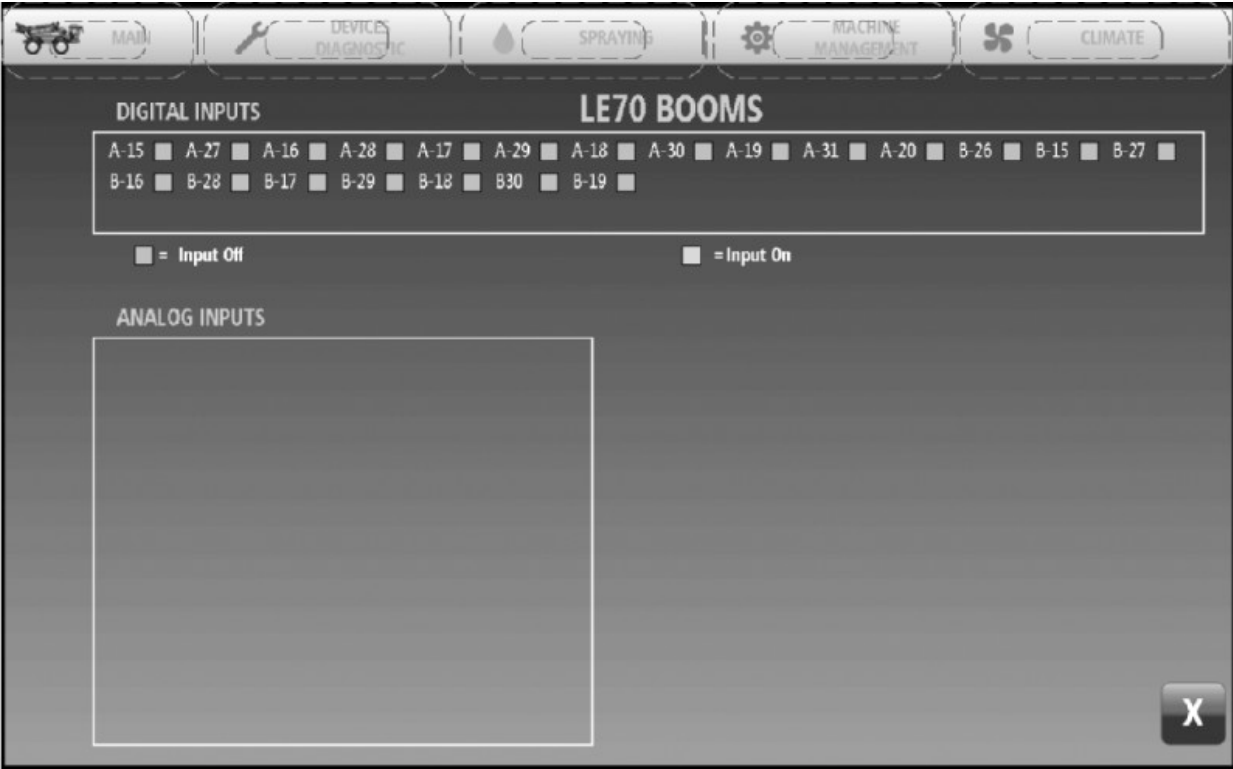
TG645237—UN—28AUG24

LE70 Input Screen



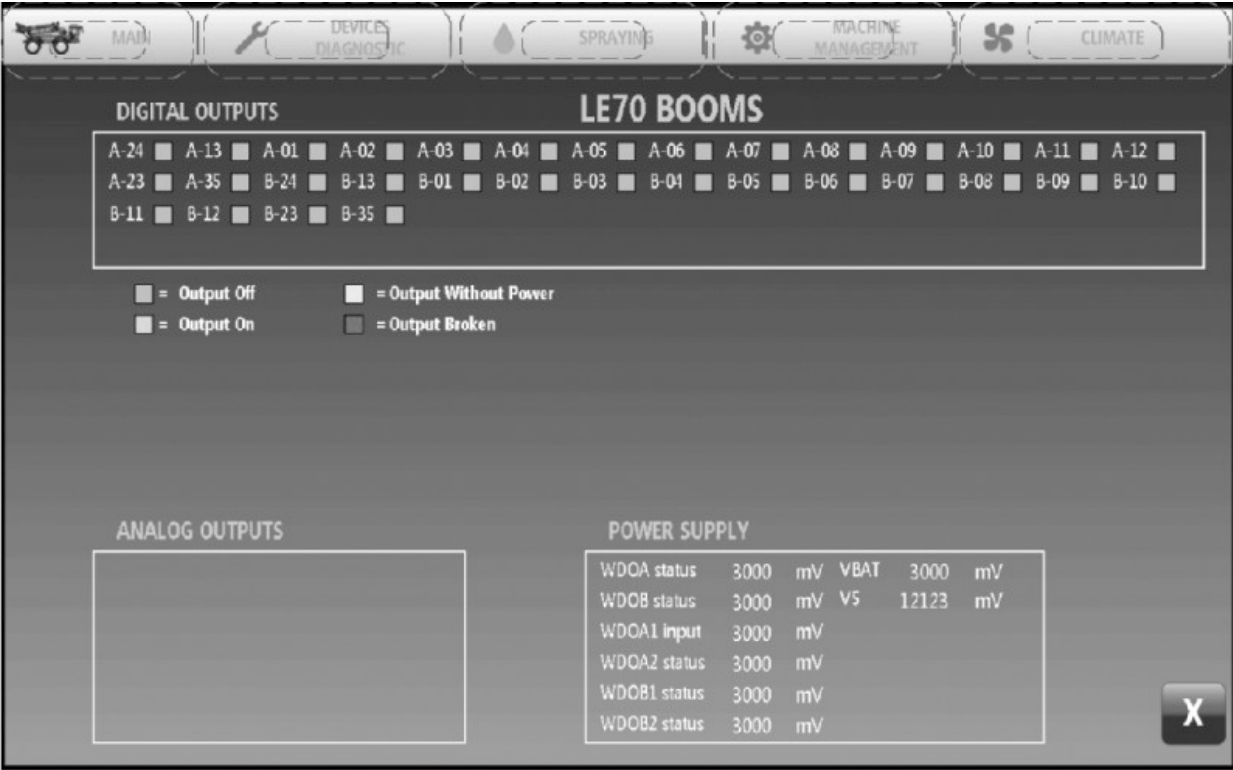
TG645238—UN—28AUG24

LE70 Output Screen



TG645264—UN—28AUG24

LE70 Boom Input Screen



TG645265—UN—28AUG24

