MAF 3180, MAF 3580 and MAF 4080 Self-Propelled Sprayers

MAZZOTTI

BY JOHN DEERE

OPERATOR'S MANUAL

MAF 3180, MAF 3580 and MAF 4080 Self-Propelled Sprayers

OM5MZ10001 ISSUE D3 (ENGLISH)

MAZZOTTI s.r.l.
PRINTED IN U.S.A.

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-19-06JUL20

Contents

Page

Identification View
Identification View 00-1

Introduction to the Machine
Download Instructions 01-1
Purpose of the Manual 01-1
Documentation Supplied 01-2
Machine Features 01-2

Safety
Recognize Safety Information 10-1
Understand Signal Words 10-1
Follow Safety Instructions 10-1
Prepare for Emergencies 10-1
Wear Protective Clothing 10-2
Protect Against Noise 10-2
Handle Fuel Safely—Avoid Fires 10-2
Fire Prevention 10-2
In Case of Fire 10-3
Avoid Static Electricity Risk When Refueling 10-3
Use Seat Belt Properly 10-4
Vibration 10-4
General Machine Operation Safety 10-4
Operators 10-4
Operator Ability 10-4
Use Steps and Handholds Correctly 10-5
Operating the Tractor Safely 10-5
Transport in the Field and on the Road 10-6
Emergency Exit 10-7
Transport Safely 10-7
Avoid Backover Accidents 10-8
Keep Riders Off Machine 10-8
Passenger Seat 10-8
Heated and Ventilated Operator's Seat 10-8
Use Safety Lights and Devices 10-9
Avoid Contact with Agricultural Chemicals - Cab Category 4 according to EN 15695-1 10-9
Service and Operate Chemical Sprayers Safely 10-10
Respiratory Protection 10-10
Handle Chemical Products Safely 10-11
Non-Permissible Use 10-11
Clean Vehicle of Hazardous Pesticides 10-11
Prevent Development of Micro Organisms 10-11
Mechanical Safety 10-12
Working Area 10-12
Handling Batteries Safely 10-13
Prevent Battery Explosions 10-13
Skin Protection 10-13
Maintenance of Means of Personal Protection 10-14
Operator's Cab 10-14
Park Machine Safely 10-14
Work In Ventilated Area 10-14
Remove Paint Before Welding or Heating 10-15
Avoid Heating Near Pressurized Fluid Lines 10-15
Welding Near Electronic Control Units 10-15
Work in Clean Area 10-15
Practice Safe Maintenance 10-16
Safety During Maintenance Work 10-16
Use Proper Tools 10-17
Prevent Machine Runaway 10-17
Service Drive Belts Safely 10-17
Handle Electronic Components and Brackets Safely 10-17
Avoid High-Pressure Fluids 10-18
Check/Replace Hydraulic Hoses 10-18
Do Not Open High-Pressure Fuel System 10-18
Avoid Hot Exhaust 10-18
Clean Exhaust Filter Safely 10-19
Service Cooling System Safely 10-19
Service Accumulator Systems Safely 10-20
Service Tires Safely 10-20
Follow Tire Recommendations 10-21
Decommissioning — Proper Recycling and Disposal of Fluids and Components 10-21
Admissible Use 10-21
Regulations for Machines in Use 10-21

Safety Decals
Pictorial Safety Signs 15-1
Replace Safety Signs 15-1
Operator's Manual Decal 15-1
Shields Decal 15-2
Platform Ladder Decal/Do Not Ride Decal 15-2
Passenger Seat Decal 15-3
Danger of Poisoning 15-3
Clean Water Rinse Tank Decal 15-3
Wheel Hardware Decal 15-3
Boom Cylinder Accumulator Decal 15-4
Front Suspension Accumulator Decal 15-4
Rear Suspension Accumulator Decal 15-4
Electric Boxes Decal 15-4
Boom Spray Lock Decal 15-5
Hot Surfaces Decal 15-5
Moving Parts Decal 15-5
Boom Hinge Point Decal 15-6
Rotating Parts Decal 15-6
Agricultural Chemicals Decal 15-6
Personal Protection Decal 15-7
Jack-Up Points Decal 15-7
Towing and Hooking Points Decal 15-7
Greasing and Lubrication Points Decal 15-8

Continued on next page

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.

COPYRIGHT © 2021
John Deere GmbH & Co. KG Mannheim Regional Center
Zentralfunktionen
All rights reserved.

Page

Cab, Controls, and Instruments
Access Cab Ladder 25-1
Emergency Exit 25-2
Operator's Cab Structure 25-3
Cab Classification according to EN 15695-1 (When Applying Plant Protection Products and Liquid Fertilizers) 25-3
Air Quality in the Cab 25-4
Safety Rules for the Category 4 Cab (If Equipped) 25-4
Battery Lock Decal 25-7
Vehicle Controls 25-8
MSpray Multi-Function Lever 25-10
Mazzotti Multi-Function Lever 25-11
CommandARMTMControls 25-15
TERA 10 Display 25-17
Key Switch 25-25
Adjust Steering Wheel 25-26
Outside Mirror Control Switch 25-26
Operate Horn, Lights, and Turn Signals 25-27
Hazard Warning Lights 25-27
Beacon Lights 25-27
Service Brake Pedal 25-28
Throttle Lever 25-28
Steering Mode Switch 25-29
Dome Light 25-29
Reading Light 25-30
Fan and Air Louvers 25-30
Heater 25-30
Air Conditioning System 25-31
Opening Windows 25-31
Operator's Seat 25-32
Seat Belts 25-33
Passenger Seat 25-33

Break-In Period
Break-In Checks—First 100 Hours 30-1

Prestarting Checks
Check Engine Oil Level 35-1
Check Fuel Filter 35-1
Check Engine Coolant Level 35-2
Check Hydrostatic and Hydraulic Oil Level 35-3
Fill Fuel Tank 35-3
Fill Diesel Exhaust Fluid (DEF) Tank 35-4
Check Tires for Damage and Correct Inflation Pressure—Daily 35-5
Lubricate Suspension Assemblies 35-5

Operating the Machine
Instructions 40-1
Prevent Machine Runaway 40-1
Battery Switch 40-1
Start Engine 40-1
Cold Weather Starting 40-2
Warming the Engine 40-3
Starting the Machine 40-3
Stopping the Machine 40-3
Parking the Machine (Brief Stops) 40-4
Machine Transport Regulations (Italy) 40-4
Aftertreatment Indicators Overview 40-6
Machine Stop Required Warning 40-7
Exhaust Filter System (Final Tier 4 and Stage V Engines) 40-8

Page

MSpray Solution Command System Panel 40-9
Solution Tank 40-11
Filling and Opening of Tank 40-11
Tank Level Indicator 40-12
Tank Level Indicator 40-13
Agitation 40-13
Chemical Inductor 40-14
Rinsing Empty Containers 40-15
Pressure and Flow Measurement 40-16
Pressure Filter 40-16
Hand Washing Tank 40-17
Rinse Water Tank 40-17
Solution Tank Rinsing Nozzles 40-18
Electrical Operation Group 40-18
MSpray System Fuses 40-19
MSpray Multi-Function Lever 40-20
Spray System Master On—Off Switch 40-21
Agitation, Working Lights, and F-Switch 40-21
Control Group 40-21
Operating IBS (Index Boom Sections) 40-22
Pressure Circulation System 40-23
Filling Pump Pressure Filter 40-24
Solution Tank Pump Off Connection 40-24
Solution Pump 40-25
Solution Pump Recommendations 40-25
Boom Unfolding and Folding 40-25
Boom Roll Correction 40-34
Spray Line and Nozzle Holders 40-36
Replacing Nozzles 40-37
Check and Replace Worn Nozzles 40-38
Calibrating Nozzles 40-38
Filling Solution Tank Directly 40-39
Filling Solution Tank with Sprayer Filling Pump 40-39
Filling Solution Tank with External Pump 40-40
Filling Solution Tank from Rinse Tank 40-41
Agitation of Solution Tank Contents 40-43
Electrical Drain 40-43
System Rinse 40-43
Wash Brush (If Equipped) 40-52
Selecting Steering Mode 40-53
Changing Speed 40-54
Slow Motion Function 40-56
Adjusting the Suspension 40-56
Adjusting the Tracks (Automatic Axles) 40-58
Installation Disc Brakes 40-63
Releasing the Parking Brake 40-64

MSpray System
MSpray System Composition 45-1
Functional Diagram—Pressure Circulation System 45-2
Pressure Circulation Option 45-3
Avoid Contact with Chemicals 45-4
Components of the Solution Command System 45-5
MSpray Displays and Control 45-6
General Information 45-7
Sprayer - Main 45-8
Section ON/OFF Softkey Layout 45-10
Pressure Setting Softkey Layout 45-11
Agitation, Work Lights and F-Switch 45-12
Boost Mode 45-13
Job Settings 45-14
Tank Filling with Suction Valve 45-18

Page

Nozzle Calculator 45-20
Machine Settings 45-20
General Settings 45-21
Boom Settings 45-22
Nozzle Presets 45-22
Outer Nozzle Presets 45-23
BoomCtrl 45-24
Tank Settings 45-25
Regulation Settings 45-26
Calibration 45-27
Flow Calibration 45-28
Liquid Pressure Calibration 45-30
Tank Sensor Calibration 45-33
Boom Roll Calibration 45-38
Boom Height Calibration 45-40
H2O Tank Calibration 45-41
Centrifugal Pump Calibration 45-42
Valve Calibration 45-44
Main Page Layout 45-46
Performance Data 45-48
Actual 45-48
Field 45-49
Total 45-50
Info 45-51
Diagnostics 45-51
Info Readings 45-52
Sensor Status 45-53
Ctrl. U. (Control Unit Status) 45-57
Recent Problems 45-63
Display Run Page / Section Control (Option) 45-63
Warning Screen Codes 45-65

Standard Spray System
Standard Spraying System Unit 46-1
Controls Dashboard 46-2
Pump Operation Selectors (Intake and Supply) 46-3
Basic Procedure 46-4
Visio Monitor 46-5
Eductor 46-6
Connect Couplings and Drains (Membrane Pump) 46-9
Hydraulic Hose Reel 46-11
Centrifugal Pump 46-12
Water Loading with Centrifugal Pump—Intake Side 46-12
Spraying Pump 46-13
Spraying Control Unit 46-14
Boom 46-14
Nozzles 46-15
Air Sleeve 46-16
Preparation for Treatment 46-19
Mix Filling and Preparation 46-20
Circuit Washing 46-21
Dilution of the Solution for Road Circulation 46-24
Draining 46-24

Spray Boom
Spray Boom 50-1
24—30 m HC Spray Boom 50-2
24—36 m HSA-HSS Spray Boom 50-9

Page

Accessories
John Deere TerrainCommand™ Pro - Automatic Boom Height, Roll, & Variable Geometry Control System 55-1

Individual Nozzle Control (INC)
Nozzle Control System Overview 55A-1
INC Use with Aftermarket Equipment 55A-1
Nozzle Control System Nozzle Control Run Page 55A-2
System Setup Spray Section Setup 55A-3
Operating Nozzle Control Operate Indexed Boom Sections (IBS) 55A-3
Operate System with the Remote Control 55A-5
Remote Control Pairing Procedure 55A-7
NCC Boom Configuration 55A-8

Electrical System Service
Replace Fuses and Relays 60-1
Engine JD Fuse Box 60-6

Batteries
Prevent Acid Burns 65-1
Handling, Checking, and Servicing Batteries 65-1
Prevent Battery Explosions 65-2
Prevent Battery Damage 65-2
Battery Electronic Disconnection 65-2

Fuels, Lubricants and Coolants
Diesel Fuel 70-1
Lubricity of Diesel Fuel 70-1
Handling and Storing Diesel Fuel 70-2
Supplemental Diesel Fuel Additives 70-2
Testing Diesel Engine Coolant 70-2
Biodiesel Fuel 70-3
Testing Diesel Fuel 70-4
Minimizing the Effect of Cold Weather on Diesel Engines 70-4
Diesel Engine Coolant (engine with wet sleeve cylinder liners) 70-5
John Deere COOL-GARD™ II Coolant Extender 70-6
Operating in Warm Temperature Climates 70-6
Water Quality for Mixing with Coolant Concentrate 70-6
Testing Coolant Freeze Point 70-7
Diesel Engine Oil — Tier 2 and Stage II 70-8
Engine Oil and Filter Service Intervals — Tier 2 and Stage II Engines 70-8
Diesel Engine Break-In Oil — Non-Emissions Certified and Certified Tier 1, Tier 2, Tier 3, Stage I, Stage II, and Stage III 70-9
Diesel Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V 70-9
Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines 70-10
John Deere Break-In Plus™ Engine Oil — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V 70-10

Page

Diesel Exhaust Fluid (DEF) — Use in Selective Catalytic Reduction (SCR) Equipped Engines 70-11
Storing Diesel Exhaust Fluid (DEF) 70-11
Refilling Diesel Exhaust Fluid (DEF) Tank 70-12
Testing Diesel Exhaust Fluid (DEF) 70-12
Disposal of Diesel Exhaust Fluid (DEF) 70-13
Hydraulic Oil 70-13
Grease 70-13
Oil Filters 70-13
Fuel Filters 70-13
Alternative and Synthetic Lubricants 70-14
Lubricant Storage 70-14
Mixing of Lubricants 70-14

Lubrication and Maintenance
High Pressure Washers 75-1
Lubrication and Periodic Service 75-1
General Information Regarding Condition of Vehicle 75-1
Check/Replace Hydraulic Hoses 75-1
Regular Maintenance Intervals - Machine 75-1
Maintenance and Service Intervals 75-6
Scheduled Maintenance Interval: 100 HoursIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention. 75-9
Scheduled Maintenance Interval: 500 Hours / 1 YearIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention. 75-10
Scheduled Maintenance Interval: 1000 Hours / 2 Year 75-16
Scheduled Maintenance Interval: 1500 Hours / 3 Year 75-17
Scheduled Maintenance Interval: As Required 75-19
Scheduled Maintenance Interval: Mechanical Differential Axle 75-20
Extraordinary Maintenance LogbookIt is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention. 75-21

Maintenance
Maintenance Points—Left Hand Side 76-1
Maintenance Points—Right Hand Side 76-2
Instructional Service Points 76-3
Top Up Washer Fluid 76-4
Greasing Points 76-4
Wheels and Tires 76-5
Disc Brakes (If Equipped) 76-7
Verification Procedure of Convergence on Roadways 76-7
Performing Welds 76-8
Diesel Engine Maintenance 76-9
Hydraulic System 76-13
Check Hydraulic Pump Oil 76-15

Storage
Clean Vehicle of Hazardous Chemicals 80-1

Page

Preparation for Storage 80-1
Protection Against Frost 80-1
PowrSpray Winterization Procedure 80-1
Activation After Long Storage Period 80-2

Diagnostics and Troubleshooting
Problems—Causes—Solutions 85-1
Engine Troubleshooting 85-3
Alarm Cabin Sound 85-14
Machine Error Codes—If Equipped with MS08/MHP11 85-14
Poclain Hydraulic Motors MHP11 Errors 85-15
John Deere Engines—Diagnostic Trouble Codes List (DTC) 85-19
Diagnostic Functions on the Tera Display 10 85-23

Specifications
Machine Specifications 90-1
Machine Dimensions 90-4
Nozzles Table 90-5
EU Declaration of Conformity 90-6
Reference Standards 90-6

Identification Plates
Basic Machine Identification Plate 95-1
Cab Identification Plate 95-1
Keep Machine Secure 95-1

John Deere Service Keeps You On The Job
John Deere Parts IBC-1
The Right Tools IBC-1
Well-Trained Technicians IBC-1
Prompt Service IBC-1

Identification View

APY63061—UN—01JUL21

MAF 3180-3580-4080 Right-Hand Front View

APY63062—UN—01JUL21

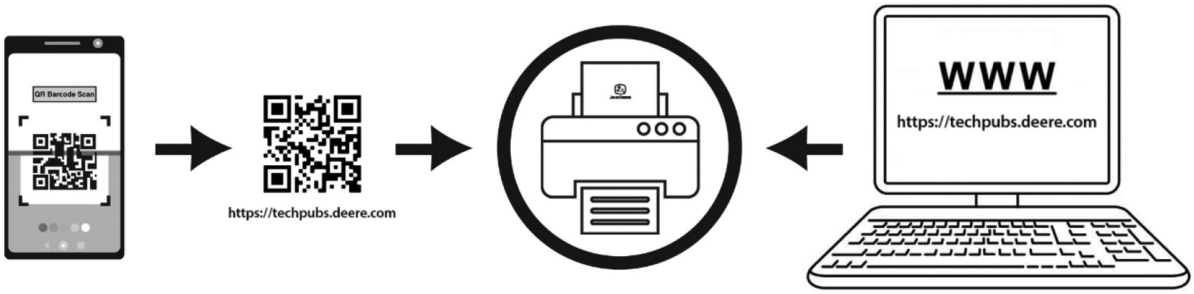
MAF 3180-3580-4080 Left-Hand Front View

APY64222—UN—01JUL21

MAF 3180-3580-4080 Left-Hand Rear View

KWPZAG2,0000D6E-19-25JUL21

Download Instructions



Instructions, manuals, and other documents may be downloaded at www.techpubs.deere.com. Scanning the QR code on a mobile device will route to the site automatically.
Les instructions, les manuels et autres documents peuvent être téléchargés à cette adresse: www.techpubs.deere.com. Scanner le QR code via un appareil mobile mène automatiquement au site.
Istruzioni, manuali e altri documenti possono essere scaricati su www.techpubs.deere.com. La scansione del codice QR su un dispositivo portatile indirizza automaticamente al sito.
Anleitungen, Handbücher und andere Dokumente können unter www.techpubs.deere.com heruntergeladen werden. Durch Scannen des QR-Codes mit einem Mobilgerät wird man automatisch zur Webseite weitergeleitet.
Las instrucciones, los manuales y otros documentos se pueden descargar en www.techpubs.deere.com. Al escanear el código QR en un dispositivo móvil, se abrirá automáticamente el sitio web.
Instruções, manuais e outros documentos podem ser baixados em www.techpubs.deere.com. A leitura do código QR em um dispositivo móvel levará você automaticamente para o site.
Инструкции, руководства и другие документы можно загрузить на странице www.techpubs.deere.com. Сканирование QR-кода на мобильном устройстве будет автоматически отправлять на сайт.

TS1746—UN—26APR21
DX,DOWNLOADINSTRUCTIONS,AT-19-27APR21

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 3180[1]

[1] depicts machine option with mechanical axle.

- MAF 3580[2]
- MAF 4080

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.

KWPZAG2,0000E36-19-26AUG21

Documentation Supplied

CAUTION: The dealers must fill the hand-over/ warranty certificates e-mail to Mazzotti srl using the following address: sat@mazzotti.it.

CAUTION: Before the operator uses the machine, they must have read and understood this manual. If the manual is not available, it is necessary to request a copy to the dealer or to the company Mazzotti, indicating the serial number of the machine.

In addition to this manual, the following manuals or documentation:

1. Quick start guide.
2. Operation and maintenance manual of the engine.
3. Spare parts catalog of the machine.
4. Spare parts catalog of the sprayer system.[3]
5. Spare parts catalog of the sprayer booms.
6. Spraying setting parameters pen drive.[3]
7. Use and maintenance manual of the spraying computer.[3]
8. Use and maintenance manual of the centrifugal pump (if equipped).
9. Use and maintenance manual of the Hypro® centrifugal pump (if equipped).
10. NORAC® manual (if equipped).[3]
11. GPS antenna manual: StarFire™ 6000 (if equipped).
12. Hand-over/warranty certificates.
13. Parts catalog differential axle (mechanical version).
14. Visio monitor use and maintenance manual.[4]
15. ARAG Controller use and maintenance manual (if equipped).[3]

KWPZAG2,0000E39-19-17AUG21

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 Engine Stage III (6.8 L) and John Deere PowerTech™ PSS 129 kW Engine Stage V (4.5 L).
- John Deere 1530 Cab, CAT IV, and NGOI joystick/ Mazzotti joystick.
- John Deere 4640 Display, StarFire™ antenna, and AutoTrac™
- Tank capacity: 3100 L, 3600 L fiberglass tank and 4200 L polyethylene tank.
- Suspension: hydraulic axles.
- Steering system: 4-wheel system, semiautomatic or automatic (Danfoss).
- Transmission: Poclain MS08 Hydraulic Motors (two gears) with hydrostatic brakes, disc brakes (if equipped), MHP11 (four gears forward, three gears reverse) with hydrostatic brakes.
- Booms: 18—36 m length: 7 or 9 sections, an air assisted system 620 mm and 820 mm (if equipped).
- Nozzles: Individual nozzle control (INC) or triget holder, and nozzles Hypro® VF 04.

byhneba,1679033054369-19-21MAR23

Hypro is a trademark of Pentair Flow Technologies, LLC
NORAC is a trademark of NORAC Systems International, Inc.
StarFire is a trademark of Deere & Company

[2] depicts machine option with mechanical axle.
[3] only with machine complete with spraying system
[4] only with machine with standard spraying system

PowerTech is a trademark of Deere & Company
AutoTrac is a trademark of Deere & Company

Recognize Safety Information

T81389—UN—28JUN13

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

Follow recommended precautions and safe operating practices.

DX,ALERT-19-03OCT22

Understand Signal Words

TS187—19—30SEP88

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

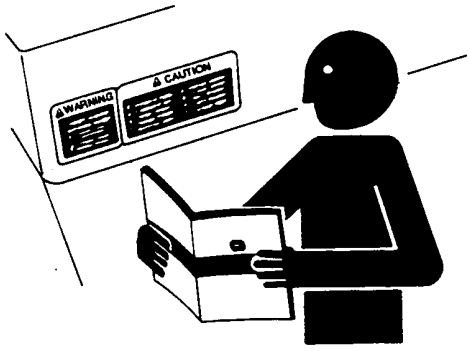
WARNING; The signal word WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

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

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

DX,SIGNAL-19-05OCT16

Follow Safety Instructions



TS201—UN—15APR13

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

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

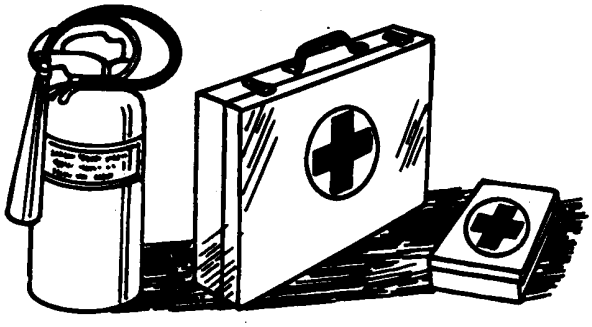
Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

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

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

DX,READ-19-01AUG22

Prepare for Emergencies



TS291—UN—15APR13

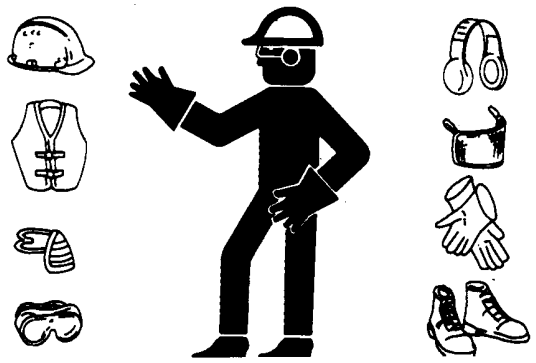
Be prepared if a fire starts.

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



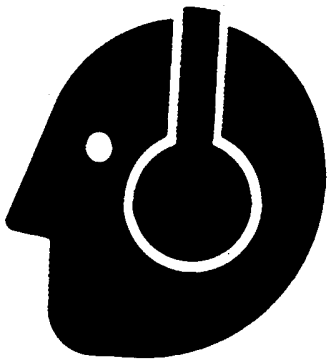
TS206—UN—15APR13

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, always shut OFF the engine, place the transmission in PARK or set parking brake, and remove the key. Removal of the key will prevent others from starting the tractor during inspection and cleaning.

DX,WW,TRACTOR,FIRE,PREVENTION-19-12OCT11

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.

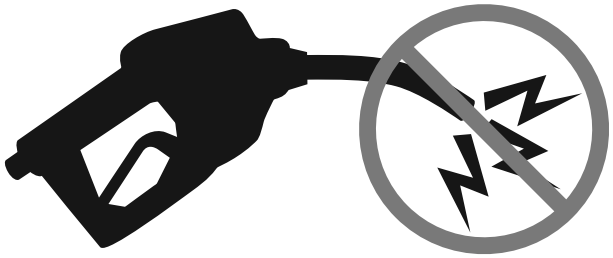
If your extinguisher does not have instructions, follow these general guidelines:

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.

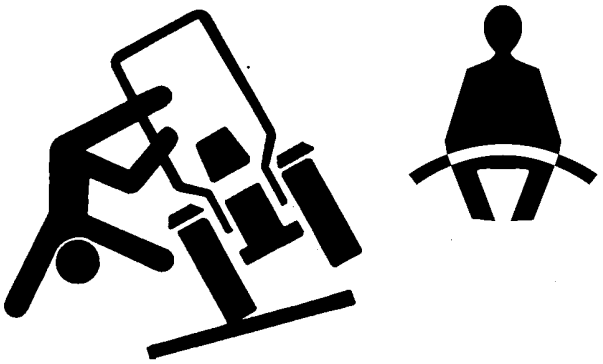
Static charges can build up in ULSD fuel while it is flowing through fuel delivery systems. Static electricity discharge when combustible vapors are present could result in a fire or explosion.

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 approved for your machine. See your John Deere dealer.

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 ≤ 1.25 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

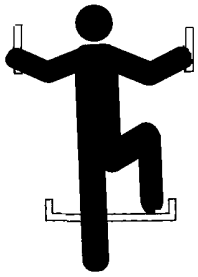
Operator Ability

- 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



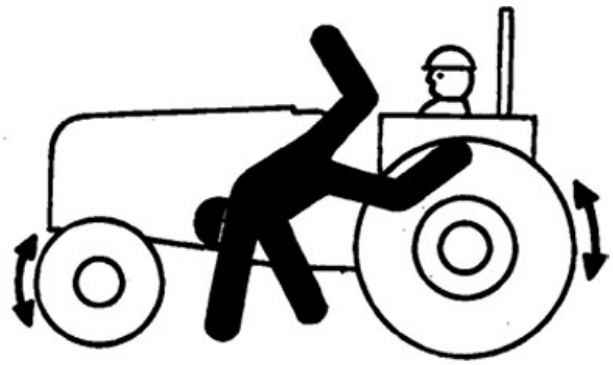
T133468—UN—15APR13

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

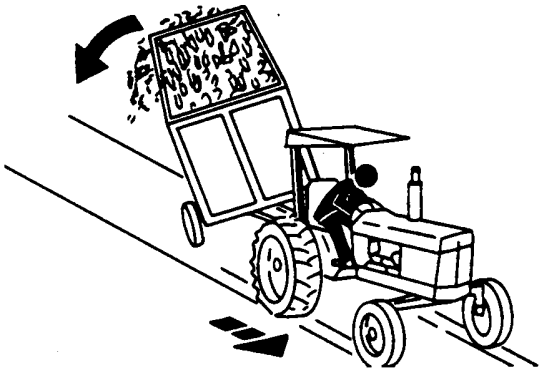
Unsafe operation or misuse of the tractor can result in accidents. Be alert to hazards of tractor operation.

The most common accidents involving tractors are:

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

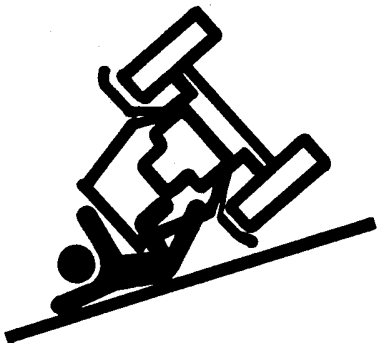
KWPZAG2,0000C53-19-30JUN21

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

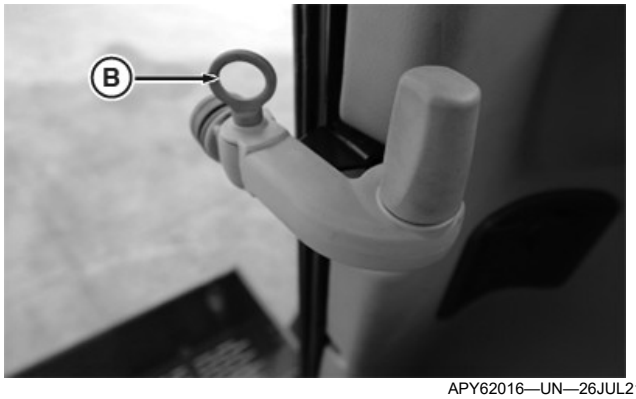
Emergency Exit

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

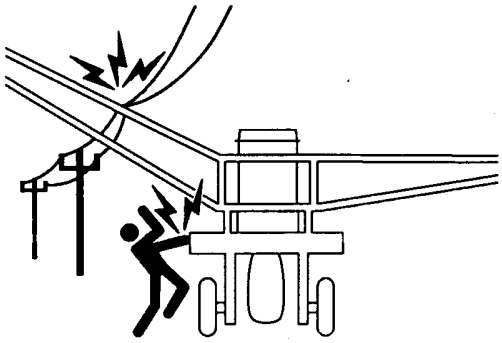
A—Emergency Exit
B—Pin

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

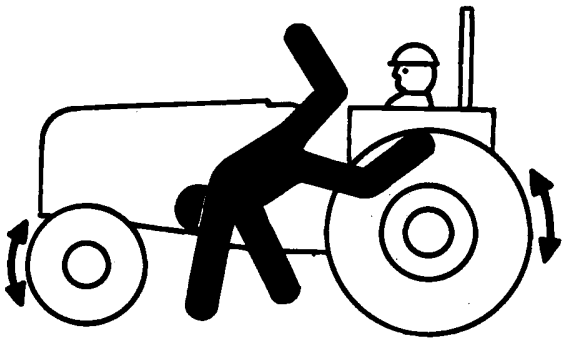
PC10857XW—UN—15APR13

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



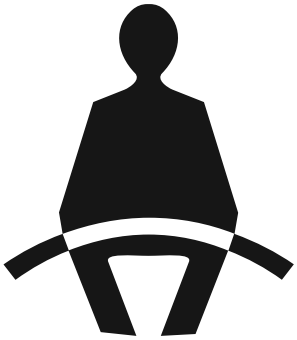
TS290—UN—23AUG88

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

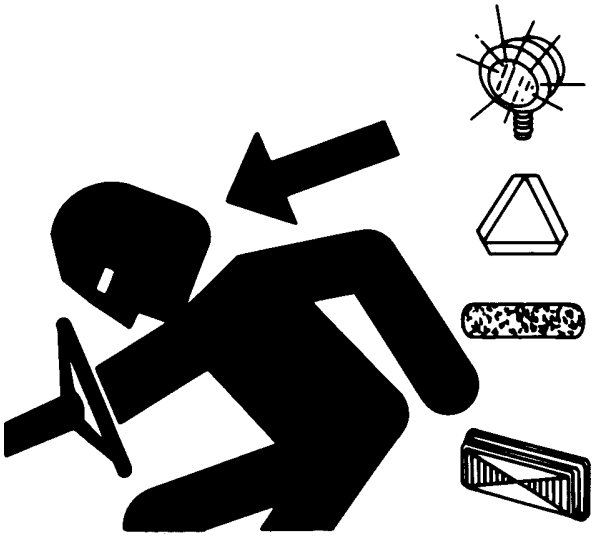
Heated and Ventilated Operator's Seat

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

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.

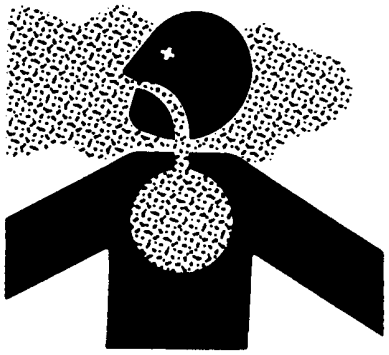
Follow operational and service instructions for category 4 cab and recommended filter replacement intervals.

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.

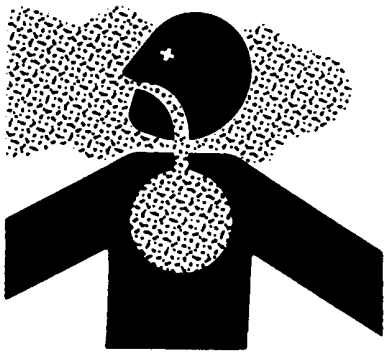
Reduce risk of exposure and injury:

- 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 A_2P_2 (CEN normalization) is suitable for most crop protection chemicals. A_2P_2 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. A_2 refers to protection class 2 of the gas filter, i.e. that the filter may be used in concentrations up to 0.5 vol%. P_2 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 A_2P_2 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:

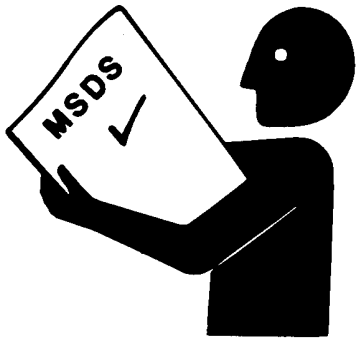
- many toxic substances are odourless
- the harmful concentration may be under the odour limit
- certain substances affect the sense of smell by damaging the mucous membranes

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.

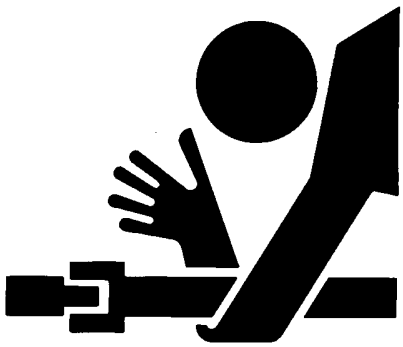
KWPZAG2,0000C54-19-30JUN21

Prevent Development of Micro Organisms

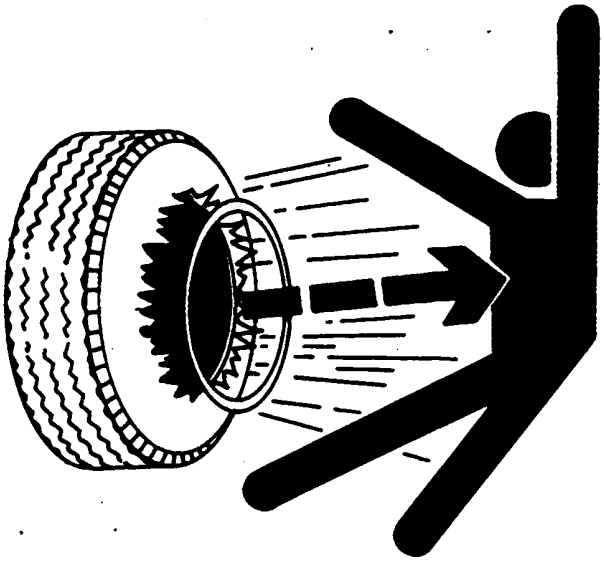
CAUTION: Do not leave any rinse water in the sprayer for a longer period of time, since high temperatures may cause development of micro organisms which could be harmfull for your health.

WZ00085,0000296-19-29NOV04

Mechanical Safety



TS276—UN—23AUG88



TS211—UN—15APR13

LX002510—UN—17JAN95

Turn Off Engine

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

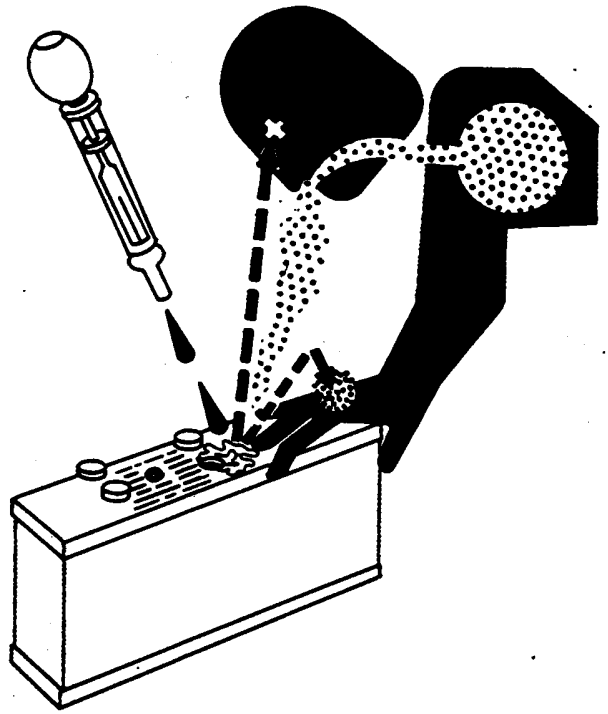
Danger zones are taken to mean:

- 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

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!

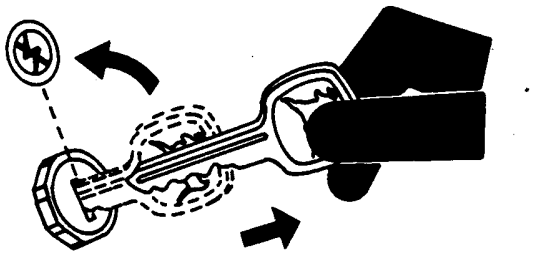
AG,WZ00009,169-19-07AUG00

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



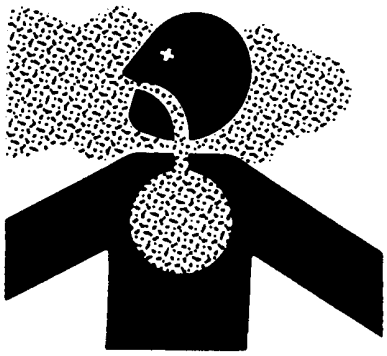
TS230—UN—24MAY89

Before working on the machine:

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

DX,PARK-19-04JUN90

Work In Ventilated Area



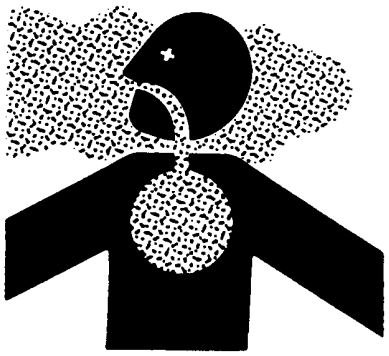
TS220—UN—15APR13

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

Avoid Heating Near Pressurized Fluid Lines

TS953—UN—15MAY90

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

DX,TORCH-19-10DEC04

Welding Near Electronic Control Units

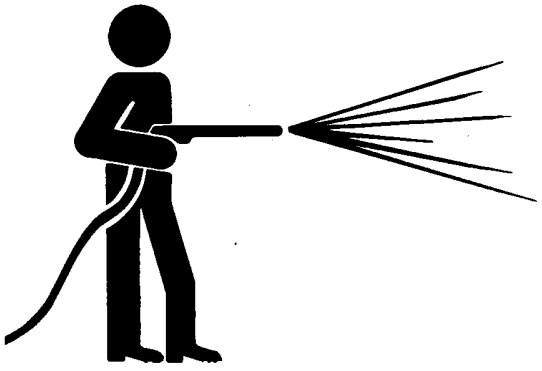
TS953—UN—15MAY90

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

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

DX,WW,ECU02-19-14AUG09

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

Practice Safe Maintenance

TS218—UN—23AUG88

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

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

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

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

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

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

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

DX,SERV-19-28FEB17

Safety During Maintenance Work

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

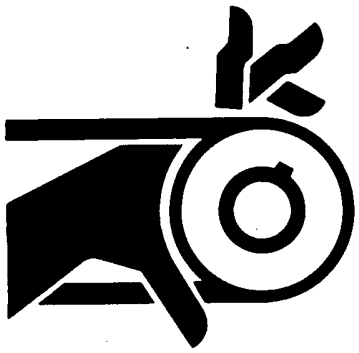
Avoid possible injury or death from machinery runaway.

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.

OUO6043,00015E3-19-24MAY04

Handle Electronic Components and Brackets Safely

TS249—UN—23AUG88

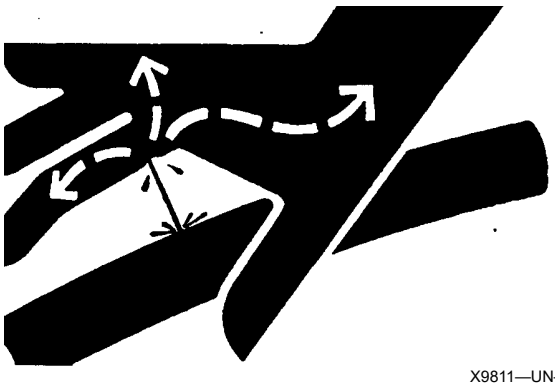
Falling while installing or removing electronic components mounted on equipment can cause serious injury. Use a ladder or platform to easily reach each mounting location. Use sturdy and secure footholds and handholds. Do not install or remove components in wet or icy conditions.

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.

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

DX,FLUID-19-12OCT11

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.

Replacement hoses are available from your John Deere dealer.

WZ00232,0000252-19-05AUG11

Do Not Open High-Pressure Fuel System

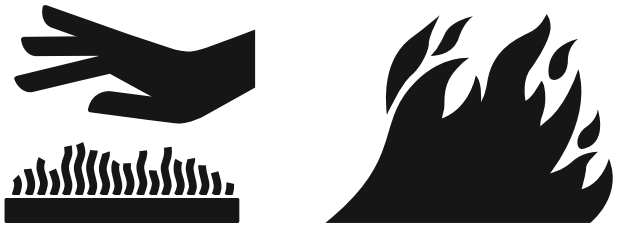
TS1343—UN—18MAR92

High-pressure fluid remaining in fuel lines can cause serious injury. 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.

Only technicians familiar with this type of system can perform repairs. (See your John Deere dealer.)

DX,WW,HPCR1-19-07JAN03

Avoid Hot Exhaust



RG17488—UN—21AUG09

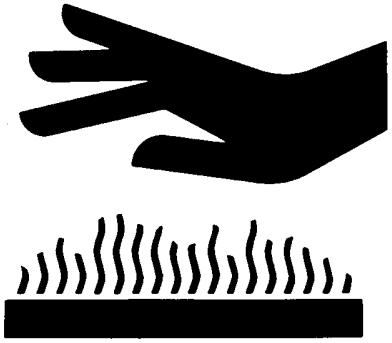
Servicing machine or attachments with engine running can result in serious personal injury. Avoid exposure and skin contact with hot exhaust gases and components.

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.

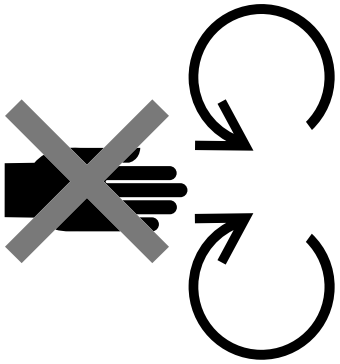
DX,EXHAUST-19-20AUG09

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 remove key (if equipped) before leaving the machine unattended.

DX,EXHAUST,FILTER-19-12JAN11

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.

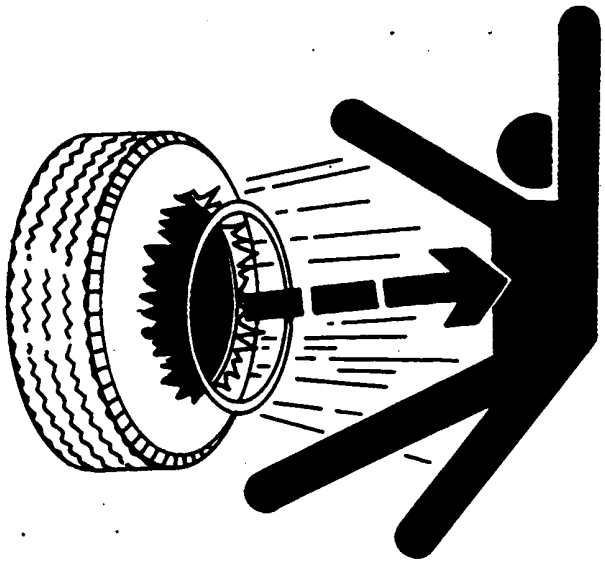
Relieve pressure from the pressurized system before removing accumulator.

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.

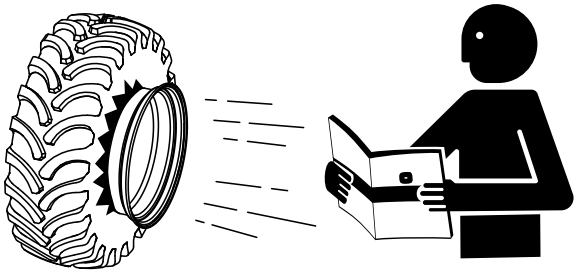
Never weld or heat a wheel and tire assembly. The heat can cause an increase in air pressure resulting in a tire explosion. Welding can structurally weaken or deform the wheel.

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

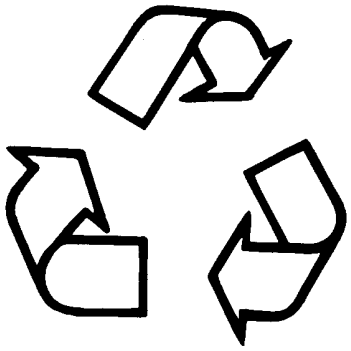
Keep your machine in proper working order.

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.

OUO6092,00008D8-19-19MAY14

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

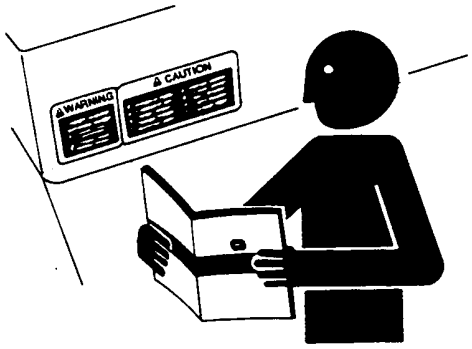
Pictorial Safety Signs

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.

KWPZAG2,00009C1-19-26AUG21

Replace Safety Signs

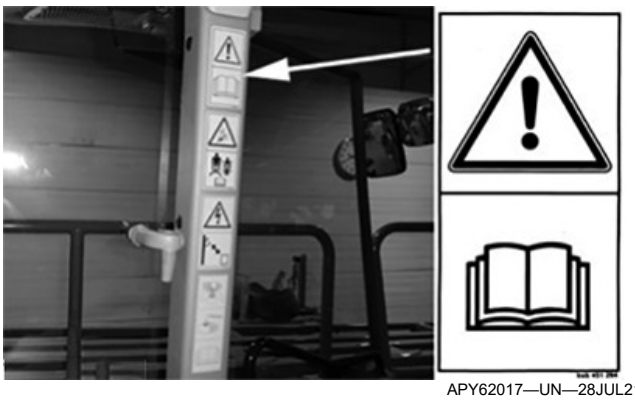


TS201—UN—15APR13

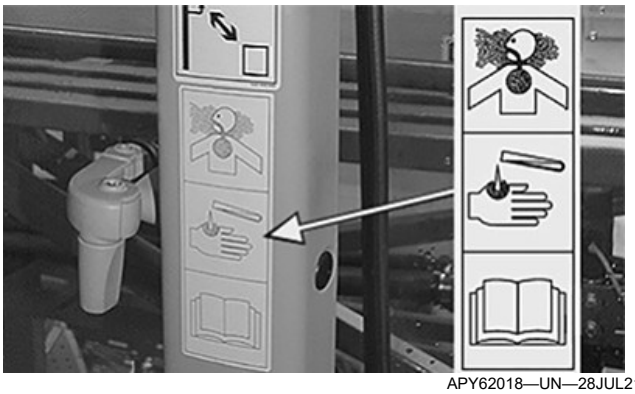
Replace missing or damaged safety signs. See the machine Operator's Manual for the correct safety sign placement.

KWPZAG2,00009C2-19-26AUG21

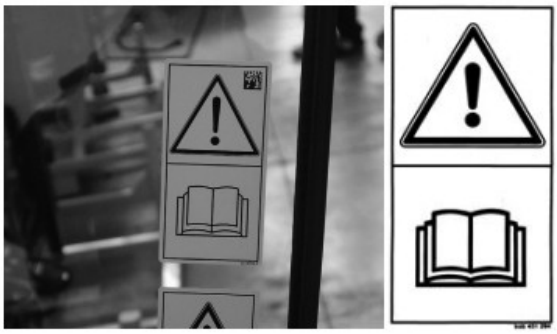
Operator's Manual Decal



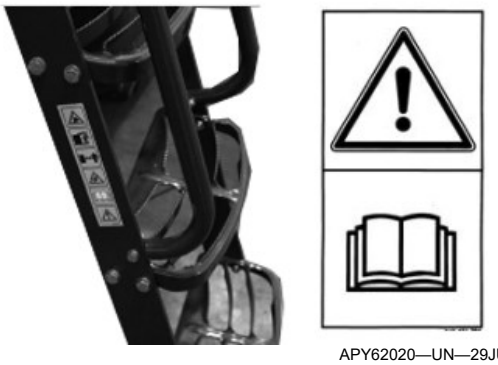
APY62017—UN—28JUL21



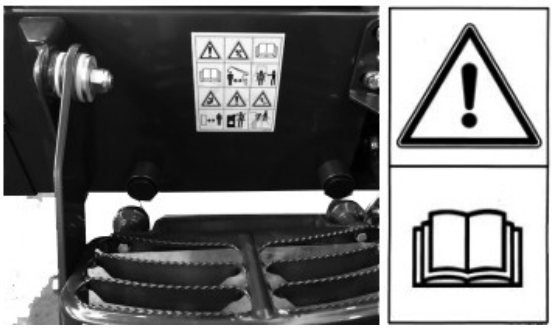
APY62018—UN—28JUL21



APY62019—UN—29JUN21



APY62020—UN—29JUN21



APY62021—UN—29JUN21

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

KWPZAG2,00009C3-19-26AUG21

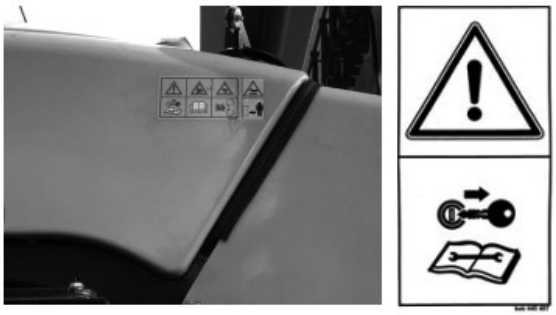
Shields Decal

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.

APY62022—UN—29JUN21



APY62023—UN—29JUN21

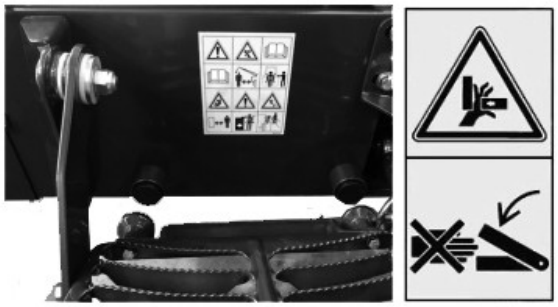
APY62024—UN—29JUN21
KWPZAG2,00009C4-19-26AUG21

Platform Ladder Decal/Do Not Ride Decal

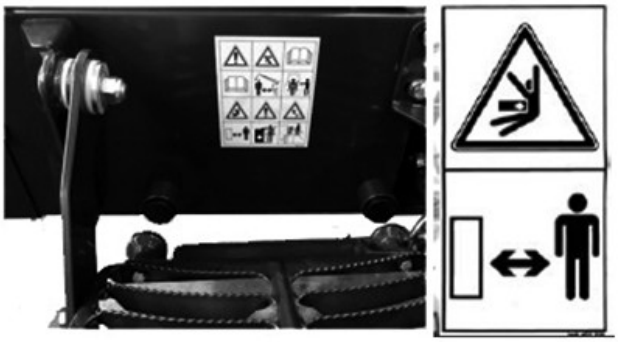
CAUTION: Keep people out of range while parts are moving.

CAUTION: Avoid serious injuries from falling. Do NOT ride on Machine.