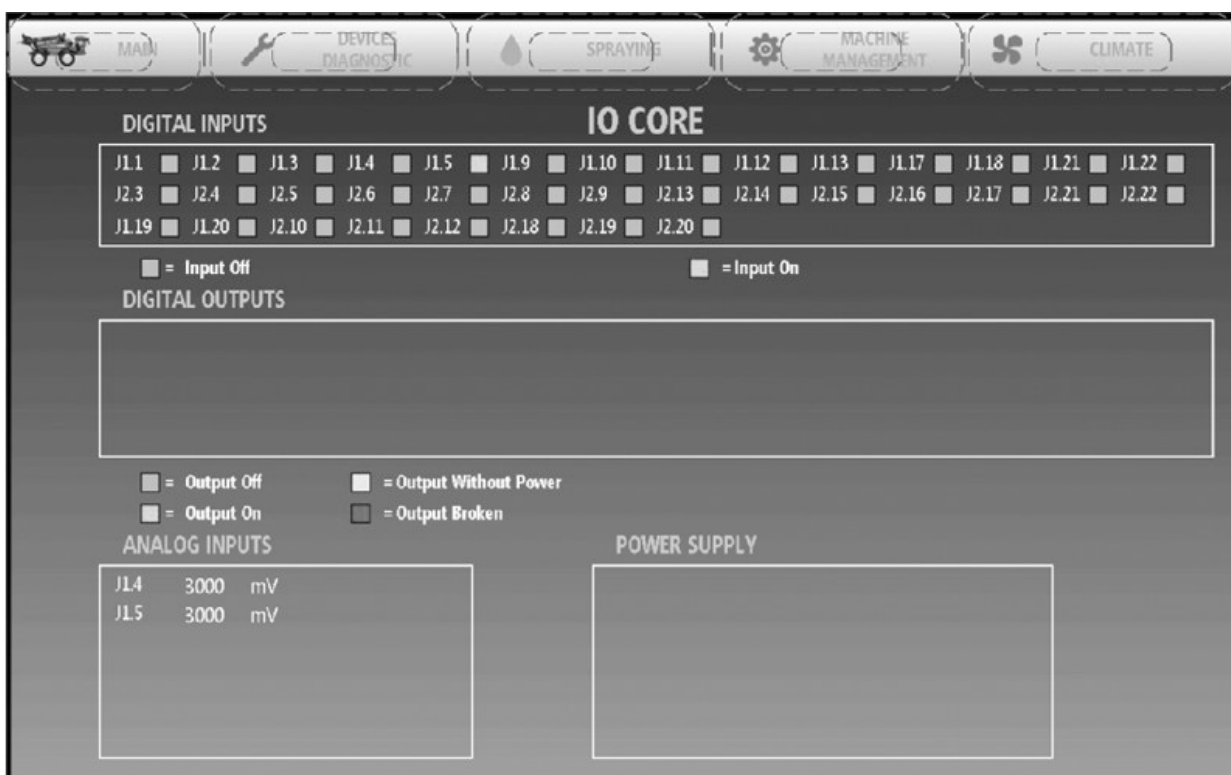
LE70 Boom Output Screen



Liberty Link Screen

TG648228—UN—20SEP24

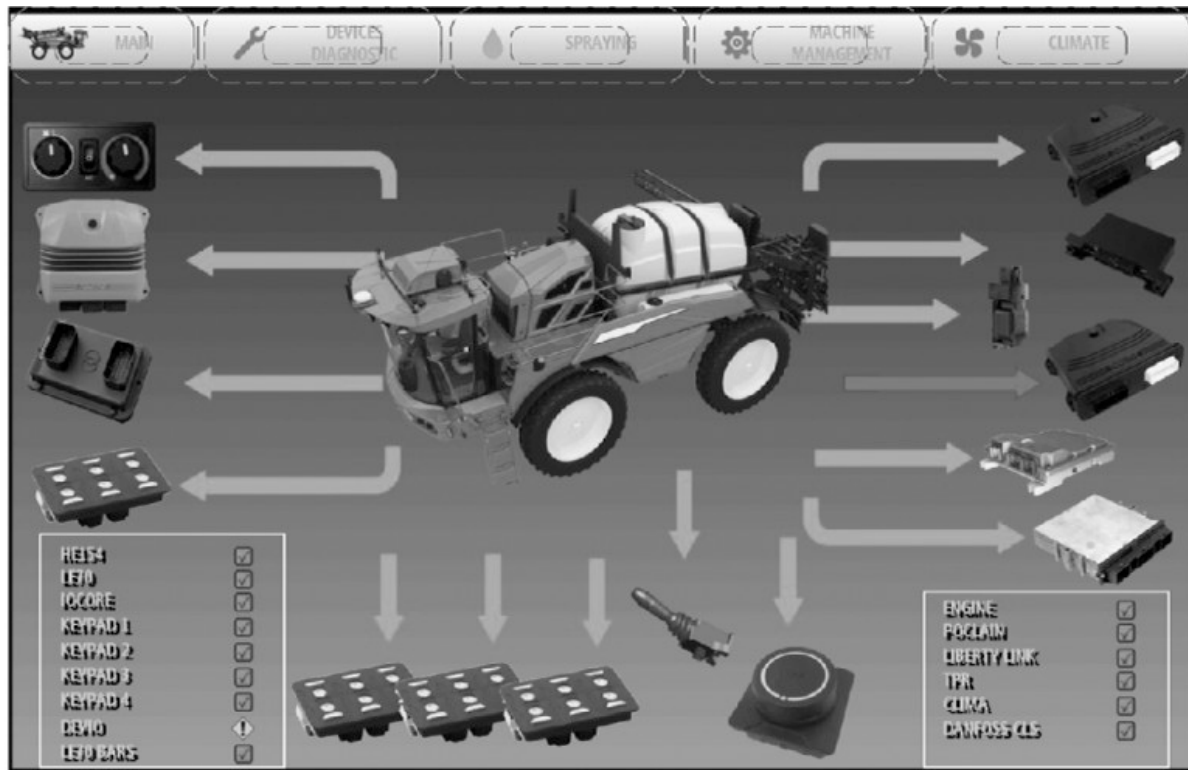
4.IO Core



IO Core Screen

TG645267—UN—28AUG24

5. CAN Line



CAN Line Screen

TG645268—UN—28AUG24

This screen provides access to all machine controllers. If the icon beside controllers displays green icons means it has no issues. If the icon beside controllers display yellow icons means that controller require investigation or may not be presented on the machine.