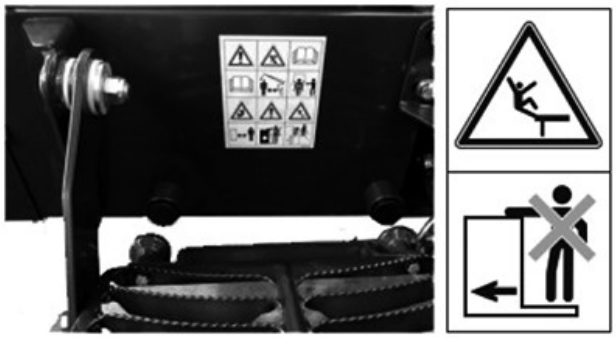
APY62025—UN—27JUL21



APY62026—UN—29JUN21



TG531181—UN—07FEB22



TG531180—UN—07FEB22
VK06011,00008E3-19-15MAR22

Passenger Seat Decal

APY62027—UN—29JUN21

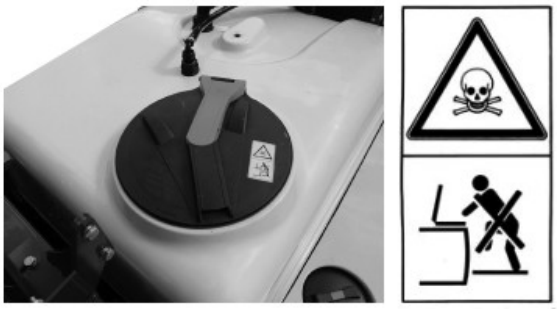
IMPORTANT: If it is necessary to transport a passenger, the passenger seat is the only means of transport of a passenger condoned by John Deere.

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

KWPZAG2,00009C6-19-26AUG21

Danger of Poisoning

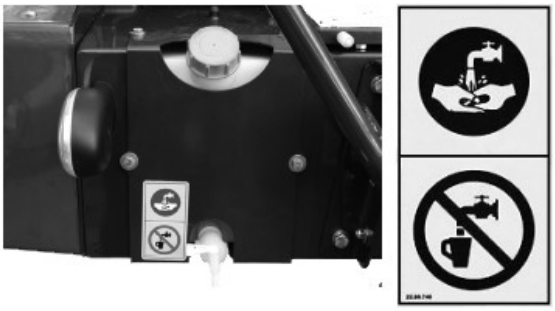
CAUTION: Tank contents are poisonous. Do NOT enter the tank.



APY62028—UN—29JUN21
KWPZAG2,00009C7-19-26AUG21

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.



APY62029—UN—29JUN21
KWPZAG2,00009C8-19-26AUG21

Wheel Hardware Decal

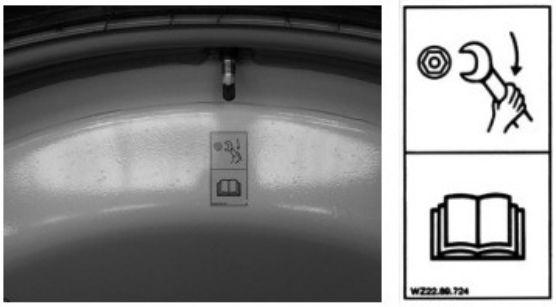
IMPORTANT: Damage to the planetary hub and wheel can occur if the correct mounting nut torque is not maintained.

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

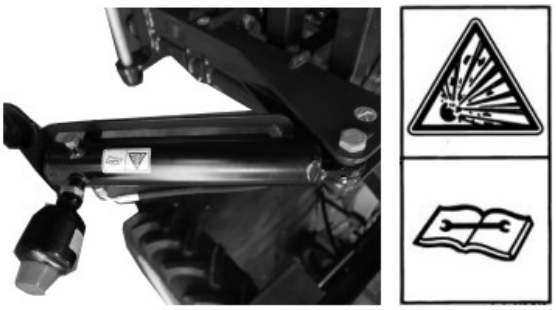
Wheel Mounting Nuts—Torque. . . . . 510 N·m (376 lb·ft)



APY62031—UN—29JUN21
KWPZAG2,00009C9-19-26AUG21

Boom Cylinder Accumulator Decal

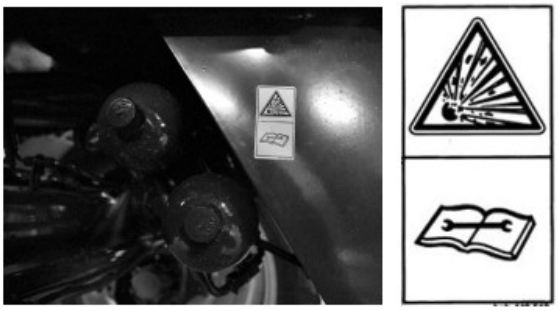
CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See the nearest dealer for service.



APY62032—UN—29JUN21
KWPZAG2,00009CA-19-26AUG21

Front Suspension Accumulator Decal

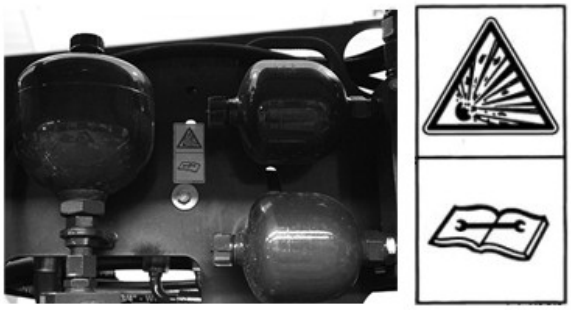
CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See the nearest dealer for service.



APY62033—UN—29JUN21
KWPZAG2,00009CB-19-26AUG21

Rear Suspension Accumulator Decal

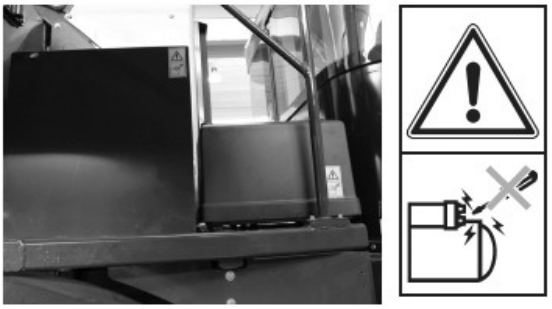
CAUTION: To prevent the risk of injury, as well as possible damage to the accumulator or hydraulic system, maintain the recommended nitrogen gas pressure. See the dealer for service.



APY62034—UN—29JUN21
KWPZAG2,00009CC-19-26AUG21

Electric Boxes Decal

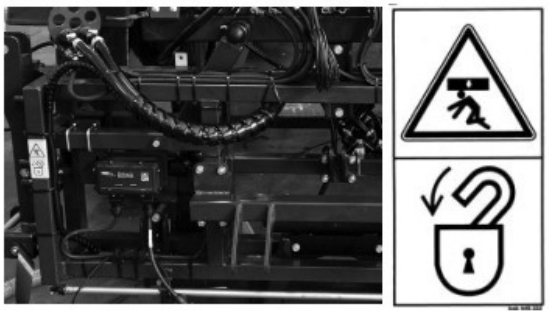
CAUTION: Shut off engine and remove the power cord before performing cleaning, maintenance, or repair work.



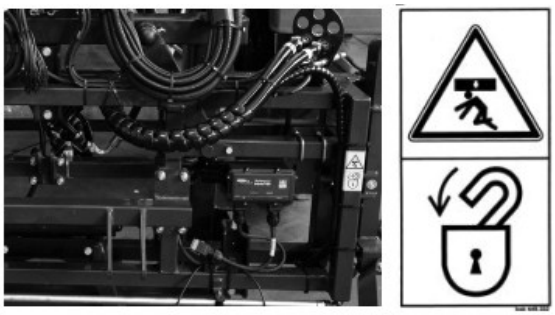
APY62035—UN—29JUN21
KWPZAG2,00009CD-19-26AUG21

Boom Spray Lock Decal

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



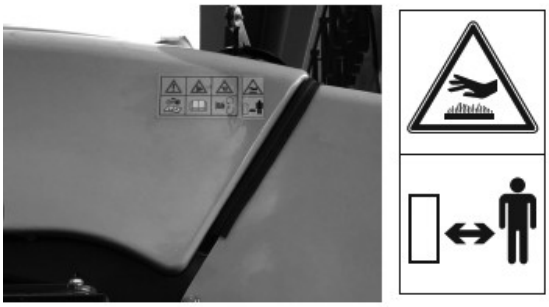
APY62036—UN—29JUN21



APY62037—UN—29JUN21
KWPZAG2,00009CE-19-26AUG21

Hot Surfaces Decal

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

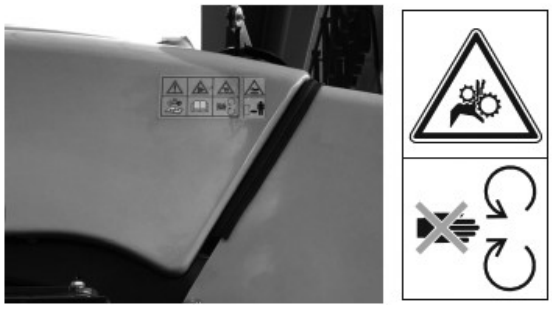


APY62038—UN—29JUN21
KWPZAG2,00009CF-19-26AUG21

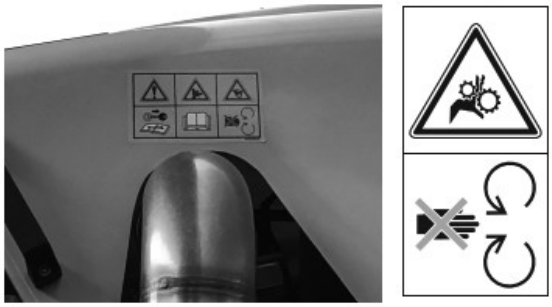
Moving Parts Decal

CAUTION: Do NOT open or remove safety shields while the engine is running.

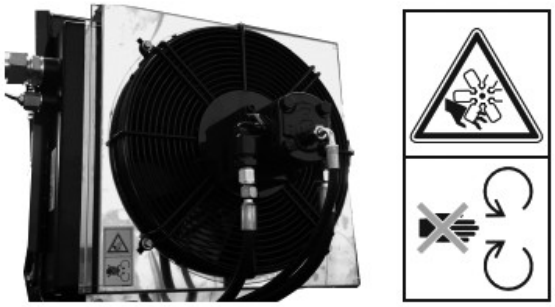
CAUTION: Keep the hands away from moving parts of the boom.



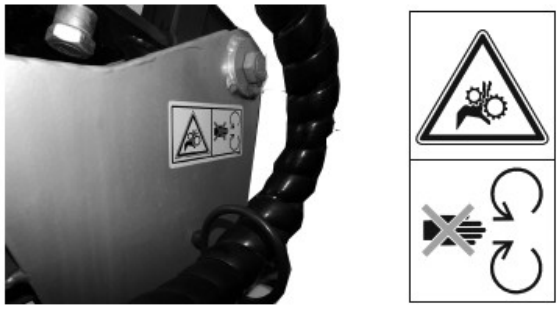
APY62039—UN—29JUN21



APY62040—UN—29JUN21



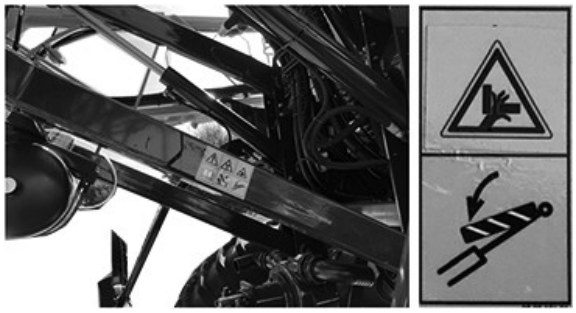
APY62041—UN—29JUN21



APY62042—UN—29JUN21
KWPZAG2,00009D0-19-26AUG21

Boom Hinge Point Decal

TG531996—UN—25FEB22



TG531997—UN—25FEB22

APY62044—UN—29JUN21

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.

VK06011,00008E2-19-15MAR22

Rotating Parts Decal

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

APY62047—UN—29JUN21
KWPZAG2,00009D3-19-26AUG21

Agricultural Chemicals Decal

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

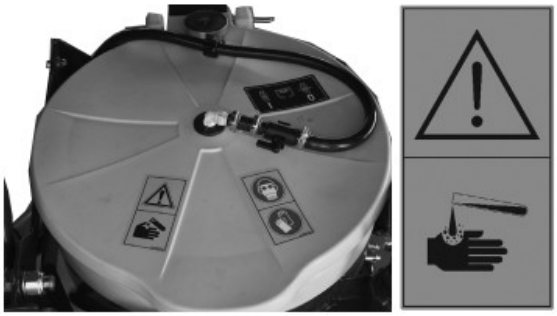
To avoid a chemical injury:

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

APY62048—UN—29JUN21

APY62049—UN—29JUN21

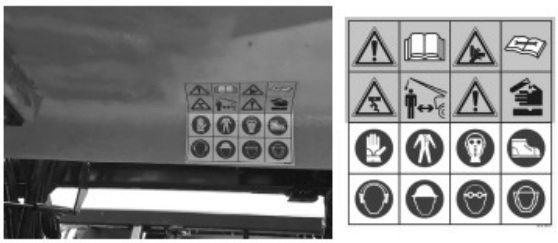
APY62050—UN—29JUN21



APY62051—UN—29JUN21
KWPZAG2,00009D4-19-26AUG21

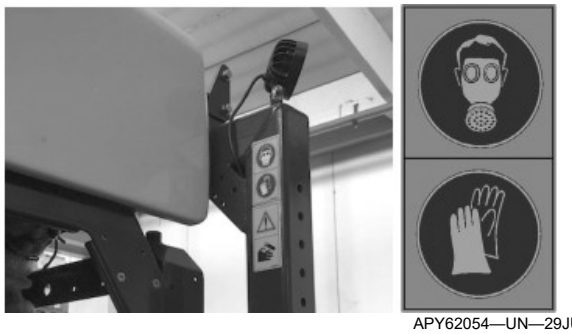
Personal Protection Decal

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

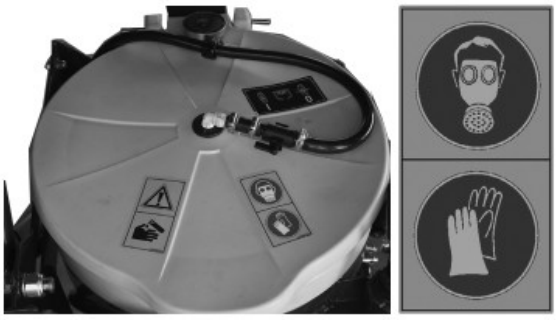


APY62052—UN—29JUN21

APY62053—UN—29JUN21

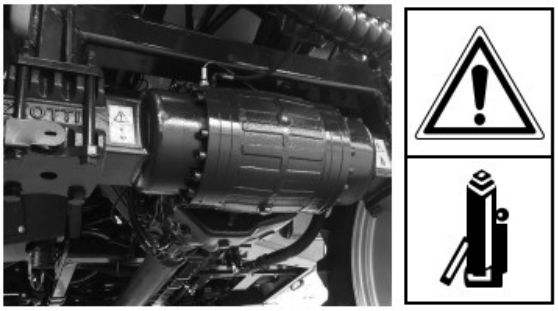


APY62054—UN—29JUN21



APY62055—UN—29JUN21
KWPZAG2,00009D5-19-26AUG21

Jack-Up Points Decal

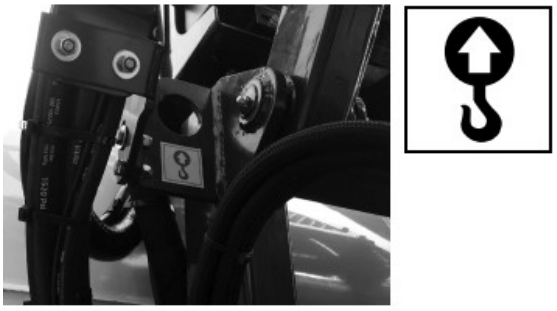


APY62056—UN—29JUN21

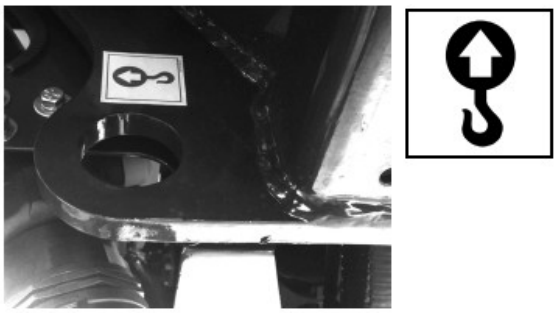
Warning decal is affixed near the points that can be raised with hydraulic jacks.

KWPZAG2,00009D6-19-26AUG21

Towing and Hooking Points Decal



APY62058—UN—29JUN21



APY62059—UN—29JUN21

This decal indicates the points to be used to lift or tow

the machine using lifting or towing equipment such as cranes, hoists. Attach the lifting straps to these points following the instructions in this manual.

KWPZAG2,00009D7-19-26AUG21

Greasing and Lubrication Points Decal

APY62057—UN—29JUN21

For the types of lubricants that can be used and the procedures to be followed, carefully observe the instructions in this manual.

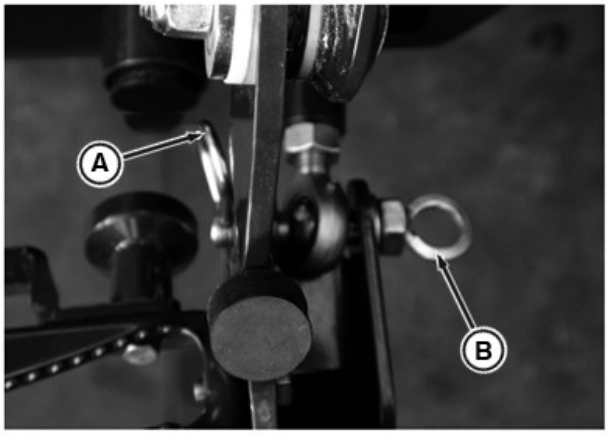
KWPZAG2,00009D8-19-26AUG21

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.

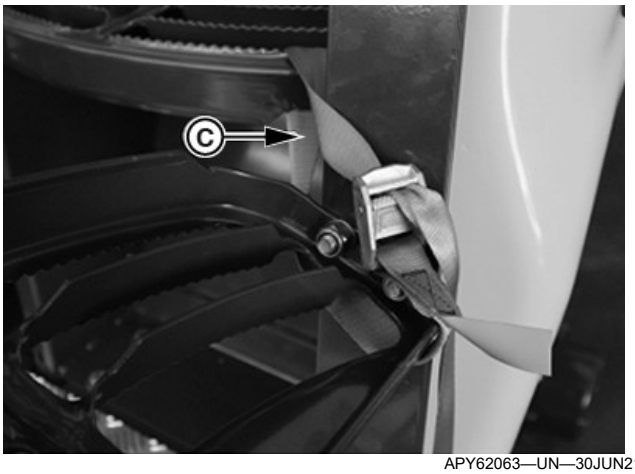
APY62060—UN—30JUN21

Lock the Ladder Manually



APY62061—UN—30JUN21

APY62062—UN—30JUN21



APY62063—UN—30JUN21

A—Cotter Pin
B—Bolt
C—Strip

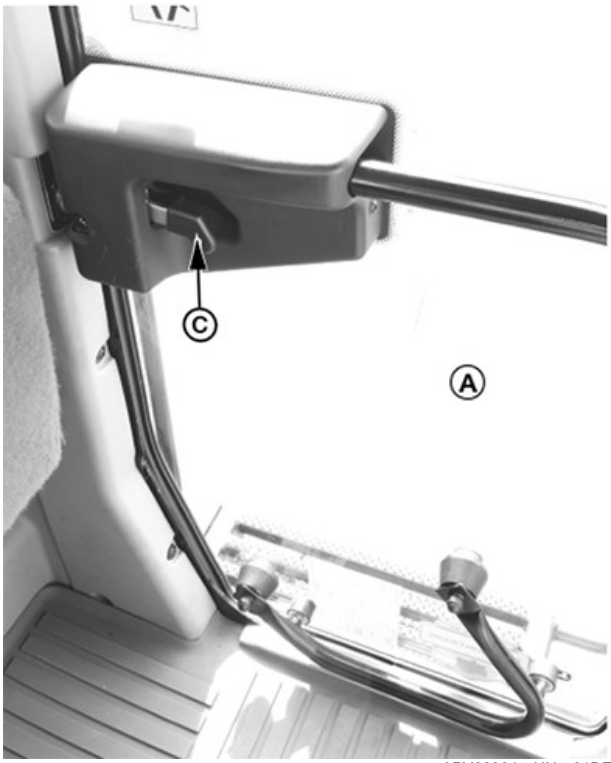
1. Before lifting the ladder, remove the cotter pin (A) in the vertical direction, then remove the bolt (B).
2. Lift the ladder until it is upside down. Insert the bolt (B) in the location indicated (safety hole). Assemble the cotter pin (A).
3. If the ladder mechanism does not contain the safety hole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

KWPZAG2,0000AA0-19-06SEP21

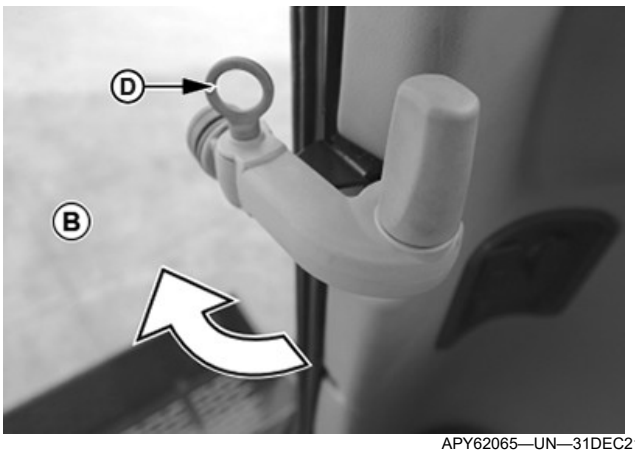
Emergency Exit

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

NOTE: Right-hand door is opened by removing the 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

KWPZAG2,0000AA1-19-06SEP21

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 or 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
KWPZAG2,0000AA2-19-06SEP21

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 which cab category is installed on the machine.

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

IMPORTANT: The cab roof and external filters should be serviced 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: In case of category 3 and 4 cabs, find out 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 cab offers against harmful substances in crop protection chemicals or liquid fertilizers.

NOTE: Replace the label if missing or damage. See your/an authorized John Deere dealer for assistance.

APY62067—UN—30JUN21

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

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 a good condition.
2. Doors, windows, and roof fully closed.
3. Grommets for cables in the cab sealed properly.
4. The fan is ON condition.
5. Cab air filters are in a good condition.

KWPZAG2,0000AA3-19-06SEP21

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.

KWPZAG2,0000AA4-19-06SEP21

Safety Rules for the Category 4 Cab (If Equipped)

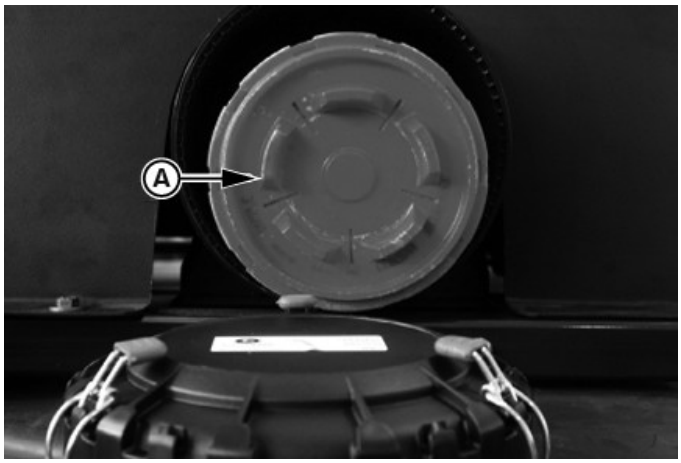
The plate mentioned and applied within the cabin informs that the cabin meets the requirements of DIN EN 15695-1.

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.

IMPORTANT: Make sure to replace the filter only with EPCA 5732 filter. It is forbidden to use filters other than the ones recommended.

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



APY62068—UN—30JUN21

APY62069—UN—30JUN21

A—Filter
B—External Housing
C—Filter Compartment

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 increase fan speed (F) or decrease fan speed (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. Contact the authorized John Deere dealer.

During normal use of the machine should always check:

APY62070—UN—30JUN21

D—Pop-Up
E—Fan Speed Decrease Button

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) comes up with the fan at maximum speed, it means that external filters are clogged and require 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.

F—Fan Speed Increase Button
G—Auto Adjust Option (fan speed)

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.

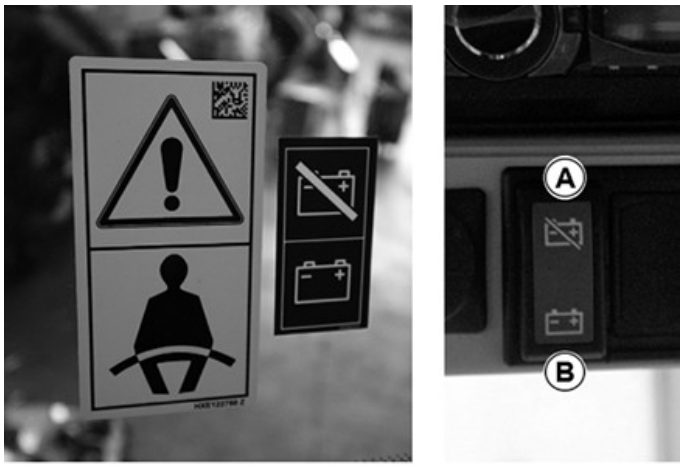
While Spraying

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.

KWPZAG2,0000AA5-19-06SEP21

Battery Lock Decal



APY62071—UN—30JUN21

A—Battery OFF

1. Battery lock decal is positioned on the left-hand side door, as indicated in the image.
2. Battery OFF (A) is the switch position for disconnecting the battery before dismounting from the machine.

B—Battery ON

3. Battery ON (B) is the switch position for switching on the machine.

KWPZAG2,0000AA6-19-06SEP21

Vehicle Controls

TG532007—UN—04JUL22

APY62073—UN—08AUG21

APY62074—UN—30JUN21

1—Reading Light
2—Radio
3—Left-Hand Mirror Control (2 used)
4—Electronic Battery Switch
5—Not Used
6—Engine Regeneration
7—Right-Hand Mirror Controls
8—Steering Column with Main Switch and Turn-Signal Lever
9—Turn-Signal and Hazard Warning Light Lever
10—Mazzotti Multi-Functional Lever (eqipped with Mazzotti spray system)
11—CommandARM™
12—Tera 10 Monitor
13—Main Switch
14—Break Pedal (MAF 3180 if equipped)
15—USB Port
16—12 V Port
17—Fuses and Utilities Panel
18—JD Multi-Functional Lever (present with MSpray System)
19—JD Monitor (if equipped)

vk06011,1657088777115-19-06JUL22

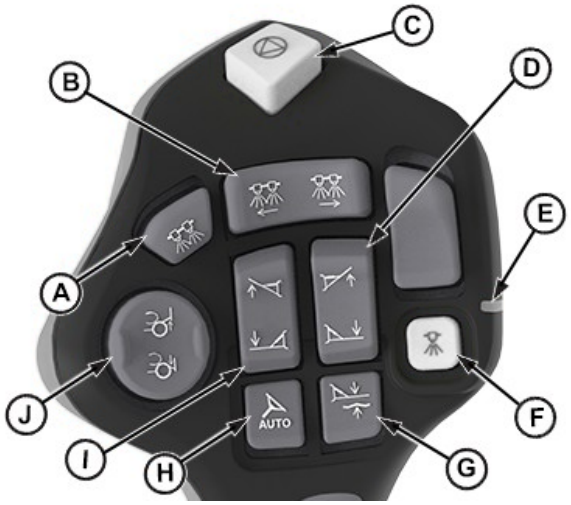
CommandARM is a trademark of Deere & Company

MSpray Multi-Function Lever

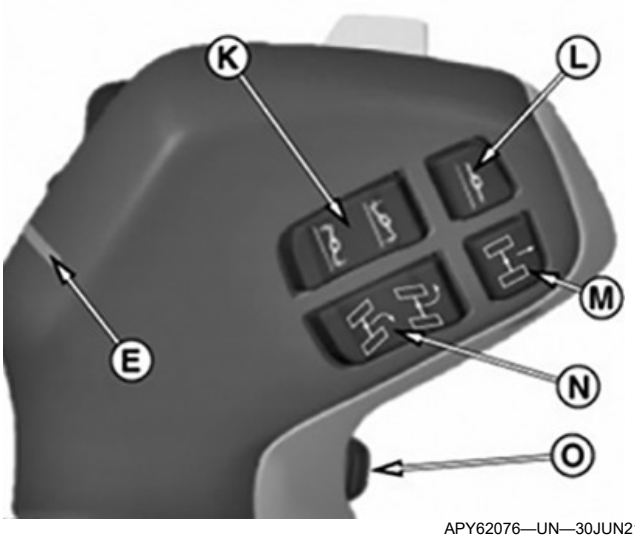
Multi-Function Lever—Travel Direction

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

In Machine Settings-General, Speed Source field option, Tractor Wheel should not be used as an input. Tractor Wheel is not available as input when using the multi-function control.



WZ556891—UN—09DEC22



APY62076—UN—30JUN21

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.

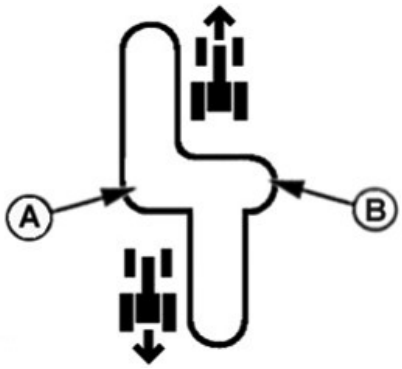
  The LED indicator (E) starts blinking, and a pop-up folding symbol appears on the main screen of the control display.

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	SprayMaster 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
[a]If there is no description, then the button function is not available.

Multi-Function Lever—Travel Direction



APY62077—UN—30JUN21

A—NEUTRAL
B—PARK

- Push the multi-function lever for the forward travel.
- Pull the multi-function lever for the reverse travel.
- Put the multi-function lever in mid position for NEUTRAL (A) or PARK (B).
- The multi-function lever should be in the PARK (B) for engine to start.

AutoTrac™ Resume Button (if equipped)

H117005—UN—15APR16

AutoTrac

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.

byhneba,1671453464548-19-19DEC22

Mazzotti Multi-Function Lever

APY62078—UN—30JUN21

Multi-Function Lever (Mazzotti)

A—Multi-Function Lever

CAUTION: Do NOT make abrupt movements with the control lever. The forward speed is directly proportional to the extent of the movement of the lever and the number of revolutions of the diesel engine.

CAUTION: The control lever, when in mid position, has a restraining lock to prevent accidental movements. To operate the lever, move it to the right/left depending on the direction of travel.

IMPORTANT: When moving forward or backward, and during booms movements, the external warning buzzer sounds, and the reverse gear lights turn on.

NOTE: The forward multi-function lever (A) allows the machine to be moved and features buttons to control the bars.

1. To move the machine forward, push the lever from the neutral central position first left, then towards the front windscreen.
2. To move the machine in reverse, pull the lever from the neutral central position first left, then towards the seat.
3. The forward control lever can be supplied with eight or ten functions related to the spraying booms.

Handling the Boom

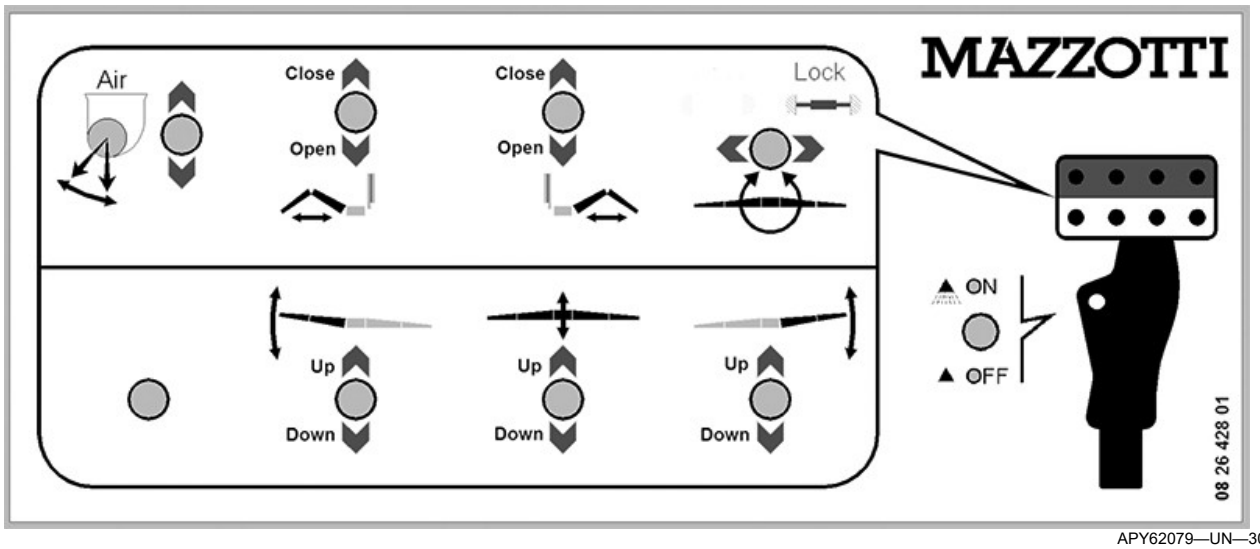
CAUTION: To avoid product drift, operate at a speed suitable for the processing to be carried out, the type of crop, the mixture used, and the weather conditions. If required, use anti-drift nozzles.

CAUTION: Do NOT operate the opening and closing controls of the booms close to overhead power lines. Pay attention when operating with variable geometry. If it is essential to maneuver the booms in these conditions, proceed with the parallelogram lowered as far as possible.

CAUTION: Open and close the booms only after machine and moving parts have stopped to ensure that mechanical parts are coupled properly and to avoid errors in handling and collisions with surrounding objects.

1. The safe release of the external arms:
   a. Avoids damaging of the boom, in case of accidental collisions with obstacles at the ends of the arms.
   b. It should not be used as mobile part for voluntary contacts (rows, poles, etc.).
   c. Press the controls to open the arms for a few seconds to obtain perfect coupling of the end-of-travel supports and greater compactness and solidity of the structure during the work cycle.
2. Movement of the spraying booms is controlled by the multi-function lever, which can have a variable number of switches depending on the configuration of the machine.
3. The most complete configuration is shown on the picture.
4. The joystick lever has an enable button that is intended to protect it against accidental movements.
5. When the engine temperature rises, press the relevant button to bring the engine to a 1900 rpm speed.

Standard Ti-M Boom—Mazzotti Joystick

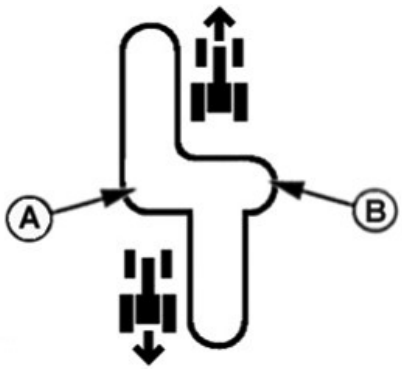


APY62079—UN—30JUN21

Reference	Description	Action
A	Multi-Function Lever	Move (push) gently backward to move the machine backward. Move/Push forward for backward travel.
1	Lever (if equipped)	Air Sleeve: Clockwise/Counterclockwise Rotation
2	Lever	Boom Inner Sections: Opening/Closing
3	Lever	Boom External Sections: Opening/Closing
4	Lever	Boom Oscillation: Lock/Release
5	Empty	Not Used
6	Lever	Left Boom Variable Geometry: Lifting/Lowering
7	Lever	Boom Frame: Lifting/Lowering
8	Lever	Right Boom Variable Geometry: Lifting/Lowering
9	Switch	Product Flow: Activation/Deactivation

Standard Ti-M Boom - Joystick Mazzotti

Multi-Function Lever—Travel Direction

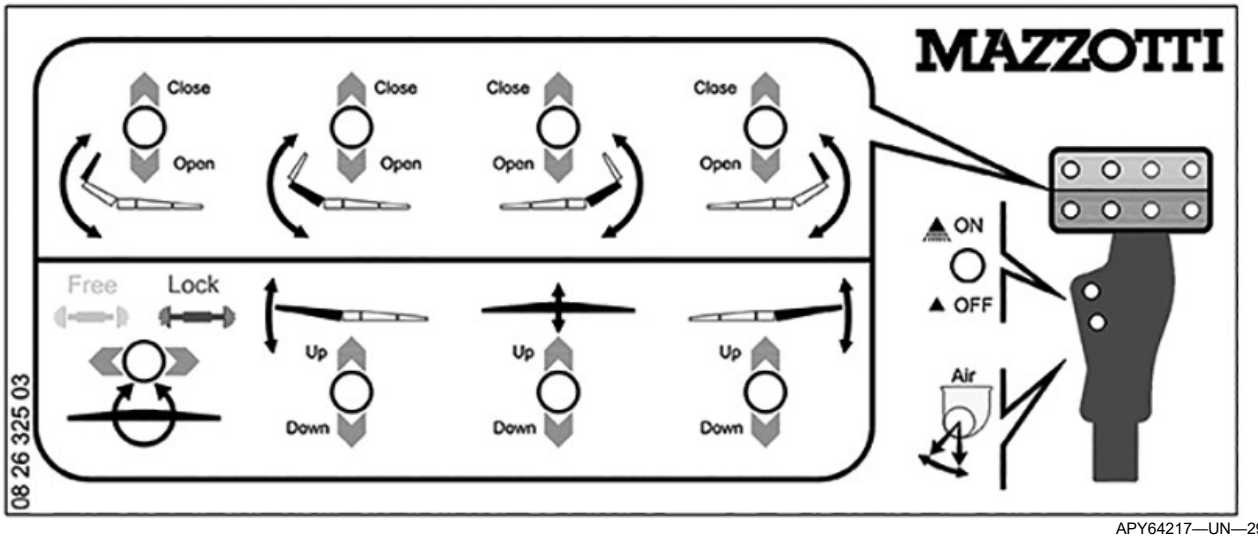


APY62077—UN—30JUN21

A—Neutral
B—Park

1. Push the multi-function lever for the forward travel.
2. Pull the multi-function lever for the reverse travel.
3. Put the multi-function lever in mid position for NEUTRAL (A) or PARK (B).
4. The multi-function lever should be in the PARK (B) for engine to start.

Ti-M Boom—Independent Opening/Closure—Joystick Mazzotti

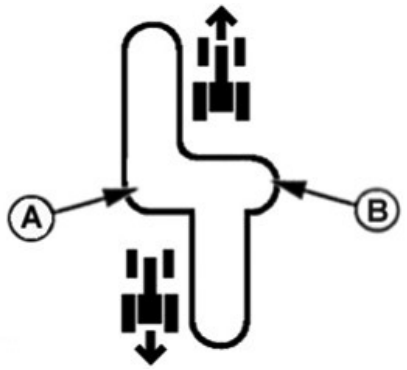


APY64217—UN—29JUL21

Reference	Description	Action
A	Multi-Function Lever	Move it gently forward to advance the machine. Pull it backwards for reverse.
1	Lever	Boom External Left Section: Opening/Closing
2	Lever	Boom Inner Left Section: Opening/Closing
3	Lever	Boom Inner Right Section: Opening/Closing

4	Lever	Boom External Right Section: Opening/Closing
5	Lever	Hydraulic Pendulum Locking: Opening/Closing
6	Lever	Left Boom Variable Geometry: Lifting/Lowering
7	Lever	Boom Frame: Lifting/Lowering
8	Lever	Right Boom Variable Geometry: Lifting/Lowering
9	Switch	Product Flow: Activation/Deactivation
10	Lever (if equipped)	Air Sleeve: Clockwise/Counterclockwise Rotation

Multi-Function Lever —Travel Direction

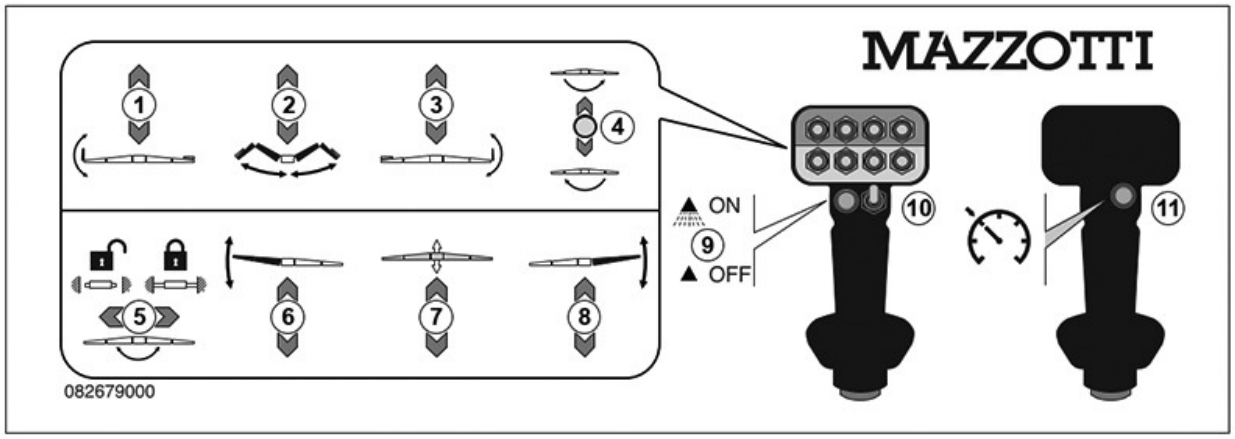


APY62077—UN—30JUN21

A—Neutral
B—Park

1. Push the multi-function lever for the forward travel.
2. Pull the multi-function lever for the reverse travel.
3. Put the multi-function lever in mid position for NEUTRAL (A) or PARK (B).
4. The multi-function lever should be in the PARK (B) for the engine to start.

MK Boom Joystick Mazzotti—3 Part Folding (3PF)

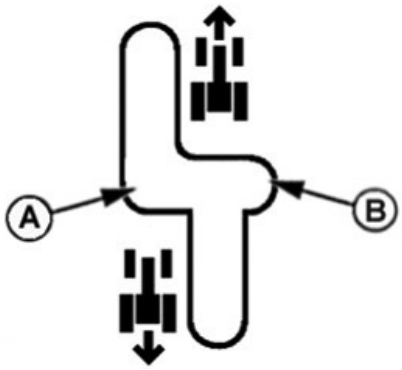


APY64218—UN—02JUL21

Reference	Description	Action
A	Multi-Function Lever	Move it gently forward to advance the machine. Pull it backwards for reverse.
1	Lever	Boom External Left Section: Opening/Closing
2	Lever	Boom Inner Sections: Opening/Closing.
3	Lever	Boom External Right Section: Opening/Closing
4	Lever	Hydraulic Slope Correction
5	Lever	Hydraulic Pendulum Locking: Opening/Closing
6	Lever	Left Boom Variable Geometry: Lifting/Lowering
7	Lever	Booms Frame: Lifting/Lowering
8	Lever	Right Boom Variable Geometry: Lifting/Lowering
9	Switch	Product Flow: Activation/Deactivation
10	Lever (if equipped)	Air Sleeve: Clockwise/Counterclockwise Rotation (not applicable for standard Ti-M Booms)

11	Push Button	Speed Limit (not available for MS08 hydraulic motors)

Multi-Function Lever—Travel Direction



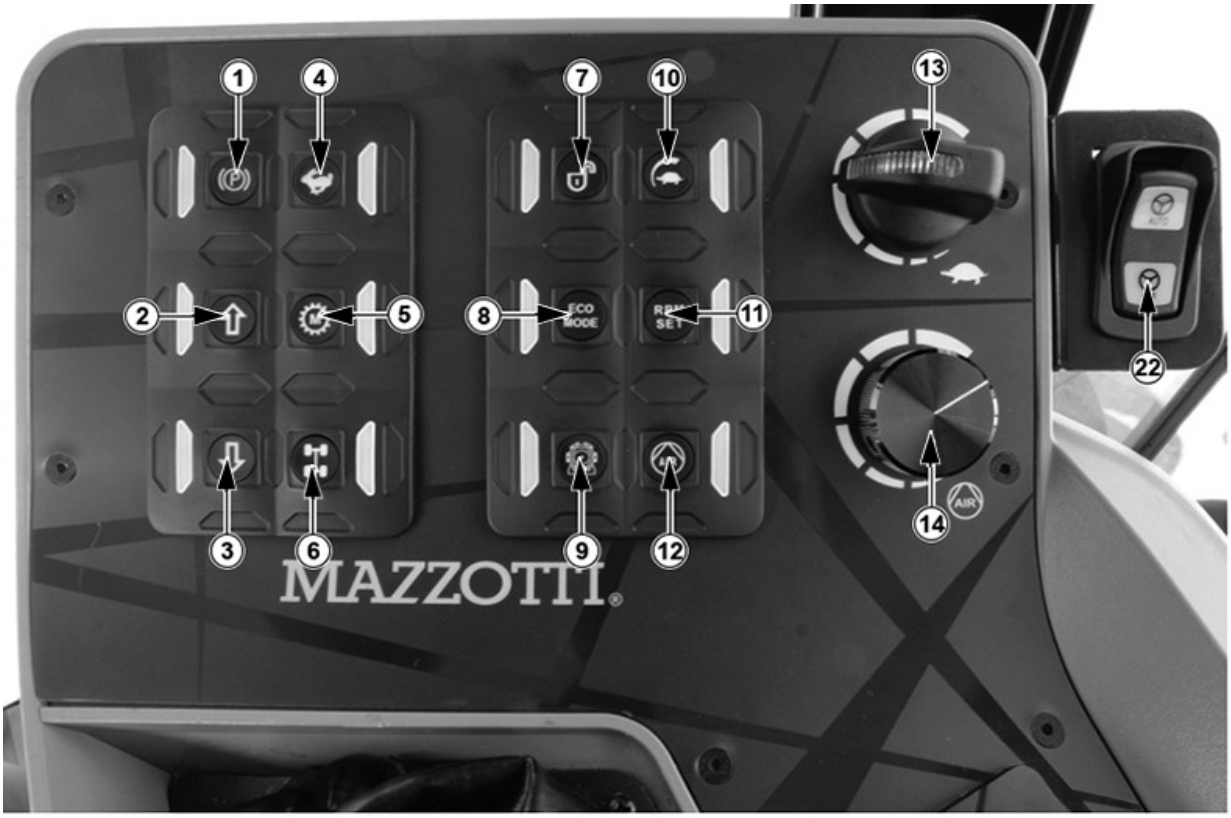
APY62077—UN—30JUN21

A—Neutral
B—Parking

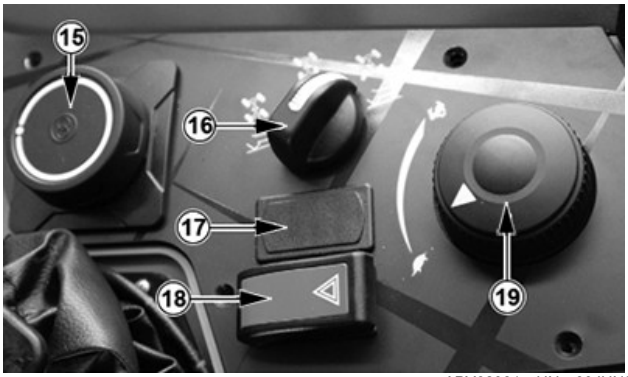
1. Push the multi-function lever for the forward travel.
2. Pull the multi-function lever for the reverse travel.
3. Put the multi-function lever in mid position for NEUTRAL (A) or PARK (B).
4. The multi-function lever should be in the PARK (B) for engine to start.

vk06011,1666254015417-19-20OCT22

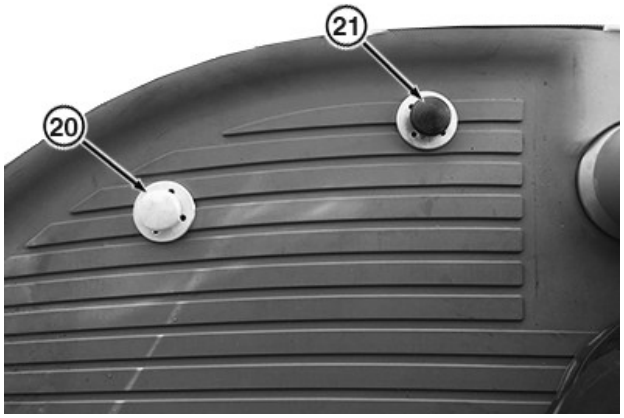
CommandARM™ Controls



APY62080—UN—30JUN21



APY62081—UN—30JUN21



TG529778—UN—13JAN22

APY62083—UN—30JUN21

1—Parking Brake Button
2—Cabin Access Ladder Lock Button
3—Cabin Access Ladder Button
4—Fast Speed ON/OFF
5—Standard Machine (not used) and Machine with Mechanical Axle (mechanical gear shift I and II)
6—Standard Machine (not used) and Mechanical Axle Machine: 4-Wheel Drive (activation/deactivation)
7—Enable/Inhibit Control Lever
8—Standard Machine (not used) and Hp Version Machine: EcoMode Function (can only be activated in road transfer mode- once constant running speed is reached)
9—Water Pump (activation/deactivation)
10—Slow Motion Function ON/OFF
11—Constant Engine Speed Function (1900 rpm-activation/ deactivation)
12—Air Sleeve Activation/Deactivation (if equipped)
13—Potentiometer (for speed control in slow motion)
14—Potentiometer (for controlling air sleeve flow)
15—Tera 10 Monitor Pointer and Selector
16—Steering Type Selector
17—Not Used
18—Emergency Lights
19—Engine rpm Potentiometer
20—Foot Button (if equipped) for AutoTrac™ Activation/ Deactivation (yellow) (only for options equipped with Mazzotti joystick)
21—Foot Button (for changing from 4-wheel drive system to 2-wheel system)
22—ATI Steering Switch: ON/OFF
23—Differential Lock Foot Button (only for options equipped with differential axle)

Differential Lock Foot Button:

Differential lock foot button utilised only during field mode. The button is used for two machine options, for machine equiped with MHP11 differential lock and for machines equipped with mechanical diffrential lock.

vk06011,1666254108234-19-20OCT22

is a trademark of Deere & Company

TERA 10 Display

APY62084—UN—30JUN21

TERA 10 Display Functions

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

- The Tera 10 is a multifunctional 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.