awqniwx,1724845372248-19-20SEP24

Specifications

Machine Specifications

Engine		
Machine Model Type	MAF 32 Diesel EU Stage V	MAF 40 Diesel EU Stage V
Manufacturer	John Deere	John Deere
Model	4045HN056 PowerTech™ PSS	6068HN075 6.8L PVS
Number of Cylinders	4	6
Bore and Stroke	106 mm (4.19 in) x 127 mm (5 in)	106 mm (4.19 in) x 127 mm (5 in)
Displacement	4.5 L (276 cu. in.)	6.8 L (415 cu. in.)
Maximum Power	129 kW	168 kW
Maximum Torque	667 N.m @ 1500 rpm	970 N.m @ 1600 rpm
Compression Ratio	19.0:1	16.7:1
Firing Order	1-3-4-2	1-5-3-6-2-4
Type of Fuel	Diesel	Diesel
Fuel System	High Pressure Common Rail (HPCR)	High Pressure Common Rail (HPCR)

PowerTech is a trademark of Deere & Company

Hydrostatic System	
Type: Hydrostatic Drive	Closed Circuit
Pump	Sauer Hydrostatic Pump Drive 90R75/H1-78, Variable Displacement
Wheel Motors	MHP11 (1400 cm3/rev) - 1C, 2C, 3C, 4C MS08 HF (1248 cm3/rev) - 1C, 2C

Brakes	
MHP11 Hyd Motor	Hydrostatic, Service, Parking and Emergency Brakes
MS08 HF Hyd Motor	Service, Parking and Emergency Brakes

Capacities		
Machine Model	MAF 32	MAF 40
Main Tank	3200 L	4000 L
Rinse Water Tank	230 L	460 L
Eductor	50 L	50 L
Diesel Exhaust Fluid (DEF) Tank	21 L	21 L
Hydraulic Reservoir	170 L	170 L
Diesel Reservoir	300 L	
Hand Washing Tank	15 L	15 L
Engine Oil Pan	20.5 L (stage V engine)	33 L (stage V engine)

Electrical System	
Battery	12 V, 95 Ah
Battery Terminal Grounded	Negative
Alternator	14 V, 150 A, Voltage Regulated
Starter Motor	12 V, 3 kW

Specifications

Hydraulic System	
Type	Pressure Compensated Load Sensing
Pump	Axial Piston Type

Ground Speed (Dependent on tire option, machine weight, and soil condition)		
	MS08 HF	MHP11
1C	20 km/h	10 km/h
2C	40 km/h	17 km/h
3C	Not Applicable	25 km/h
4C	Not Applicable	50 km/h

Steering System	
Type	Electrohydraulic, 4 WS, 2 WS, Craddle (closed circuit with wheel angle sensors)
Control	Hydrostatic Pump 17 cc and Steering controller
Operation	Two Double Acting Cylinders

Air Conditioning	
Manufacturer	John Deere
Refrigerant (R-134a)	1 kg
Compressor	Denso

Operator Station	
Type	Air Conditioned with Air Suspension Seat
Air Filters	John Deere Activated Carbon Air Filters
Cat IV System	Designed by SEA SRL

Solution System	
Standard	330 L/min @ 20 Bar (Immovili) - Base
MSpray	MSpray System: Centrifical Spray Pump 750 L/min (pump output), Dedicated Fill Pump (600 L/min) 2" System

Boom Types		
Machine Model	MAF 32	MAF 40
24 m Ti-M	Yes	Yes
28 m Ti-M	Yes	Yes
24 m MK	Yes	Yes
28 m MK	Yes	Yes
30/24 m MK	No	Yes
33/24 m MK	No	Yes
36/24 m MK	No	Yes

Specifications

Machine Gradeability (Dependent on tire option, machine weight, and soil condition)		
Machine Model	MAF 32	MAF 40
Speed	5 km/h	5 km/h
Spray Tank	1600 L	2000 L
Type of Soil	Dry and Compact	Dry and Compact
Slope	18 degrees	18 degrees
Observation	Measurements executed with tires 480/70R38, boom 24 m on compact and dry soil. Amount of soil debris, humidity and weather condition affect performance.	Measurements executed with tires 480/70R38, on compact and dry soil. Amount of soil debris, humidity and weather condition affect performance.

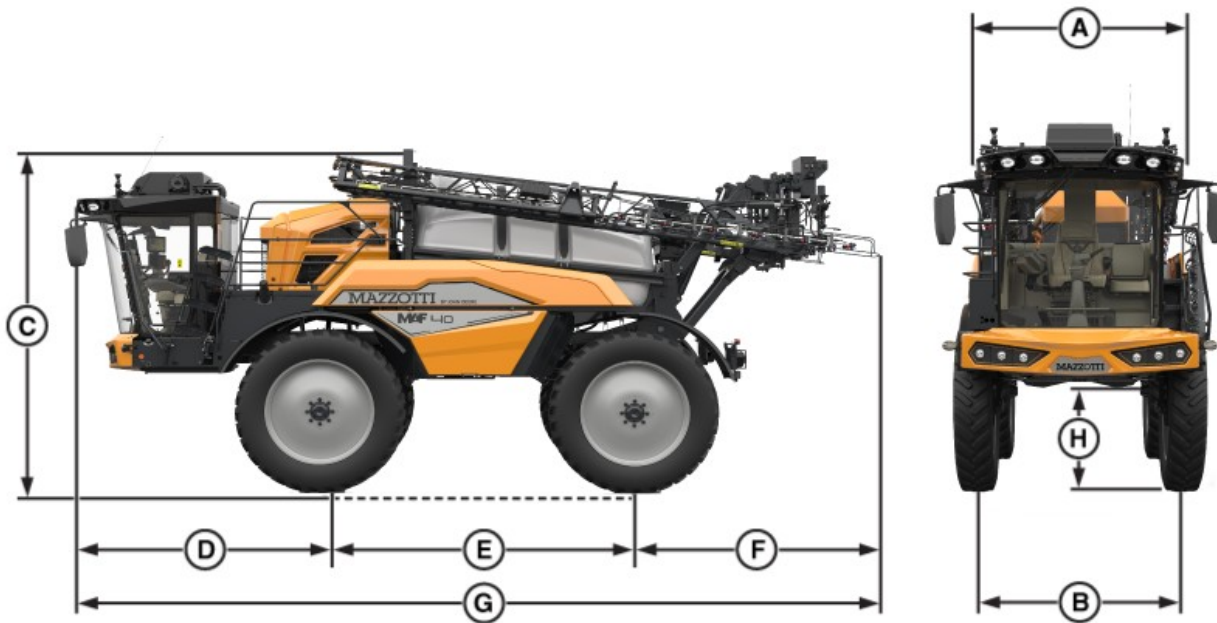
Slopes According to Track Width	
	Height
1800 mm	400 mm
2250 mm	600 mm
2950 mm	700 mm

Nozzle Technology	
Individual Nozzle Control (INC)	Turn on and off based on the section control.

	Turning Radius	
	MAF 32	MAF 40
Tyre Configuration	270/95R44	270/95R48
2 - Wheel Steering (Axle 1.5 to 1.8)	3.6 m	4.2 m

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Machine Dimensions



TG640733—UN—26JUL24

- | | |
|---|--|
| A—Machine Width at Boom | E—Wheel Base |
| B—Wheel Tread from Center to Center | F—Distance from Center of Rear Wheel to Rear-Most Boom Point |
| C—Machine Height | G—Front of the Machine to Rear-Most Boom Point |
| D—Distance from Center of Front Wheel to Front-Most Machine Point | H—Ground Clearance |