CAUTION: When the parking icon flashes, it means 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:

APY62085—UN—30JUN21

1—MAIN Page View
2—DIAGNOSTIC Page View
3—SPRAY Functions Page View
4—MACHINE MANAGEMENT Page View
5—Air-Conditioning Page View
6—Instant Fuel Consumption
7—Poclain Error Codes (Hp version only)
8—Machine Working Hours
9—Insufficient Battery Charge (warning light)
10—Active Agitation Sign
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 56)
15—Active Recirculation Sign
16—Engine Alarm Signal Indicator Light
17—Engine Failure or Defect
18—Glow Plug Cold-Weather Indicator
19—Main-Beam Light Warning Light ON
20—Lamp Illuminated or Lamp Activated
21—Indicator Right/Left Light Activated
22—Position Lamp ON
23—Joystick Function Disabled
24—Non-Magnified Mechanical Gear Signal (MC-version only)
25—Slow Motion Function Inserted
26—Quick Forward Signaling Indicator Lamp Inserted
27—Slow Gear Indicator Lamp Inserted
28—Rear Differential Lock (MC-version only)
29—Front Differential Lock (MC-version only)
30—4-Wheel Drive Signal Light (MC-version only)
31—Front Steering Wheel Warning Signal
32—Circular Steering Signal Light
33—Crab Steering Signal
34—Rear Axle Lock Pin Signal (gray lamp) and OFF (yellow lamp)
35—Full Tank-Signaling Tell-Tale
36—First Gear Engaged Indicator Lamp (MC-version only)
37—Second Gear Signal Lamp Inserted (MC-version only)
38—Not Used
39—Lamp Parking Brake Input
40—Joystick Marking Indicator Light (N=Neutral, R=Reverse, 1 or 2)
41—Active Water Pump Warning Light
42—Front Steering Signal Lamp in Center Position
43—Rear Steering Signal Lamp in Center Position
44—Engine rpm Indicator
45—This icon ON without error codes indicates that the machine working time limit beyond which scheduled maintenance is required has been reached (the icon remains active for 40 hours and then turns off).
46—Not Working
47—Not Working
48—Motor Oil Pressure Display (in bars and psi)
49—Engine Oil Low-Pressure Warning Light
50—Engine Coolant Temperature Display (in °C and °F)
51—Engine Liquid Coolant Temperature Warning Light
52—Fuel Reserve Report Light
53—Fuel Level Display
54—Software Version
55—Left Boom Geometry (for England)
56—Machine Alarm Codes (check Diagnostics and Troubleshooting section for reference)
57—Right Boom Geometry (for England)
58—Boom Self-Leveling
59—EU Low-Level Signal Indicator Light (urea less than 10% = fixed on lamp and urea less than 5% = flashing lamp)
60—Urea Tank Fill Level

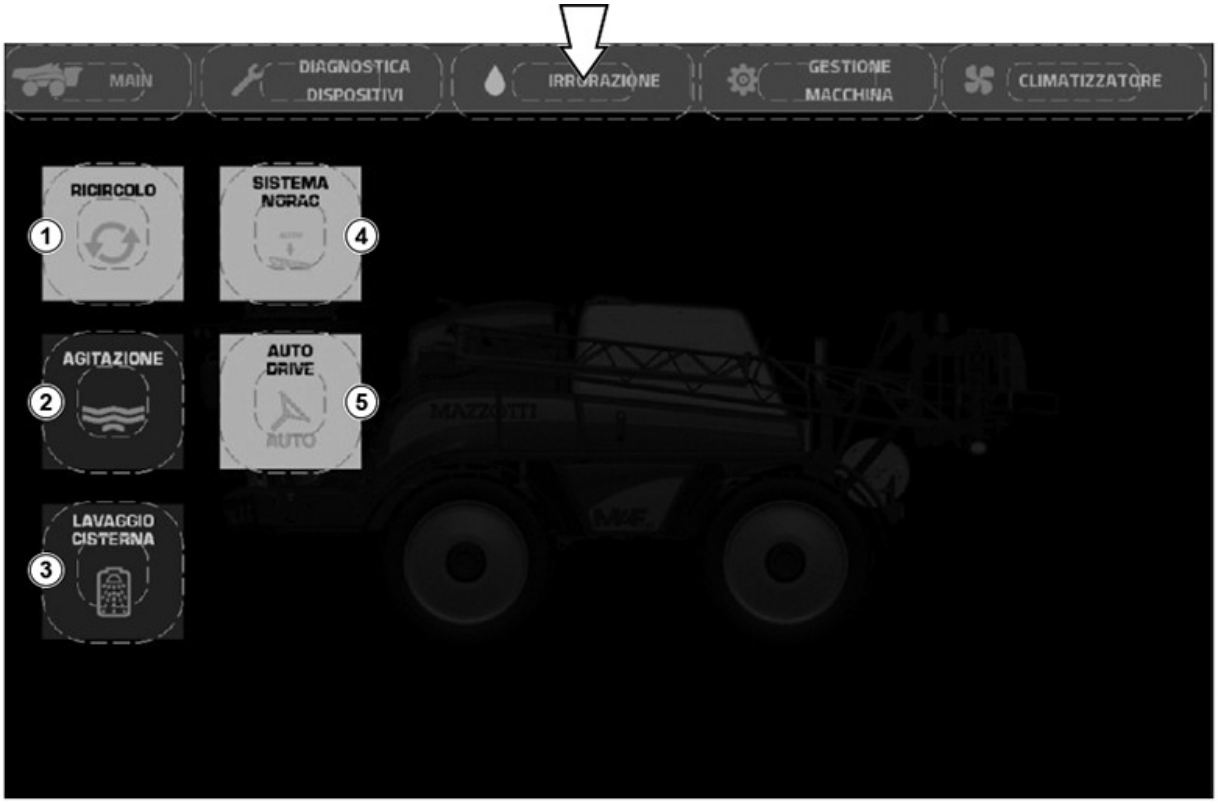
Diagnostic Screen

APY62086—UN—30JUN21

Diagnostic Screen

1—MC2M Cab Control Unit Diagnostic Page
2—MC2M Chassis Controller Diagnostic Page
3—IO CORE Controller Diagnostic Page
4—LIBERTY LINK Diagnostic Page
5—CAN Line Diagnostic Page
6—SERVICE Diagnostic Page
7—ALARMS Diagnostic Page
8—MIDAC Steering System Diagnostic Page

Spray Screen



APY62087—UN—30JUN21

1—Flushing Activation/Deactivation
2—Agitation Activation/Deactivation
3—Rinsing Spray Tank Activation/Deactivation
4—NORAC® System Activation/Deactivation
5—Auto Drive Activation/Deactivation

NORAC is a trademark of NORAC Systems International, Inc.

Machine Management Screen

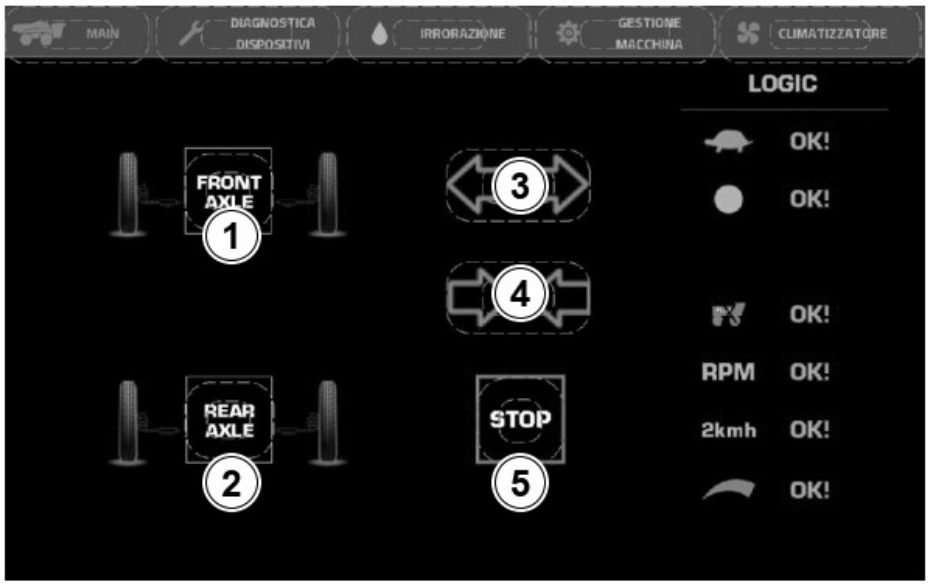
APY62088—UN—30JUN21

1—Screen Tread Settings
2—Screen Working Lights
3—Screen Steering System

Screen Tread Width Settings

Automatic Axle

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



APY62089—UN—30JUN21

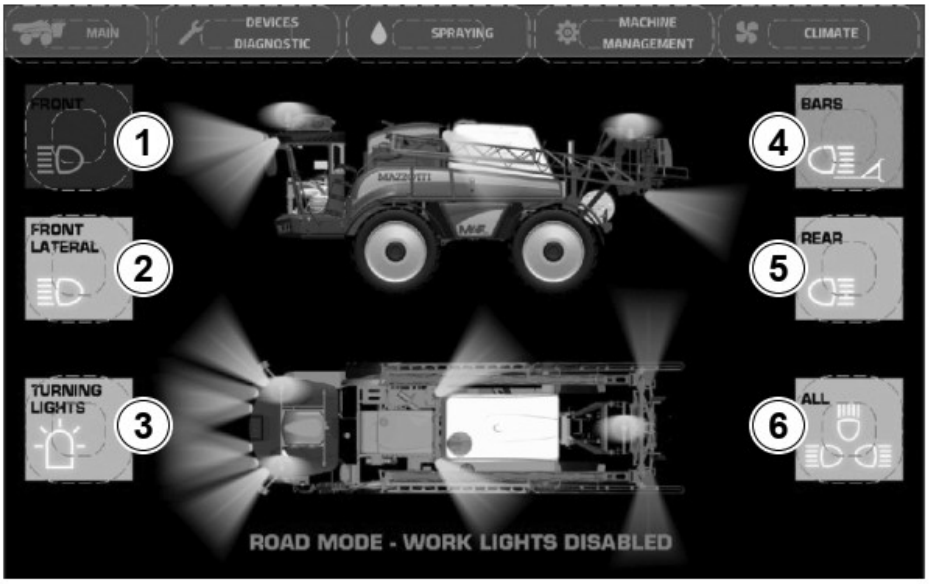
1—Front Axle Option Icon
2—Rear Axle Option Icon
3—Open Tread Settings Icon
4—Close Tread Settings Icon
5—Stop Operation

Hydraulic Axle (with hydraulic lock)

APY62090—UN—30JUN21

1—Green Axle Icon (axle is unlocked)

Works Light Screen

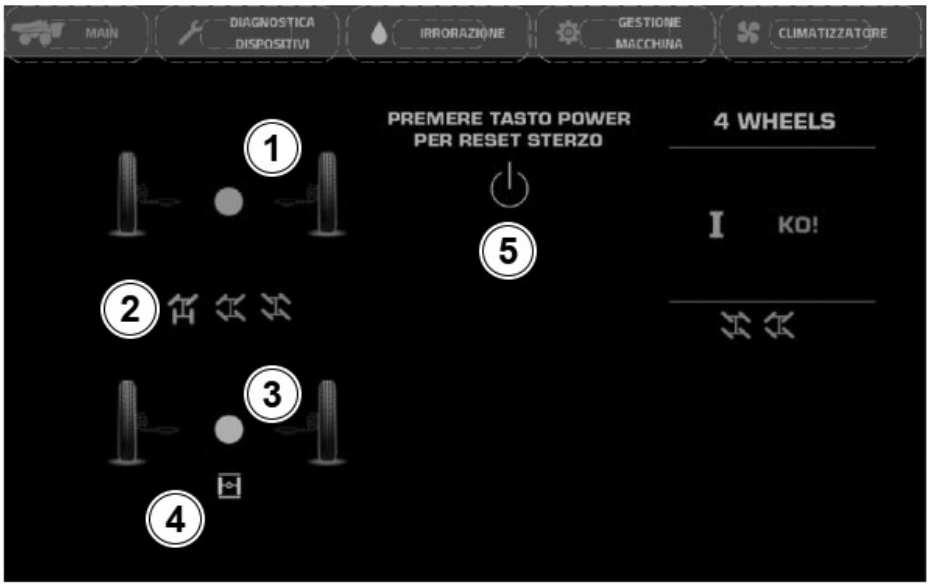


APY62091—UN—30JUN21

1—Front Lights ON/OFF
2—Side Front Lights ON/OFF
3—Beacon Light ON/OFF
4—Boom Lights ON/OFF
5—Rear Working Lights ON/OFF
6—All Working Lights ON/OFF

Steering System Screen

Standard Steering System



APY62092—UN—30JUN21

1—Front Axle in Central Position Indication Light
2—Active Steering System Indication Light
3—Rear Axle in Central Position Indication Light
4—Free Rear Axle Locking Pin Indication Light
5—Steering System Reset

Air Conditioning Page

APY62093—UN—30JUN21

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

5—Air Flow Reduction Button
6—Air Flow Increase Button
7—Automatic Function
8—Air Conditioning Activation/Deactivation

VK06011,00008D2-19-22APR22

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.

APY62095—UN—30JUN21

18—Indicator Light
40—Neutral Icon

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.

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.

KWPZAG2,0000AAC-19-06SEP21

Adjust Steering Wheel

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

APY62096—UN—30JUN21

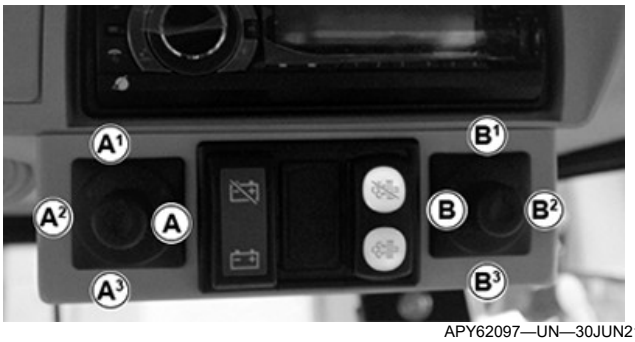
A—Tilt Lever
B—Ring

To adjust the steering wheel:

1. Pull the tilt lever (A) upward.
2. Move steering wheel to the desired angle and release the lever.
3. Unfasten the ring (B) to adjust the steering wheel height.
4. Retighten the ring (B) once the adjustment is completed.

KWPZAG2,0000AAD-19-06SEP21

Outside Mirror Control Switch



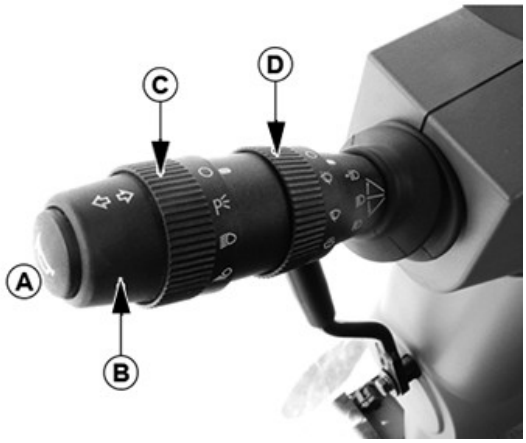
APY62097—UN—30JUN21

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

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 (A^2) or (B^2).
3. If lower mirrors should be adjusted, use the switch by selecting the lower mirror adjusting control (A^3) or (B^3).
4. Two neutral positions (A^1) or (B^1) are available.
5. Adjust the mirror by moving the (pomello) left mirror control (A) or right mirror control (B) to the desired direction.

KWPZAG2,0000AAE-19-06SEP21

Operate Horn, Lights, and Turn Signals



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:

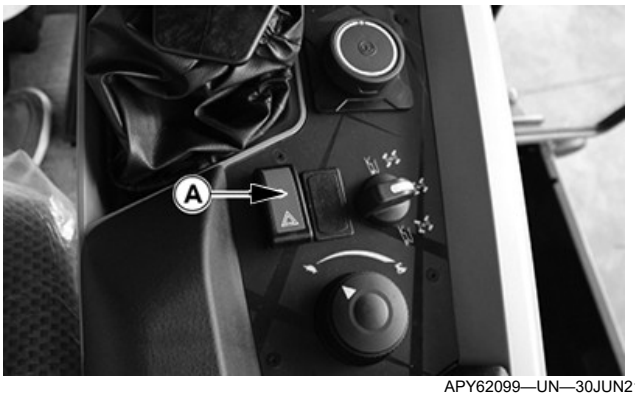
- Turn lights OFF.
- Activate position lights.
- Activate road low lights.
- Activate road high lights.

- Ignition should be turned on for windshield wipers to operate.
- Turn wiper switch (D) clockwise to select the wiper operation mode.

KWPZAG2,0000AAF-19-06SEP21

Hazard Warning 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).



APY62099—UN—30JUN21

A—Hazard Warning Light Switch

KWPZAG2,0000AB0-19-06SEP21

Beacon Lights

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

APY62100—UN—30JUN21

A—Beacon Light Button

KWPZAG2,0000AB1-19-06SEP21

Service Brake Pedal

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

APY64201—UN—02JUL21

A—Service Brake Pedal

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

KWPZAG2,0000AB2-19-06SEP21

APY64202—UN—02JUL21

Throttle Lever

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

APY64203—UN—02JUL21

A—Throttle Lever Knob
B—EcoMode 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. EcoMode is activated by pressing EcoMode ON/OFF button (B).
5. When EcoMode is on, there is no linear relationship between the throttle percentage and engine speed.
6. There are three steps on the throttle.

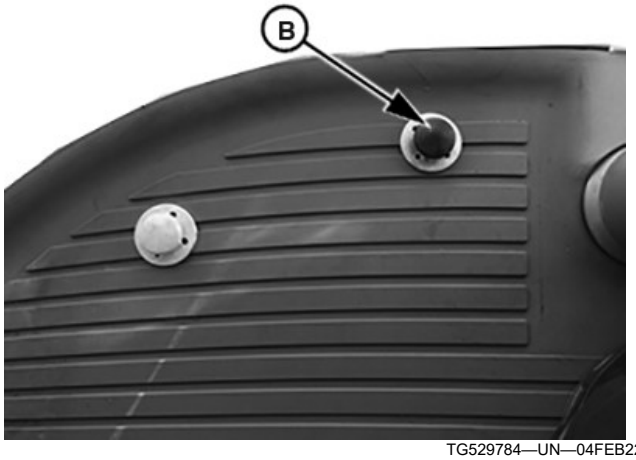
   - First: Low idle
   - Second: 1900 rpm
   - Third: High idle

KWPZAG2,0000AB3-19-06SEP21

Steering Mode Switch

APY64204—UN—02JUL21

APY64205—UN—02JUL21



TG529784—UN—04FEB22

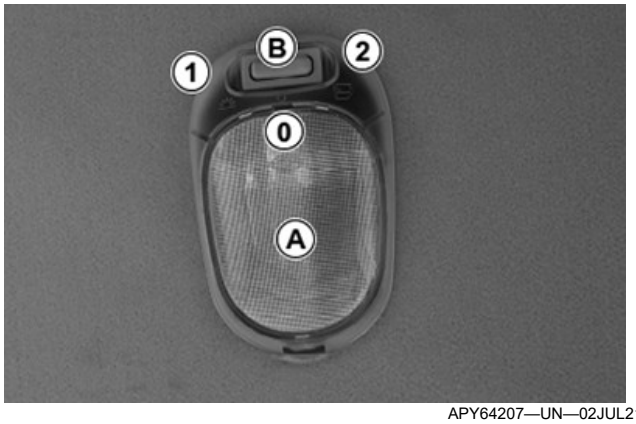
A—Steering Mode Switch
B—2-Wheel Steering Switch
1—Crab Steering
2—2-Wheel Steering
3—4-Wheel Steering

The three steering modes are:

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

VK06011,00008D3-19-17FEB22

Dome Light



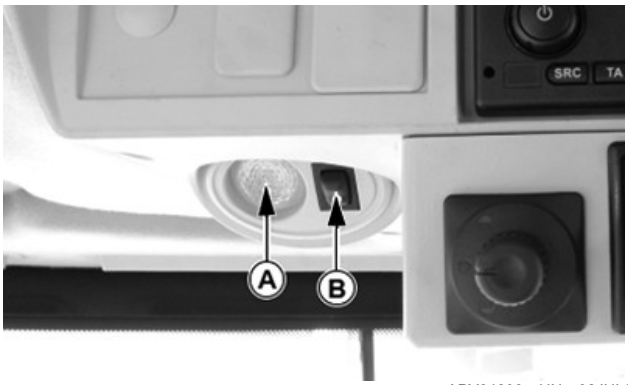
APY64207—UN—02JUL21

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

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

APY64209—UN—02JUL21

APY64210—UN—02JUL21

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').

KWPZAG2,0000AB7-19-06SEP21

Heater

APY64211—UN—02JUL21

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.

KWPZAG2,0000AB8-19-06SEP21

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.

APY64219—UN—02JUL21

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).

KWPZAG2,0000AB9-19-06SEP21

Opening Windows

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

APY65313—UN—07SEP21

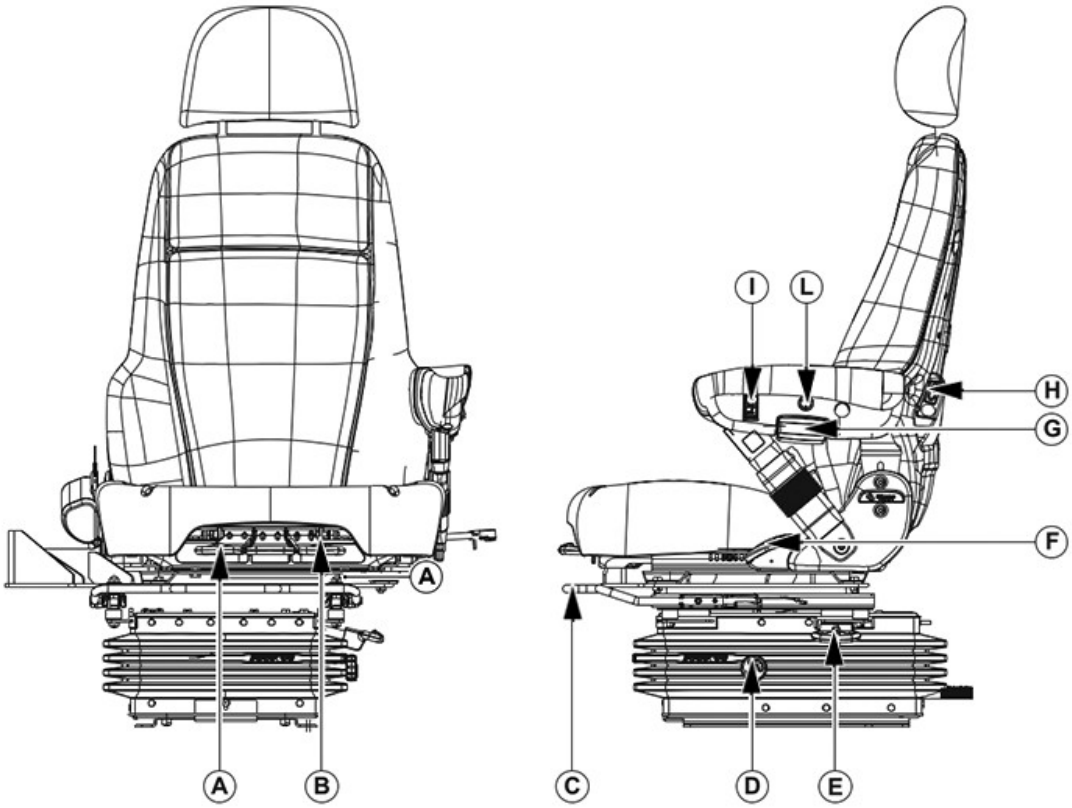
APY64213—UN—29JUL21

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

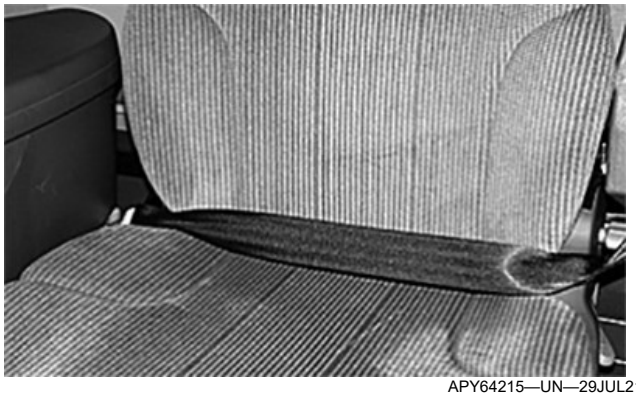
1. **Cushion extension control** (A) slides cushion forward or rearward.
2. **Cushion tilt control** (B) adjusts the cushion angle.
3. **Fore/aft adjustment control** (C) slides the seat forward or rearward for the best working position.
4. **Damper adjusting control** (D) allows adjustment of seat suspension.
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 the heating system, providing comfort during cold days.

KWPZAG2,0000ABB-19-06SEP21

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

J—Heated Cushion Control

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

Passenger Seat

CAUTION: Always wear the seat belt.

APY64216—UN—02JUL21

- 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

Break-In Period

Break-In Checks—First 100 Hours

NOTE: The engine is ready for the 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 observe coolant temperature during operation.
- Check 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 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

Change the planetary hub oil. See Planetary Hub Oil in Fuels, Lubricants, and Coolants section.

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.

KWPZAG2,000014A-19-26AUG21

Break-In is a trademark of Deere & Company

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.

APY64223—UN—05JUL21

APY64224—UN—05JUL21

A—Cap
B—Dipstick

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

After Prolonged Storage Period

Check whether dirt or other foreign bodies have collected under the hood. Remove them if necessary.

KWPZAG2,00009D9-19-26AUG21

Check Fuel Filter

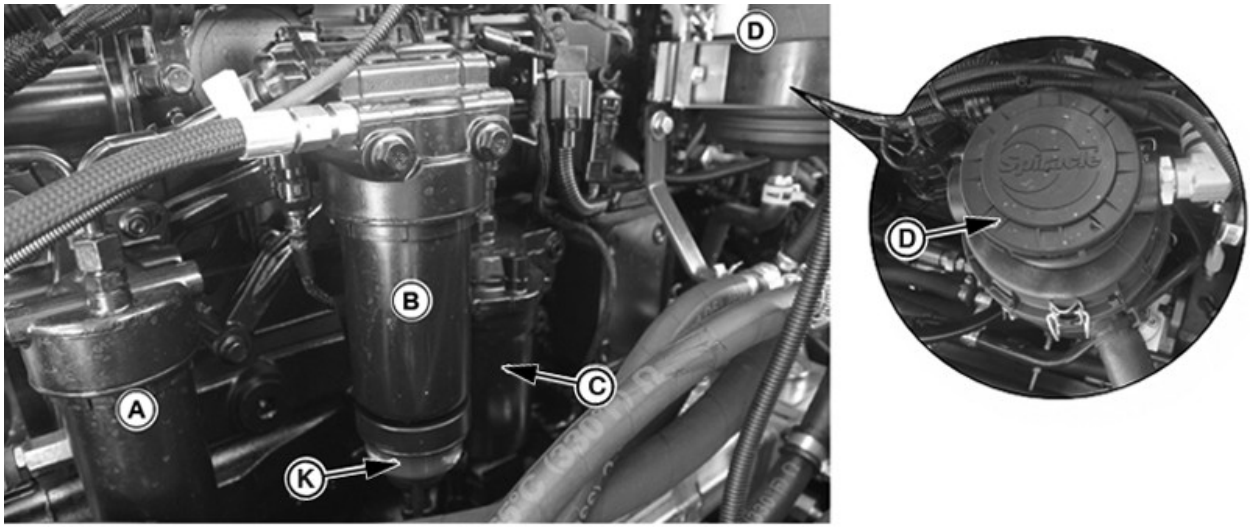
IMPORTANT: This graphic shows stage V engine, that is a John Deere engine in its most complete configuration. Stage II, FT4 and 3A versions could have fewer filters.

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 secondary diesel fuel filter (A), main diesel fuel filter (B), engine oil filter (C), and OCV (open crankcase ventilation) filter (D).

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



APY64225—UN—28JUL21

A—Secondary Diesel Fuel Filter
B—Main Diesel Fuel Filter
C—Engine Oil Filter
D—OCV (open crankcase ventilation) Filter
K—Decant Filter

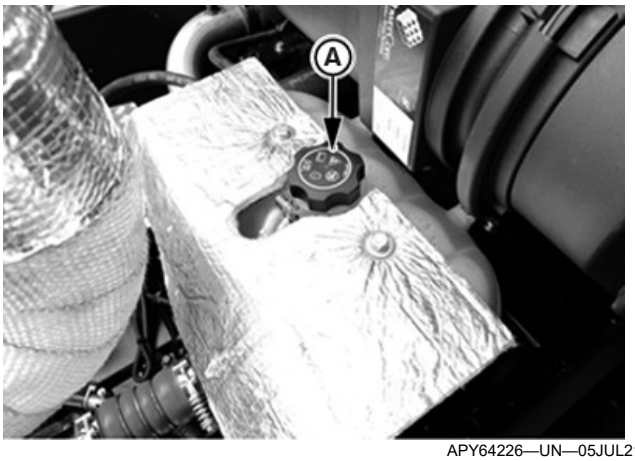
1. Stop the engine.
2. Lift cover of the engine hood.
3. Drain water and sediments into a suitable container by opening the drain valve of decanter filter (K) for 3/4 of a turn.
4. Retighten the plug once water and sediments have been drained out.
5. Turn main switch key to the right of the first switch 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.

KWPZAG2,00009DA-19-26AUG21

Check Engine Coolant Level

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.



APY64226—UN—05JUL21

APY64227—UN—05JUL21

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.

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.

KWPZAG2,00009DB-19-26AUG21

Check Hydrostatic and Hydraulic Oil Level

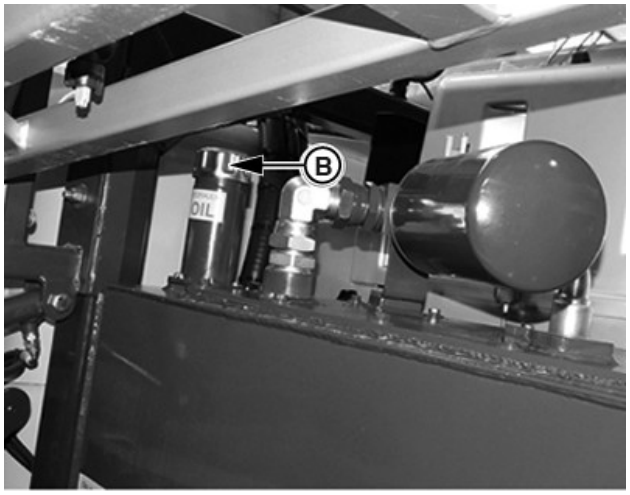
CAUTION: Place booms in boom rests and retract all hydraulic cylinders (including tread adjust cylinders) when checking oil level.

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

Specification

Hydrostatic and Hydraulic Oil Reservoir—Capacity. . . . . 170 L (45 gal)

APY64228—UN—05JUL21



APY64229—UN—06JUL21

A—Level Indicator
B—Cap

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

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

KWPZAG2,00009DC-19-26AUG21

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. . . . . 190 L 50 gal

APY64230—UN—05JUL21

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.

KWPZAG2,00009DD-19-26AUG21

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.

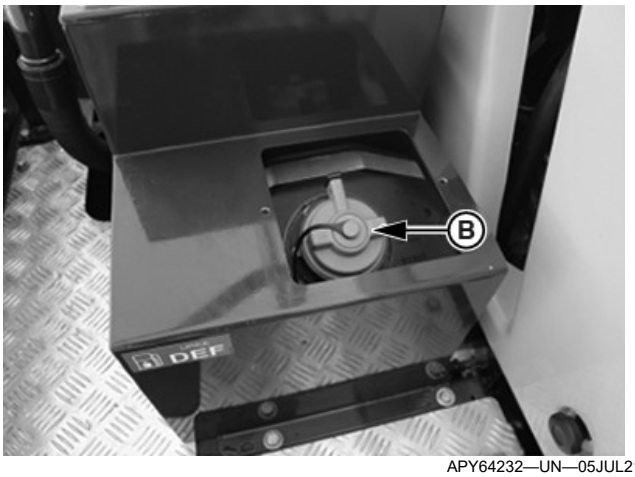
IMPORTANT: Spilled DEF, if left to dry or if wiped away with a cloth, leaves white residue. Aside from cosmetic issues, an improperly cleaned DEF spill could interfere with diagnosis of selective catalytic reduction (SCR) system leakage problems.

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.

APY64231—UN—05JUL21



APY64232—UN—05JUL21

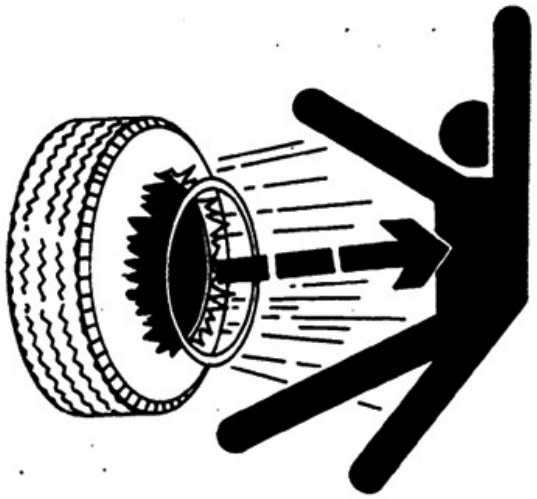
A—Tank Cover
B—Tank Cap

   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.

KWPZAG2,00009DE-19-26AUG21

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.

KWPZAG2,00009DF-19-26AUG21

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

KWPZAG2,00009E0-19-26AUG21

Instructions

IMPORTANT: This section is only for machines equipped with Mspray system.

If your machine is equipped with standard spray system, see Standard Spray System section in the manual.

VK06011,00008CD-19-16FEB22

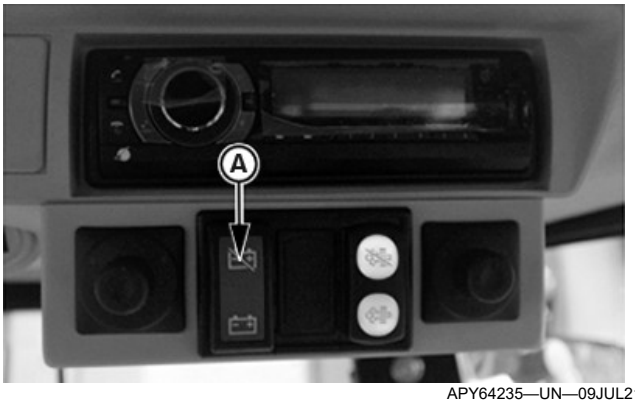
Prevent Machine Runaway

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

Battery Switch



APY64235—UN—09JUL21

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.

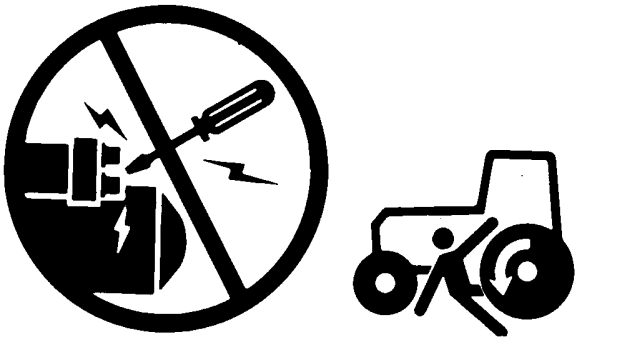
KWPZAG2,0000AC0-19-06SEP21

Start Engine

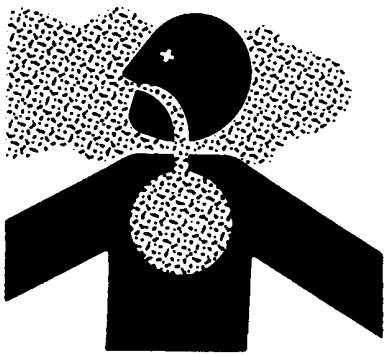
CAUTION: Prevent asphyxiation. Engine exhaust fumes can cause sickness or death. While operating the engine in a building, make sure that there is an adequate ventilation. Use an exhaust pipe extension to remove the exhaust fumes or open doors and windows to bring enough outside air into the area.

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. Repairs should be made immediately by an authorized John Deere Dealer.**



TS177—UN—11JAN89



TS220—UN—15APR13

APY64238—UN—09JUL21

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.

APY64239—UN—09JUL21

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.

KWPZAG2,0000AC1-19-06SEP21

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.

APY64240—UN—09JUL21

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.

KWPZAG2,0000AC2-19-06SEP21

Warming the Engine

APY64241—UN—09JUL21

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.

KWPZAG2,0000AC3-19-06SEP21

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

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).

APY66383—UN—22FEB22

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 bars 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 bars are mounted the air sleeve, tie the tip of the bars 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).

TG531189—UN—18FEB22

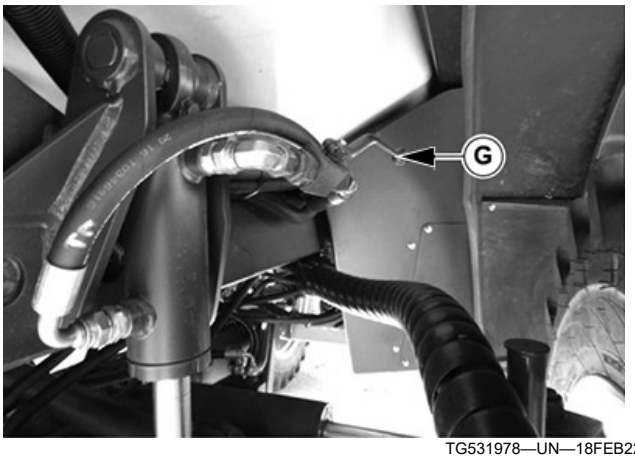
E—Rear Axle Lock Pin Signal

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—Cab Access Ladder Lock Button
I—Cab Access Ladder Button

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

TG531980—UN—18FEB22

L—Joystick Function Disabled

13. When moving the joystick Mazzotti forward, the Icon (L) must be off.
    - The L icon is valid only for Standard Spray version.
    - The combination between Mazzotti and Standard Spray system will automatically lock the boom functions.
    - The combination of Mazzotti joystick and MSpray System or MSpray Joystick and MSpray System requires the boom lock function to be active through the Universal Gen 4 display.

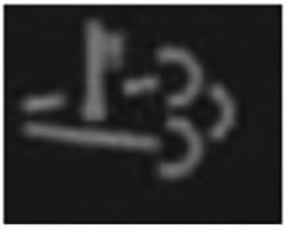
TG532005—UN—21APR22

1—1—Road Drive On-Off

    - The road drive lock for the booms on the John Deere 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.

VK06011,00008F5-19-22APR22

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

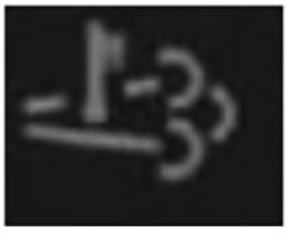
IMPORTANT: The operator is informed by the operator warning system when the emission control system does not function correctly and/or an engine malfunction is detected by the engine control unit. Ignoring the operator warning signals leads to an emission-related derate, which disables non-mobile operation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

KWPZAG2,0000AC4-19-06SEP21

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.

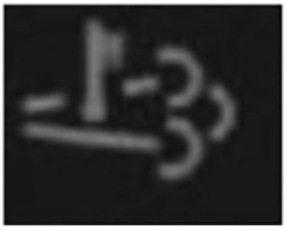
APY64487—UN—12AUG21

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

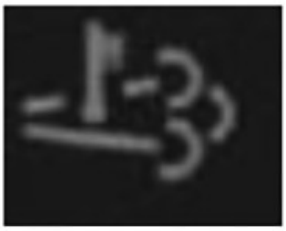


APY64483—UN—12AUG21

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.
- Contact an authorized John Deere service provider.

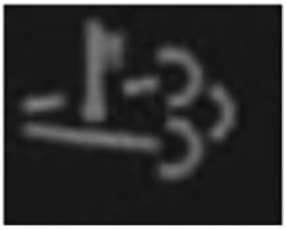


APY64483—UN—12AUG21

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.
- Contact an authorized John Deere 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.
- Contact an authorized John Deere service provider.

KWPZAG2,0000AC5-19-06SEP21

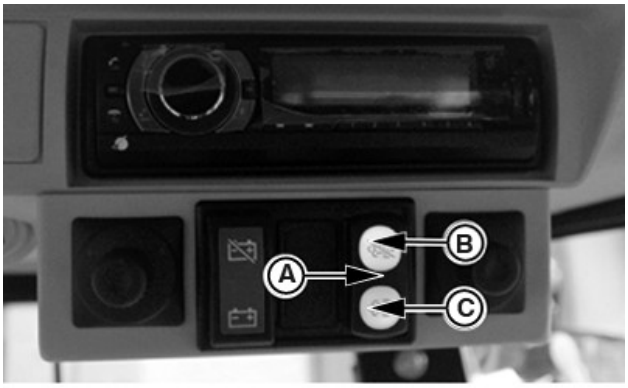
Exhaust Filter System (Final Tier 4 and Stage V Engines)

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 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.



APY64242—UN—09JUL21

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 ≥ 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.

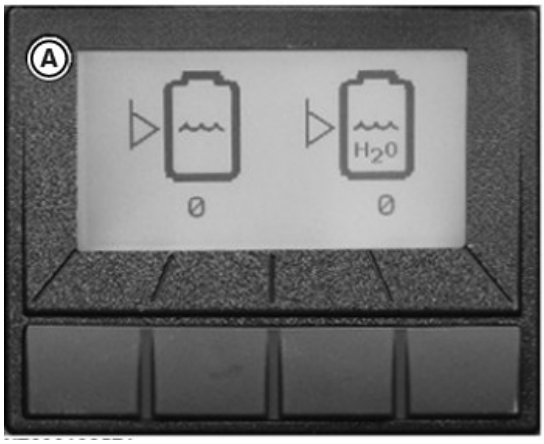
KWPZAG2,0000AC6-19-06SEP21

MSpray Solution Command System Panel

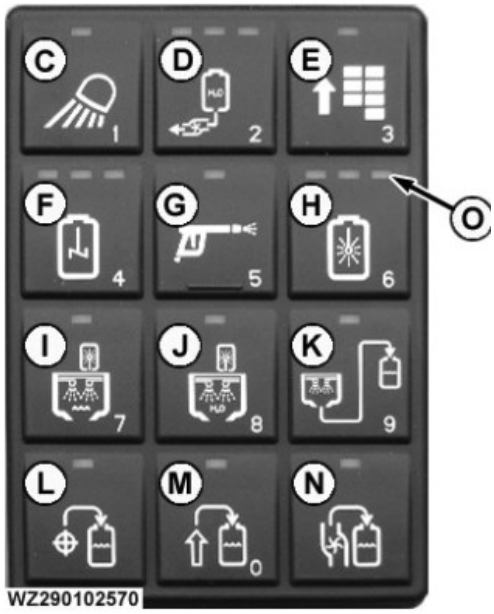
CAUTION: Wash brush button (G) requires the system rinse program to be run from the rinse menu first before use. The wash brush is connected to the solution line, which has to be flushed.

*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 Gen4 display showing solution command system panel is not in the OFF position.*

APY64243—UN—09JUL21



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—Inductor Solution Water Button
J—Inductor Rinse Water Button
K—Injector Button
L—Auto Fill Button
M—External Pump Filling Button
N—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)
  - Injector 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)—If not selected the solution water of the solution tank is used.
- Menu button (E)—Shows two filling options:
  - Solution system water tank
  - 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.
- System rinse button (H)—System rinse performs one rinse cycle.
- Select the inductor solution water button (I).
- Select the inductor rinse water button (J).
- Injector button (K)—Switch the injector on-off.
- Auto fill button (L)—Refer to the Operator's Manual.
- Select external pump filling button (M).
- Select filling pump button (N).
- LED indicators (O) at the top of the buttons.

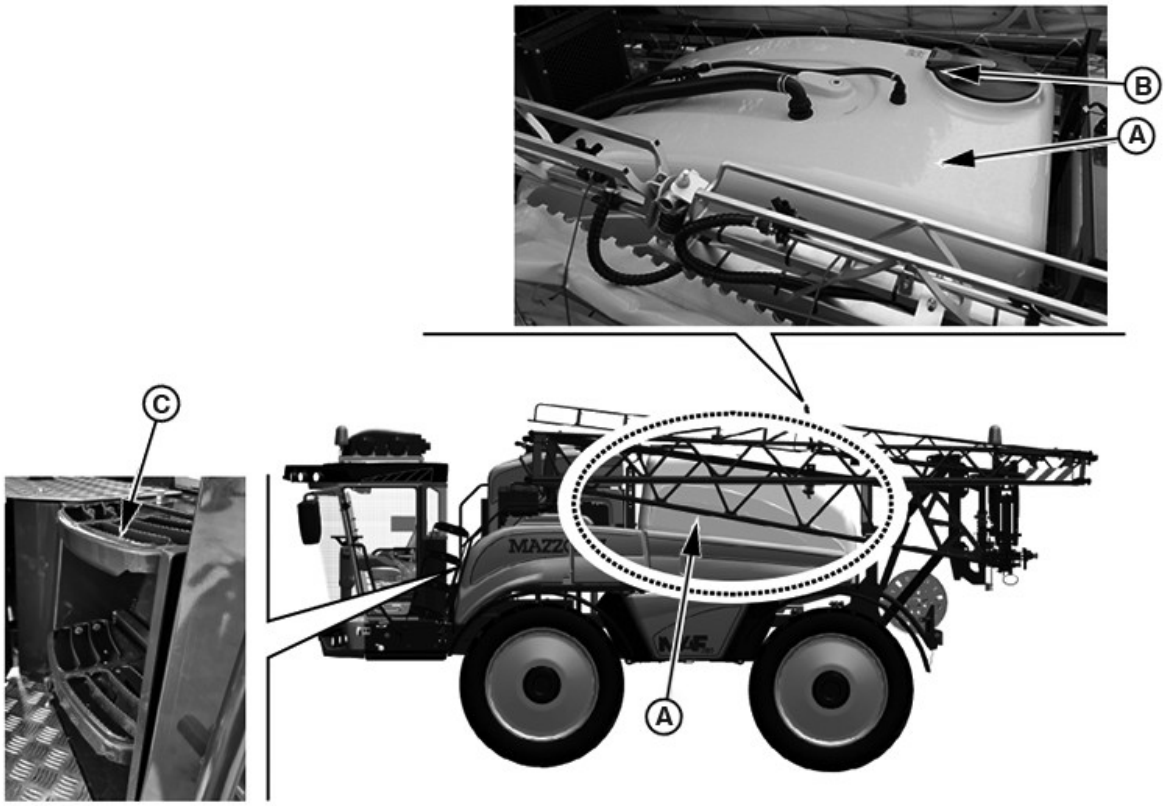
APY64246—UN—09JUL21

A—LED Indicator
B—LED Indicator

- LED indicators (A and B) at the top of the buttons, display the status of the function controlled by that button. The LED ON indicates that the function is ON the LED OFF indicates that the function is OFF.

KWPZAG2,0000AC7-19-06SEP21

Solution Tank



APY64247—UN—09JUL21

A—Solution Tank
B—Cover
C—Ladder

The machine is fitted with a polyethylene solution tank (A). The nominal tank volume of 3100 liters for the **MAF3180**, 3500 L for the **MAF3580**, and 4000 L for the **MAF4080**. The maximum tank volume is at least 5% larger than the nominal volume of 3100 L, 3500 L, and 4000 L tanks. This extra volume is required for possible foaming. 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 in supporting brackets at the sides and front. The filling opening is accessible via the ladder (C) placed on the left side of the machine.

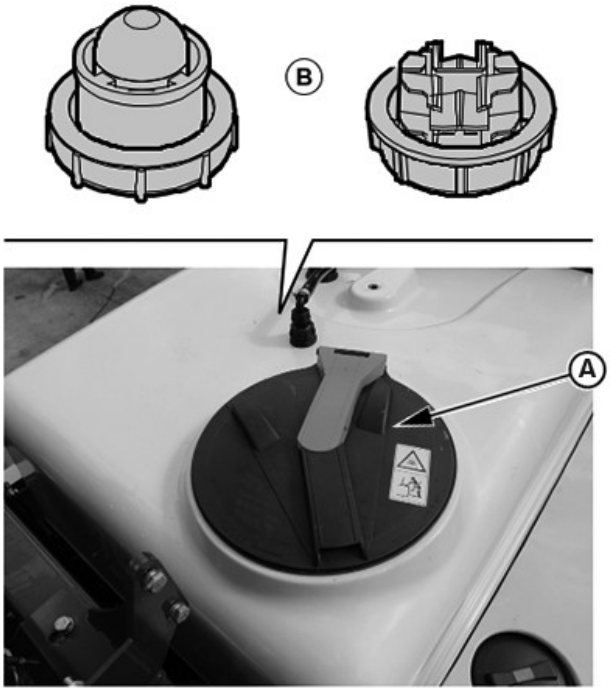
IMPORTANT: Always raise and lock the ladder for safety and to avoid damage when driving with the sprayer.

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

KWPZAG2,0000AC8-19-06SEP21

Filling and Opening of Tank

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



APY64248—UN—09JUL21

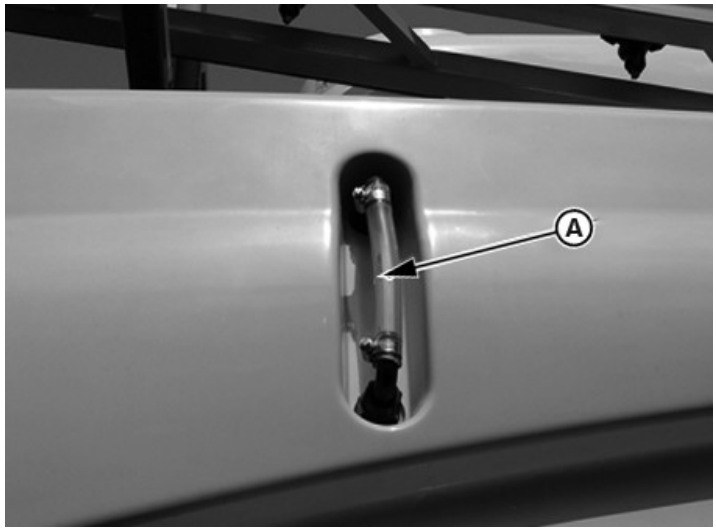
A—Hinged Tank Lid
B—Safety Valve

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 lid (A), 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 (B) 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.

KWPZAG2,0000AC9-19-06SEP21

Tank Level Indicator



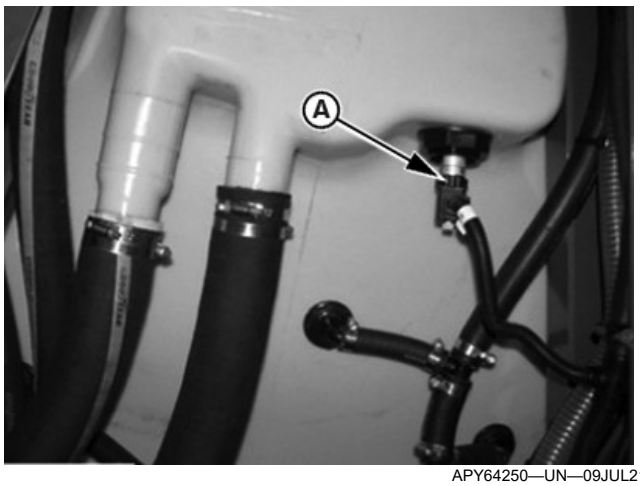
APY64249—UN—09JUL21

A—Liquid Level Indicator

The liquid level indicator in the rinse tank is measured by floats fitted on the left side of the machine. The floats are attached with a cable to a white ball located inside the level indicator tubes.

VK06011,00008CB-19-16FEB22

Tank Level Indicator



APY64250—UN—09JUL21

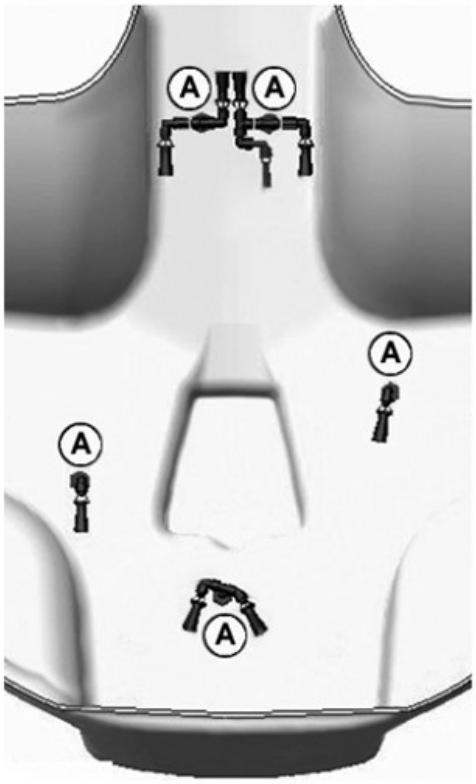
A—Tank Pressure Sensor

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 Gen4 display.

VK06011,00008CC-19-16FEB22

Agitation



APY64251—UN—09JUL21

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 PowrSpray 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.