Overall Dimensions		
Machine Model	MAF 32	MAF 40
A	2.55 m	2.55 m
B (min-max)	1.5-3 m	1.5-3 m
C	3.94 m	3.94 m
D	3.01 m	3.01 m
E	3.43 m	3.43 m
F	3.15 m	3.15 m
G	9.60 m	9.60 m
H	1.0-1.2 m	1.0-1.2 m
Min Boom Length (m)	24 m	24 m
Max Boom Length (m)	28 m	36 m
Weight Distribution (loaded)	50-50	50-50

awqniwx,1721304927637-19-11OCT24

Nozzles Table

 JOHN DEERE										
Type	bar	l/min	km/h							
			4	5	6	7	8	10	12	16
			l/ha					50cm		
015 (50)	1,5	0,42	126	101	84,0	72,0	63,0	50,4	42,0	31,5
	2,0	0,48	144	115	96,0	82,3	72,0	57,6	48,0	36,0
	2,5	0,54	162	130	108	92,6	81,0	64,8	54,0	40,5
	3,0	0,60	177	142	118	101	88,5	70,8	60,0	44,3
	4,0	0,68	204	163	136	117	102	81,6	68,0	51,0
	5,0	0,76	228	182	152	130	114	91,2	76,0	57,0
	6,0	0,83	249	199	166	142	125	99,6	83,0	62,3
02 (50)	7,0	0,90	270	216	180	154	135	108	90,0	67,5
	1,5	0,56	168	134	112	96,0	84,0	67,2	56,0	42,0
	2,0	0,66	196	156	130	111	97,5	78,0	66,0	48,8
	2,5	0,72	216	173	144	123	108	86,4	72,0	54,0
	3,0	0,79	237	190	158	136	119	94,8	79,0	60,3
	4,0	0,91	273	218	182	156	137	109	91,0	68,3
	5,0	1,02	306	245	204	176	153	122	102	76,5
025 (50)	6,0	1,12	336	269	224	192	168	134	112	84,0
	7,0	1,21	363	290	242	207	182	146	121	90,8
	1,5	0,70	210	168	140	120	106	84,0	70,0	52,5
	2,0	0,81	243	194	162	139	122	97,2	81,0	60,8
	2,5	0,90	270	216	180	154	135	108	90,0	67,5
	3,0	0,99	297	238	198	170	149	119	99,0	74,3
	4,0	1,14	342	274	228	196	171	137	114	86,5
03 (50)	5,0	1,28	384	307	256	219	192	154	128	96,0
	6,0	1,40	420	336	280	240	210	168	140	106
	7,0	1,51	463	362	302	260	227	181	151	113
	1,5	0,83	249	199	166	142	125	99,6	83,0	62,3
	2,0	0,96	288	230	192	166	144	116	96,0	72,0
	2,5	1,08	324	259	216	185	162	130	108	81,0
	3,0	1,18	364	283	236	202	177	142	118	88,5
04 (50)	4,0	1,36	408	326	272	233	204	163	136	102
	5,0	1,62	486	366	304	261	228	182	152	114
	6,0	1,67	501	401	334	286	261	200	167	126
	7,0	1,80	540	432	360	309	270	216	180	136
	1,5	1,12	336	269	224	192	168	134	112	84,0
	2,0	1,29	387	310	268	221	194	156	129	96,8
	2,5	1,44	432	346	288	247	216	173	144	108
06 (50)	3,0	1,68	474	379	316	271	237	190	168	119
	4,0	1,82	546	437	364	312	273	218	182	137
	5,0	2,04	612	490	408	360	306	246	204	153
	6,0	2,23	669	536	446	382	336	268	223	167
	7,0	2,41	723	578	482	413	362	289	241	181
	1,5	1,39	471	334	278	238	209	167	139	104
	2,0	1,61	483	386	322	276	242	193	161	121
08 (50)	2,5	1,80	540	432	360	309	270	216	180	136
	3,0	1,97	591	473	394	338	296	236	197	148
	4,0	2,27	681	545	454	389	341	272	227	170
	5,0	2,64	762	610	508	436	381	306	254	191
	6,0	2,79	837	670	558	478	419	336	279	209
	7,0	3,01	903	722	602	516	452	361	301	226
	1,5	1,68	504	403	336	288	252	202	168	126
08 (50)	2,0	1,94	582	466	388	333	291	233	194	146
	2,5	2,16	648	518	432	370	324	269	216	162
	3,0	2,37	711	569	474	406	366	284	237	178
	4,0	2,74	822	658	548	470	411	329	274	206
	5,0	3,06	918	734	612	526	469	367	306	230
	6,0	3,36	1006	804	670	574	503	402	336	251
	7,0	3,62	1086	869	724	621	543	434	362	272
08 (50)	1,5	2,23	669	536	446	382	336	268	223	167
	2,0	2,68	774	619	516	442	387	310	268	194
	2,5	2,88	864	691	576	494	432	346	298	216
	3,0	3,16	948	758	632	542	474	379	316	237
	4,0	3,66	1096	876	730	626	548	438	366	274
	5,0	4,08	1224	979	816	699	612	490	408	306
	6,0	4,47	1341	1073	894	766	671	536	447	336
08 (50)	7,0	4,83	1449	1158	966	828	726	580	483	362