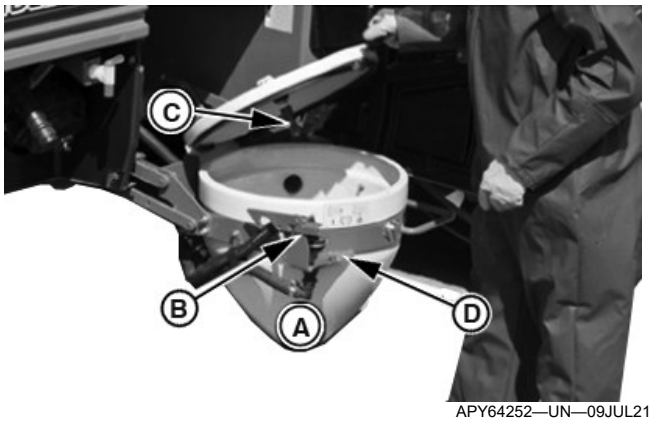
NOTE: Power agitation button in job settings—Agitation tab sets both agitation functions to 100%.

KWPZAG2,0000AF5-19-06SEP21

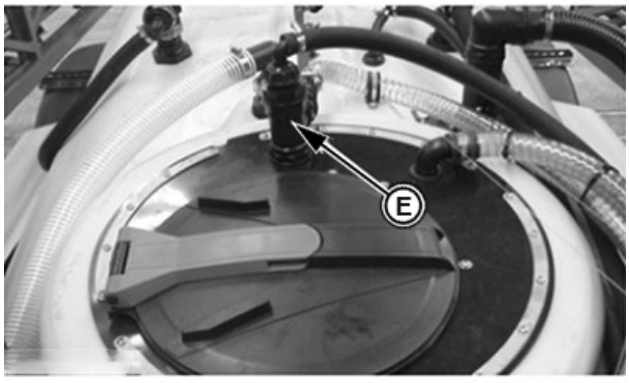
Chemical Inductor

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

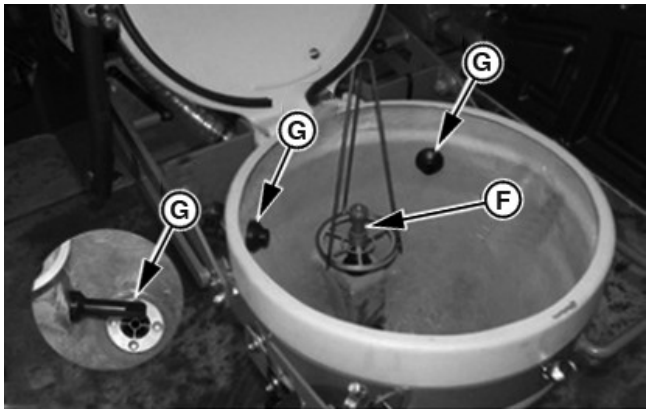
IMPORTANT: Clean and rinse the chemical inductor after every use.



APY64252—UN—09JUL21



APY64253—UN—09JUL21



APY64254—UN—09JUL21

APY64255—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.

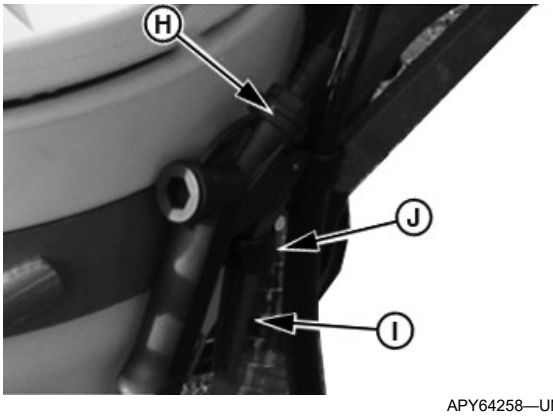
IMPORTANT: Operate only with the closed inductor lid and close all manual shutoff valves for flushing nozzles when finished.

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.

APY64255—UN—09JUL21

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)



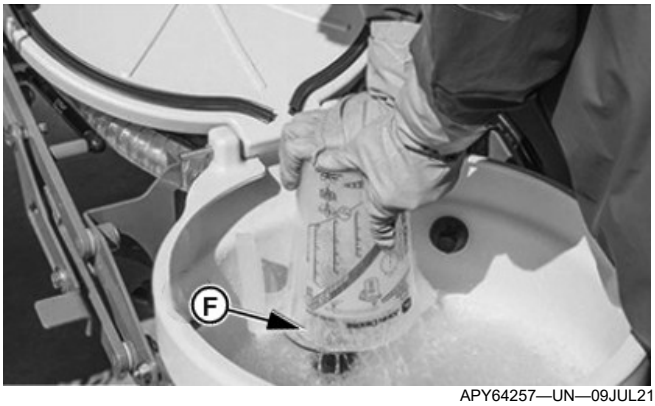
APY64258—UN—09JUL21

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).

KWPZAG2,0000B1E-19-06SEP21

Rinsing Empty Containers



APY64257—UN—09JUL21

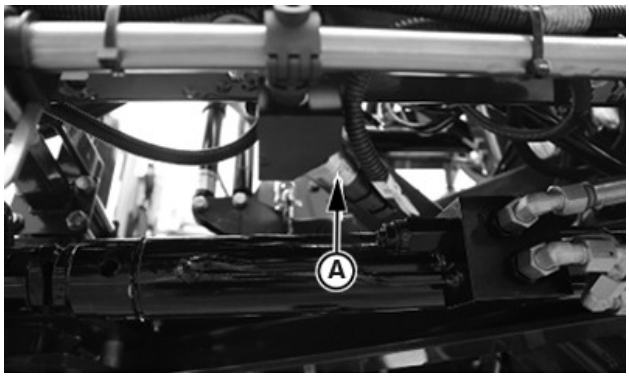
F—Inductor Container Rinsing Head
K—Inductor Solution Water Button
L—Inductor Rinse Water Button
M—Injector Button

NOTE: Rinse the container with clean water only.

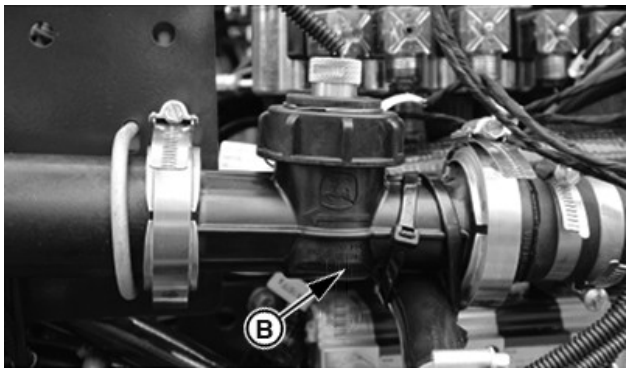
1. To clean the container, select the inductor rinse water button (L) on the SCS panel.
2. Place the opening face down over the inductor container rinsing head (F) and push down until clean water flows.
3. Place the tenter over the rinsing head to clean the bag.
4. Place the bag over the optional tenter 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.

KWPZAG2,0000B1F-19-06SEP21

Pressure and Flow Measurement



APY64259—UN—09JUL21



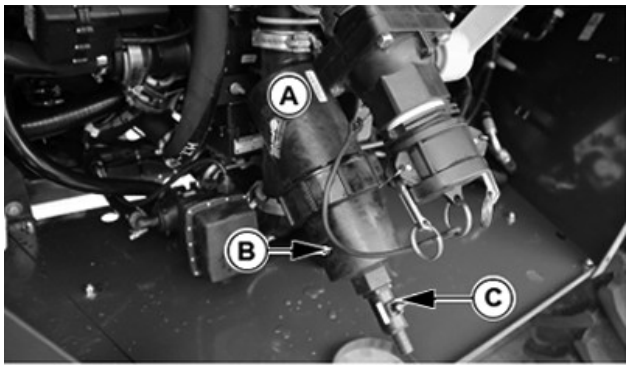
APY64260—UN—09JUL21

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.

KWPZAG2,0000B20-19-06SEP21

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.

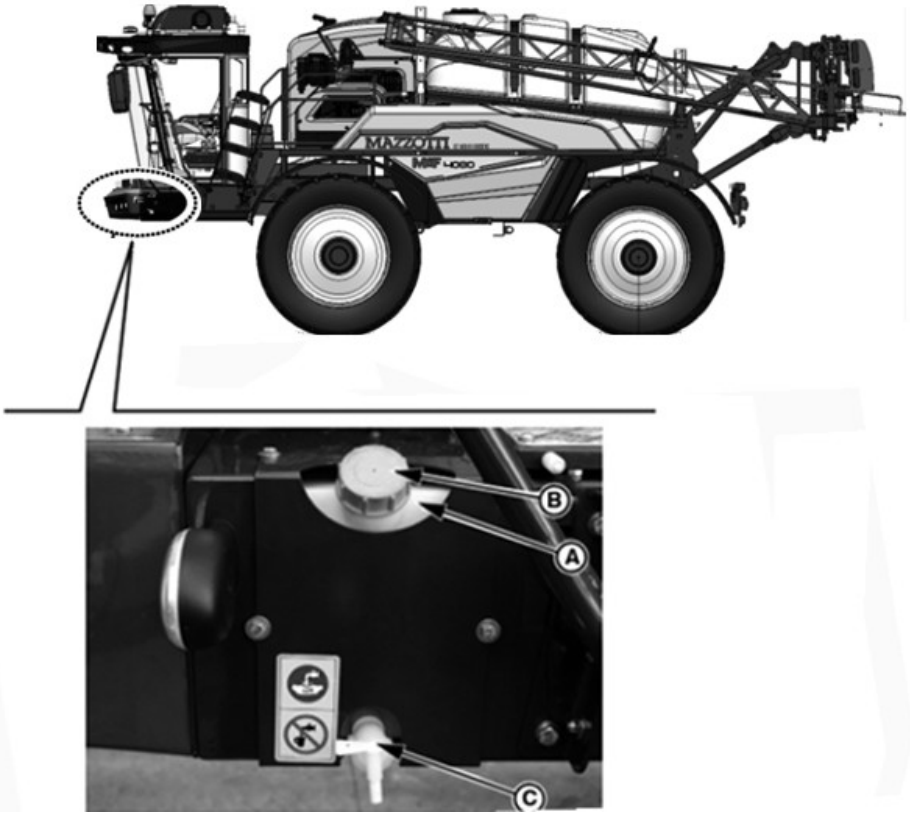
NOTE: Refer to the recommendations on the chemical product label used for cleaning to ensure operator safety.

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.



TG546289—UN—03OCT22

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

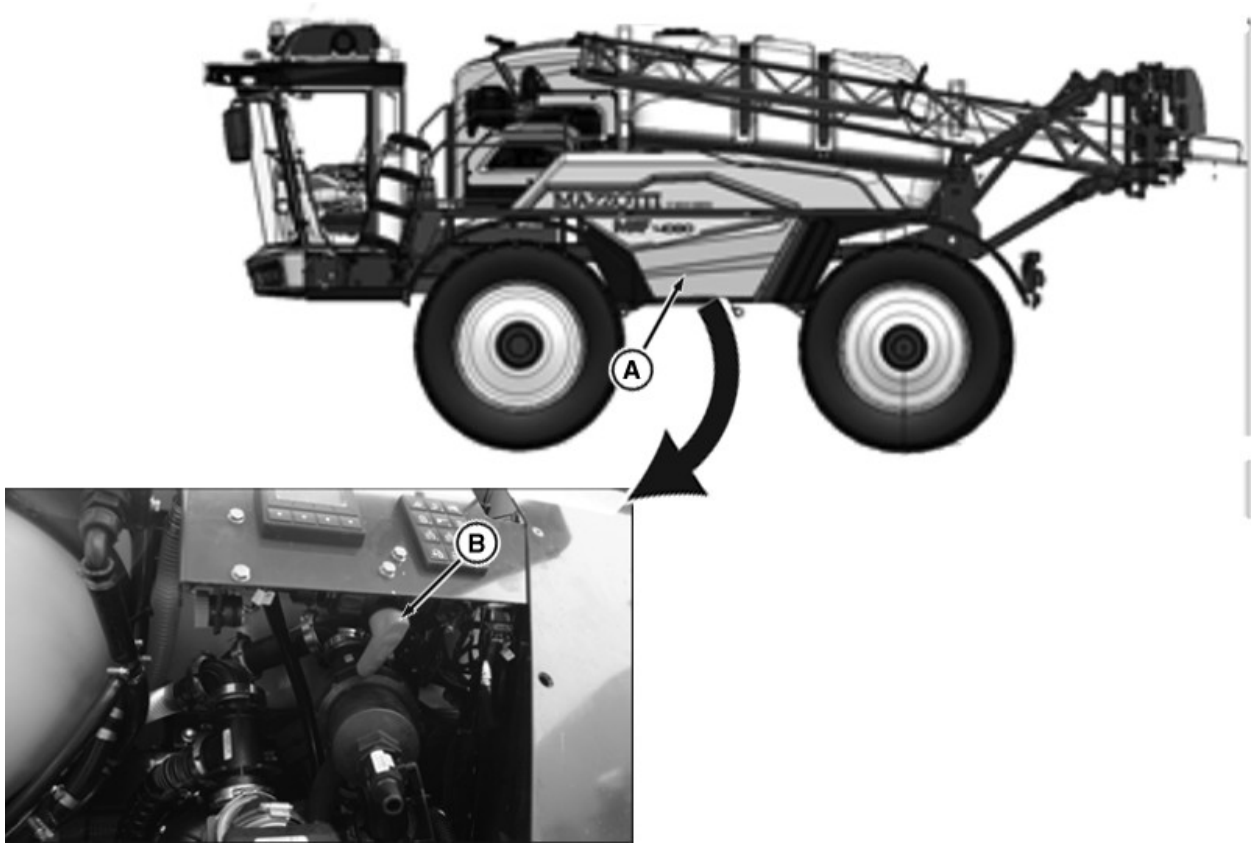
There is a separate 15-liters hand washing tank (A) with drain tap (C) on the left-hand side of the machine for personal hygiene and hand washing.

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

vk06011,1664867602452-19-04OCT22

Rinse Water Tank

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



TG543992—UN—12AUG22

A—Rinse Water Tank (260 or 520 liters)

B—Rinse Water Tank Valve

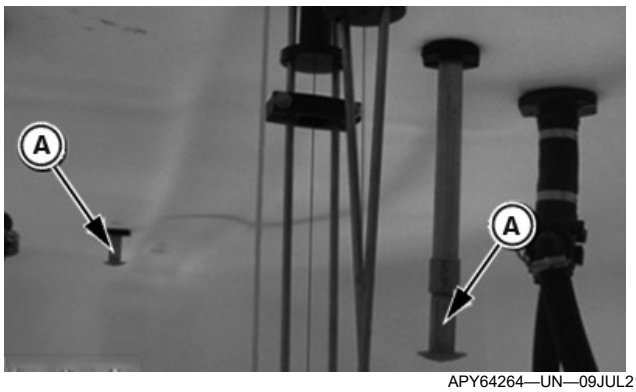
Rinse the water tank (260 or 520 liters) (A) is located behind the upper panels. It provides supply of clean rinse water for infield cleaning. The rinse water tank valve (B) (located under the Mspray panel) must be opened during centrifugal pump operation so that the rinse tank will be filled.

If the rinse water tank valve (B) is in longitudanal position then it is open and if the rinse water tank valve (B) 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.

vk06011,1660729640568-19-04OCT22

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).

KWPZAG2,0000B24-19-06SEP21

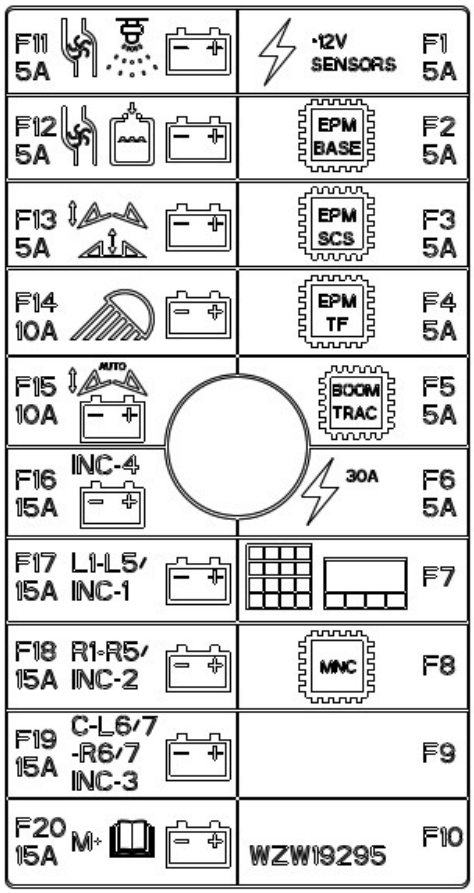
Electrical Operation Group

The electrical operation group comprises a pressure regulator, main shutoff valve, boom section or nozzle body valves, multi-function lever with Gen4 display, and also several electric valves as part of the solution

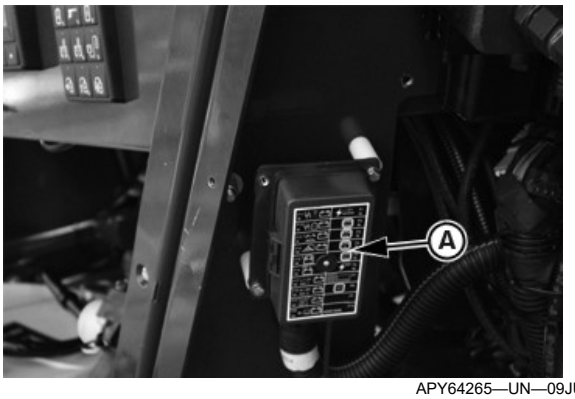
command system. The solution spray pump is controlled by the hydraulic system to ensure the required spray flow and agitation.

KWPZAG2,0000B25-19-06SEP21

MSpray System Fuses



APY64481—UN—20JUL21



APY64265—UN—09JUL21

A—Fuse Box MSPray System

Fuses

The fuse box MSPray system (A) is at the central compartment, on the external side.

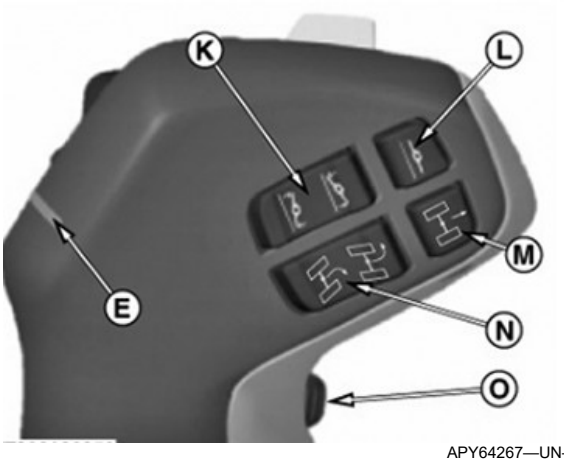
Fuse Layout		
Fuse	**Rating**	**Function**
F1	5 A	Power supply (30 A power supply) for sensors having a supply voltage of 12 V
F2	5 A	Power supply (30 A power supply) for EPM base
F3	5 A	Power supply (30 A power supply) for EPM for solution command system (SCS)
F4	5 A	Power supply (30 A power supply) for EPM for TwinFluid™ system (only for 9xxiTF)
F5	5 A	Power supply (30 A power supply) for TerrainCommand™/TerrainControl™ (if equipped)
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) PowrSpray
F12	5 A	Power for the fill pump (ground is controlled by the control unit) PowrSpray
F13	5 A	Valve power for variable geometry and boom height adjustment hydraulics (ground is switched by control unit)
F14	10 A	Power for work lights at the operator’s station
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, and9 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)		

TwinFluid is a trademark of Deere & Company

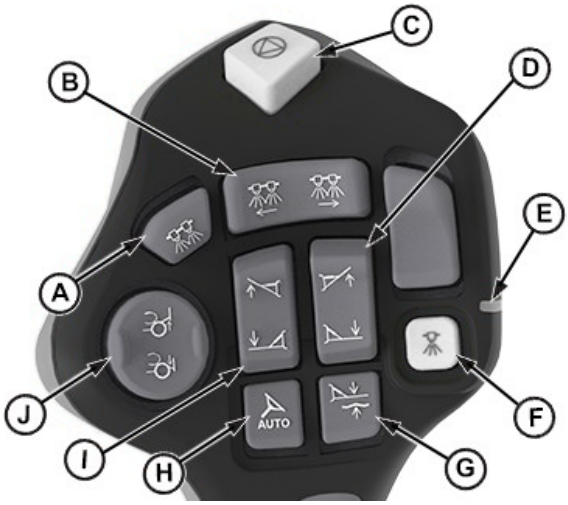
NOTE: The allocation of the fuses is dependent on the machine configuration and options.

KWPZAG2,0000B26-19-06SEP21



APY64267—UN—09JUL21

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

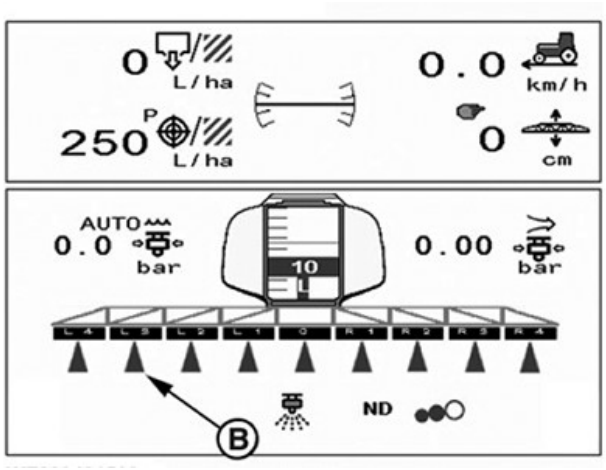
K	Boom Roll Left/Right	
L	Boom Roll Centering	
M	Not Used	
N	Not Used	
O	Select Level-2	Select Level-1

AutoTrac is a trademark of Deere & Company
[a]*The level-2 functions are described in this column. No description, then button function is not available.*

byhneba,1671453829605-19-19DEC22

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.

byhneba,1671454010405-19-19DEC22

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

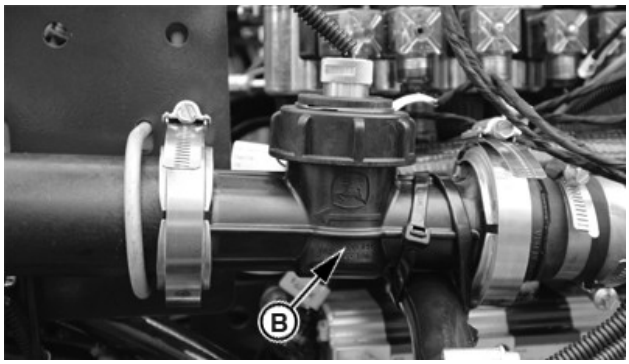
The multi-function control (MFC) in the cab controls the

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

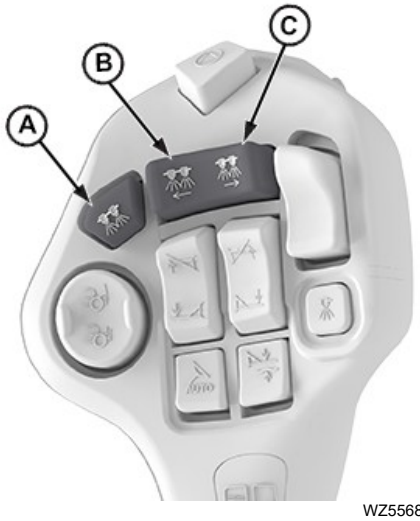
A—Digital Pressure Sensor
B—Flow Sensor

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.

byhneba,1671454222815-19-19DEC22

Operating IBS (Index Boom Sections)



WZ556893—UN—09DEC22

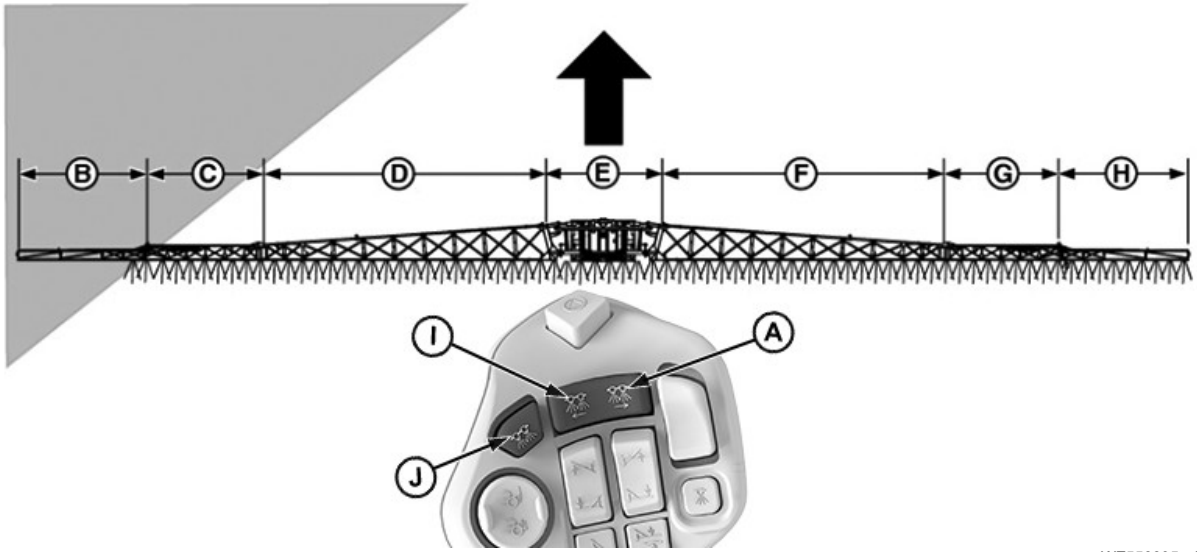
A—Button IBS All Sections On
B—Button IBS Left-Hand
C—Button IBS Right-Hand

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.