WZ011905

EU Declaration of Conformity

Mazzotti S.R.L Ravenna (RA) - Italy

The undersigned hereby declares that:

Machine Type: Self-propelled Sprayer

Model(s): MAF 32; MAF40

fulfill(s) all relevant provisions and essential requirements of the following directives:

Directive	Number	Certification Method
Machine Directive	2006/42/CE amd. by 2009/127/CE	Self-Certification
Eletromagnetic Compatibility	2014/30/CE	Self-Certification

The product is in conformity with the following standards and/or other normative documents:

EN ISO 4254-1:2015

EN ISO 16119-1:2013

EN ISO 4254-6:2020

EN ISO 16119-2:2013

EN ISO 14982:2009

Name and address of the person in the European Community authorized to compile the technical construction file:

Mazzotti S.R.L

Via Dismano, 138/A, Ravenna – IT CAP 48124

commerciale@mazzotti.it

The declaration of conformity is issued under the sole responsibility of the manufacturer.

Place of Declaration: Ravenna (RA), Italy

Date of Declaration: 1 January 2025

Manufacturing Unit: Mazzotti S.R.L, Ravenna (RA), Italy

Name: Enrique Santiago Guillen Gosalbez

Title: Factory Manager



DXCE01—UN—28APR09
awqniwx,1738295203715-19-31JAN25

Identification Plates

Basic Machine Identification Plate



TG645278—UN—12SEP24

Machine Identification Plate

awqniwx,1718082449251-19-16SEP24

- Lower equipment to the ground.
 - Set wheels to widest position to make loading more difficult.
 - Remove any keys and batteries.
- When parking indoors, put large equipment in front of exits and lock your storage buildings.
 - When parking outdoors, store in a well-lighted and fenced area.
 - Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
 - Notify the authorized John Deere dealer of any losses.

KWPZAG2,00009FA-19-27AUG21

Cab Identification Plate

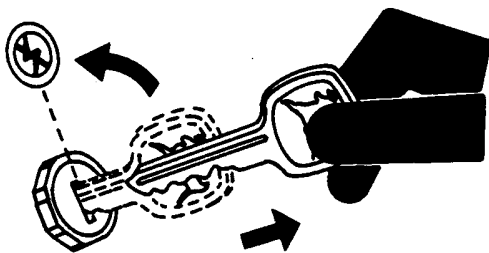
NOTE: The cab identification plate is located behind the cab at right hand corner near cab electrical connection ports.



APY65290—UN—29JUL21

awqniwx,1721305129945-19-18JUL24

Keep Machine Secure



TS230—UN—24MAY89

- Install vandal-proof devices.
- When machine is in storage:

John Deere Service Keeps You On The Job

John Deere Parts



TS100—UN—23AUG88

We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.

DX,IBC,A-19-04JUN90

School is never out for John Deere service technicians.

Training schools are held regularly to be sure our personnel know your equipment and how to maintain it.

Result?

Experience you can count on!

DX,IBC,C-19-04JUN90

Prompt Service



TS103—UN—23AUG88

Our goal is to provide prompt, efficient care when you want it and where you want it.

We can make repairs at your place or at ours, depending on the circumstances: see us, depend on us.

JOHN DEERE SERVICE SUPERIORITY: We'll be around when you need us.

DX,IBC,D-19-04JUN90

The Right Tools



TS101—UN—23AUG88

Precision tools and testing equipment enable our Service Department to locate and correct troubles quickly . . . to save you time and money.

DX,IBC,B-19-04JUN90

Well-Trained Technicians



TS102—UN—23AUG88

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