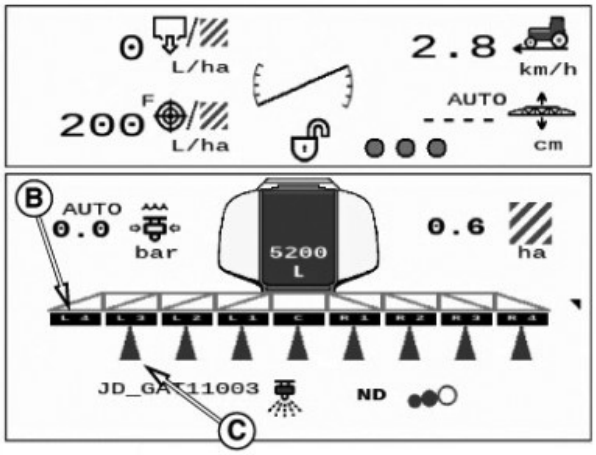
This machine is equipped with indexed boom section switching. This function enables the operator to shut off boom sections in sequence without removing hands from the MFC. This function is useful when working with point rows and close to water.

This function is operated by three buttons.



WZ556895—UN—09DEC22

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



APY64274—UN—09JUL21

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.

byhneba,1671454635221-19-19DEC22

Pressure Circulation System

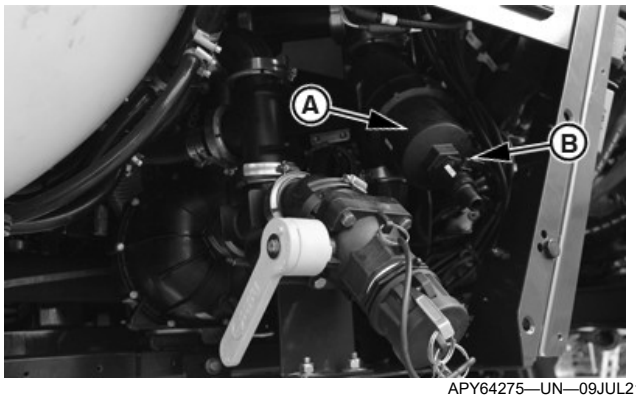
The pressure circulation system is automatically available when the solution pump is running. While spraying, the pressure circulation is not available as both ends of the spray sections are being fed at the same time (the circulation valve allows spray solution to enter from the circulation side of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

KWPZAG2,0000B2C-19-06SEP21

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.

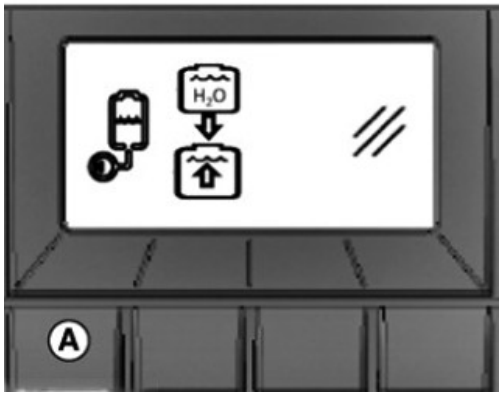
To pump contents of the solution tank for external storage, follow the procedure:

APY64276—UN—09JUL21

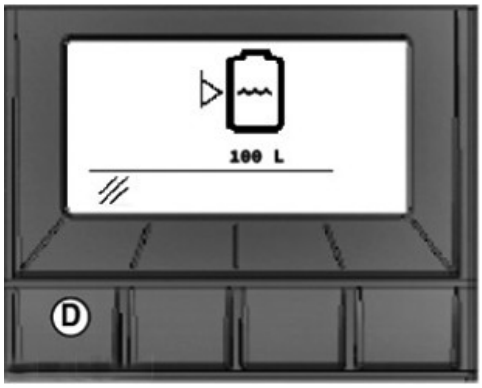
B—Shutoff Valve
C—Hose Connection Cap

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.

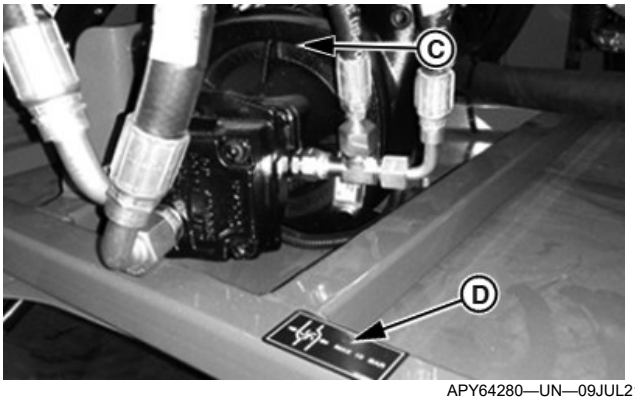
6. Push the tank pump off button (A) on the keypad.

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

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 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.

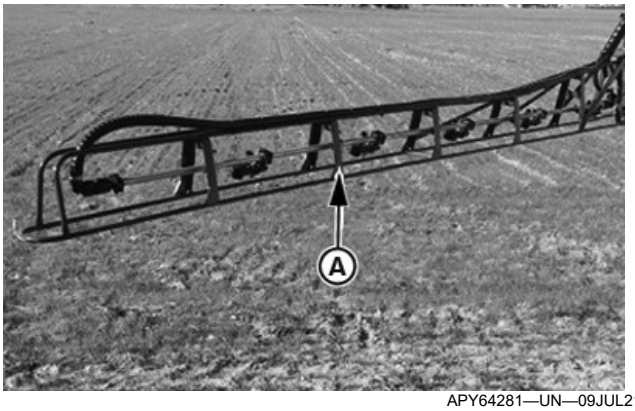
Proper winterization of the solution system can increase solution the pump life.

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

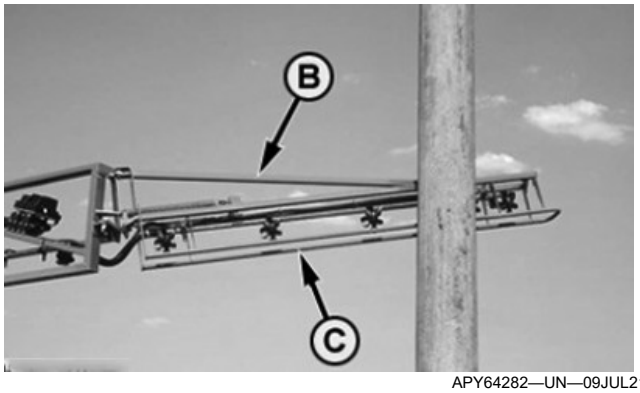
KWPZAG2,0000B30-19-06SEP21

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



APY64281—UN—09JUL21



APY64282—UN—09JUL21

A—Spray Boom
B—Outer Spray Boom Section
C—Protective Bracket for Nozzles

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

- Double-folding booms: 18—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.

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

1. MSpray multi-function lever: Can be configured with MK or MZ booms (double-folding or triple-folding).
   a. Outer arms: Independent
   b. Inner arms: Simultaneous
2. Mazzotti control lever: Can be configured with MK booms and MZ booms.
   a. Standard
      (i) Can be combined with the air sleeve.
   b. Independent
      (ii) Can be combined with the air sleeve.

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. Set the engine at 1900 rpm.
4. Lift up the parallelogram to the maximum height.
5. Make sure that the transport function is locked.
6. 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.
7. Adjust the desired spraying boom height.
8. Utilize the variable geometry to align the booms with the ground level.
9. Lock the transport function before field spraying.

Closing the Booms

Basic steps to close the booms are::

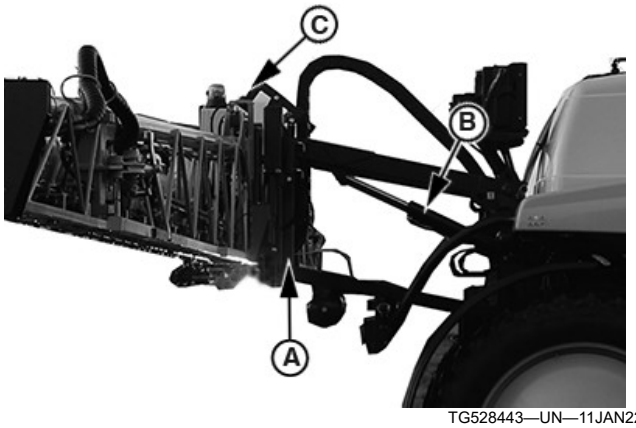
1. Lift up the parallelogram to the highest position.
2. Lift up the variable geometry on the left side, then on the right side.
3. Activate the pendulum transport lock function.
4. Close left and right booms, starting from outer arms.
5. Move down the parallelogram, assuring the booms are locked on the proper support.

NOTE: Pay attention to the way in which buttons are arranged on the Mazzotti Joystick according to the boom type (check section Cab, Controls and Instruments).

NOTE: Observation: JD display can only be used to control the boom movement if the machine is equipped with John Deere multi-function lever and the MSpray system.

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.

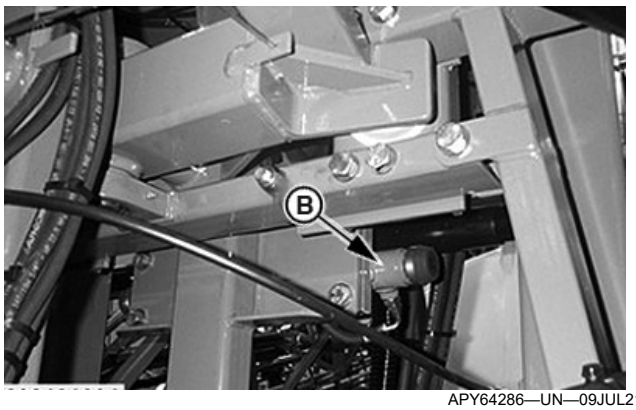
Folding and Unfolding with Triple-Folding Boom

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



APY64286—UN—09JUL21

APY64287—UN—09JUL21

APY64288—UN—09JUL21

A—Connecting Rod
B—Pendulum Lock Cylinder
C—Pendulum Lock Cylinder
D—Boom Locking Device (for outer boom segments)

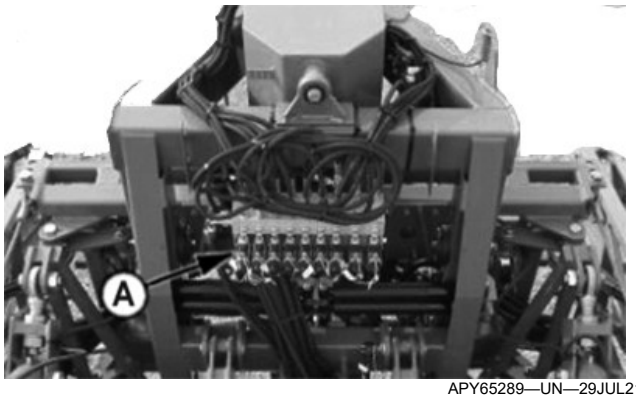
The spray boom is folded and unfolded hydraulically by means of three double-acting cylinders for each spray boom arm. The first and second spray boom arms are folded and unfolded simultaneously.

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) (D) 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.



APY65289—UN—29JUL21

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.

Unfold Booms Completely

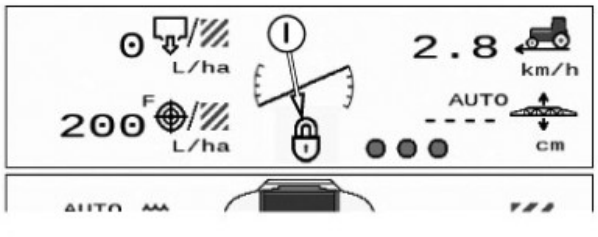
CAUTION: Never unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.

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.

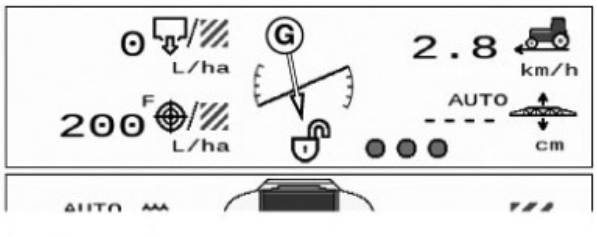
IMPORTANT: Only the outer sections of this boom should be unfolded.

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



APY64290—UN—09JUL21



APY64291—UN—09JUL21

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.

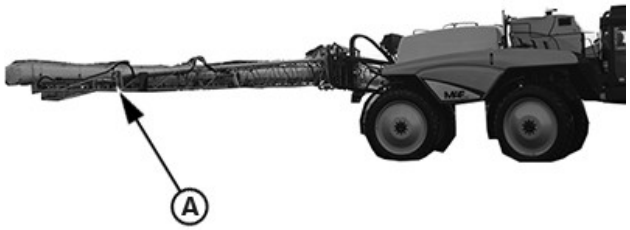
   b. Push the right part of the pendulum lock (level-2) button until the pendulum unlocks. The pendulum - unlocked (G) display shows that the pendulum is unlocked.

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.



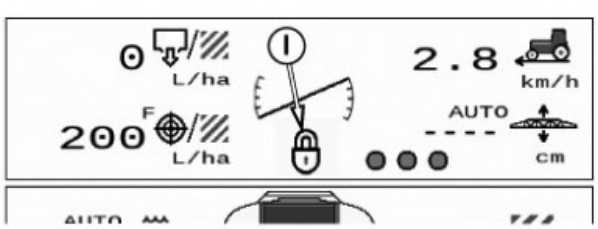
TG529773—UN—11JAN22

A—Spray Boom (with the outer booms folded in)

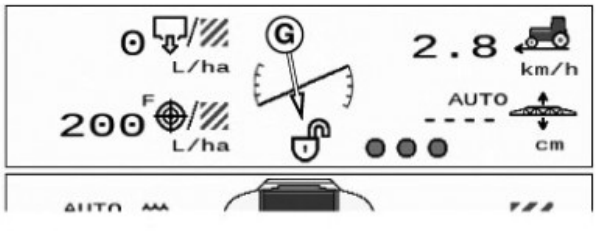
The sprayer is fitted with independent folding and unfolding of the outer boom segments, which enables spraying with a reduced working width spray boom (with outer booms folded in) (A).

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

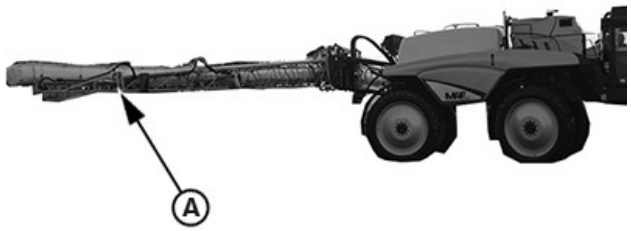
A—Boom Up Button
B—Level-1/Level-2 Button
C—Boom Down Button
D—VG Left-Hand Boom Button

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.

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.



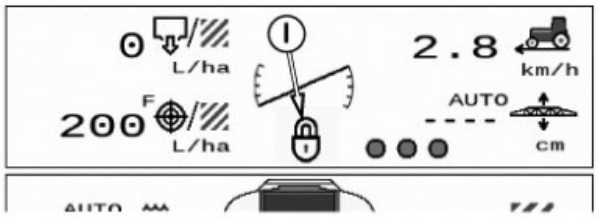
TG529773—UN—11JAN22
A—Spray Boom (with independent outer boom folding)

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.

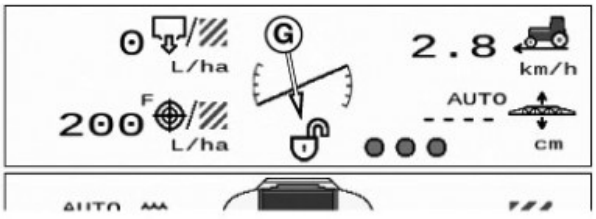
The sprayer with electrohydraulic control is fitted with independent folding and unfolding of the outer boom segments left/right which enables spraying along obstacles in the field.

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

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 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

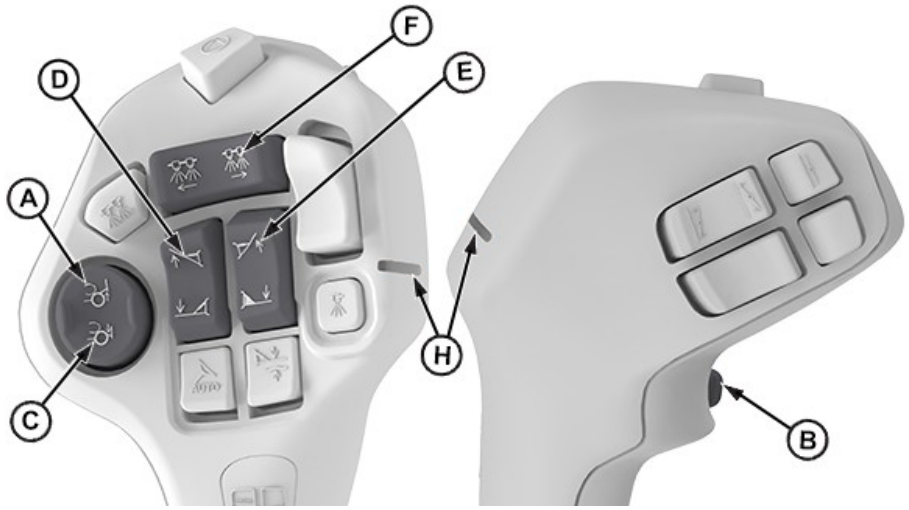
CAUTION: Never fold/unfold the spray boom during driving, near obstacles, or in the area of electrical power lines.

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.

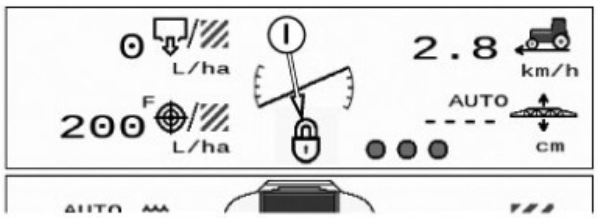
IMPORTANT: Before folding in booms, the boom roll correction should have no bias set; the boom should be level to the vehicle. See Boom Roll Correction in this section.

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



WZ556894—UN—09DEC22

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

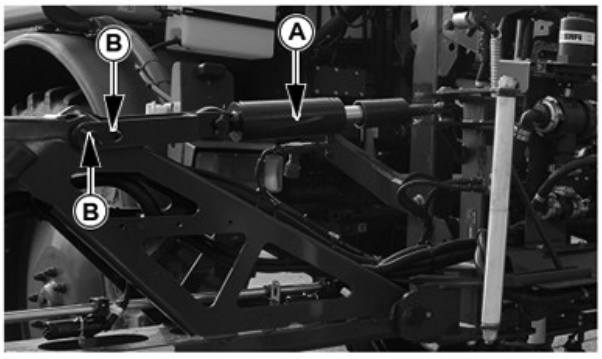


APY64290—UN—09JUL21

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

APY64301—UN—09JUL21

APY64302—UN—09JUL21

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.

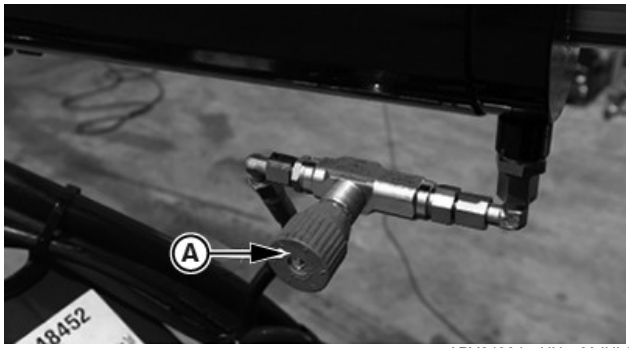
If the bottom of the cylinders is connected to the first slots, the boom arms can be raised (up to 12.5°) and lowered (up to 6.5°). In the middle stroke position of the cylinders, the spray boom is level when unfolded.

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.



APY64304—UN—09JUL21

A—Adjustable Restrictor

The variable geometry is equipped with adjustable restrictors (A). The speed of variable geometry can be adjusted with these restrictors to match spraying conditions. When the restrictors are turned clockwise, the oil flow is increased. When restrictors are turned counterclockwise, oil flow is decreased. Both restrictors must be equally adjusted.

byhneba,1671455147431-19-19DEC22

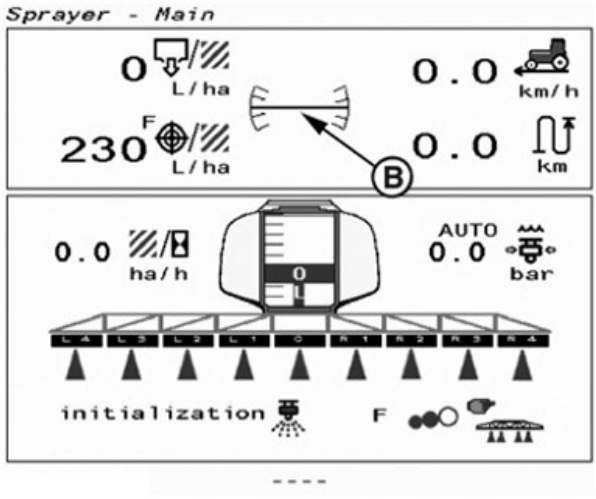
Boom Roll Correction

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

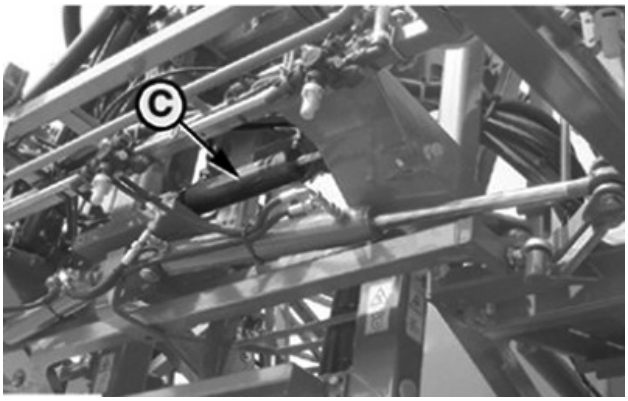
IMPORTANT: Before folding in the boom, ensure that the boom is level and that there is no boom roll.

APY64305—UN—09JUL21

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



APY64306—UN—09JUL21



APY64307—UN—09JUL21

APY64308—UN—09JUL21

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.

KWPZAG2,0000B32-19-06SEP21

Spray Line and Nozzle Holders

APY64309—UN—09JUL21

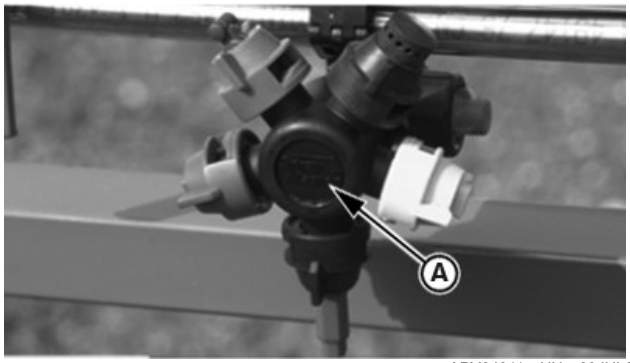
APY64310—UN—09JUL21

A—End Stop
B—Blind Cap

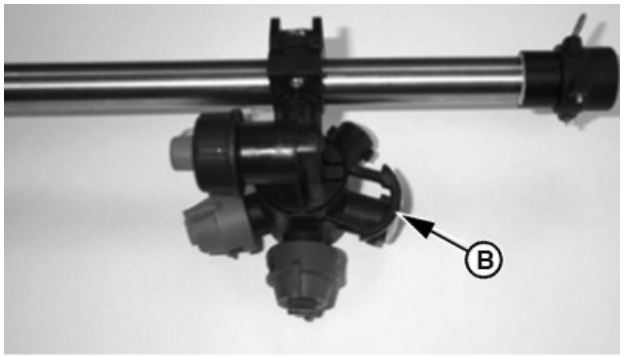
Spray booms are fitted with a stainless steel spray line with an internal diameter of 18 mm. The ends of the spray lines have removable end stops (A), which allow for easy cleaning of the lines. The spray boom is always fitted with two connections (left and right), prepared to retrofit edge nozzles.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

Nozzle Holders

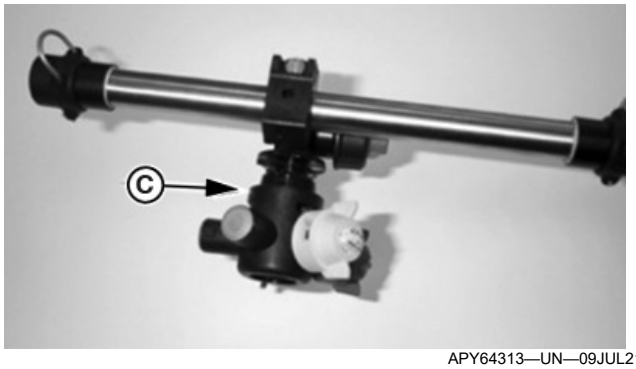
The nozzle holders are spaced at a distance of 50 cm. The nozzle holders have bayonet caps and are either single nozzle holders or revolving nozzle holders.



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.

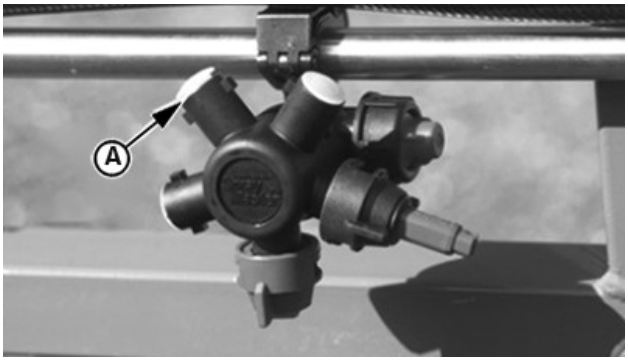
The caps fitted to the revolving nozzle holder have a bayonet connection. The correct angle of the nozzle in relation to the spray line is preset in the bayonet cap, so that the nozzle automatically points in the right direction in relation to the spray line when the bayonet cap is attached to the nozzle 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 further information, contact an authorized John Deere dealer.

KWPZAG2,0000B33-19-06SEP21

Replacing Nozzles

IMPORTANT: Nozzles should be replaced when flow rate has increased by 10% from the desired rate at a given pressure.

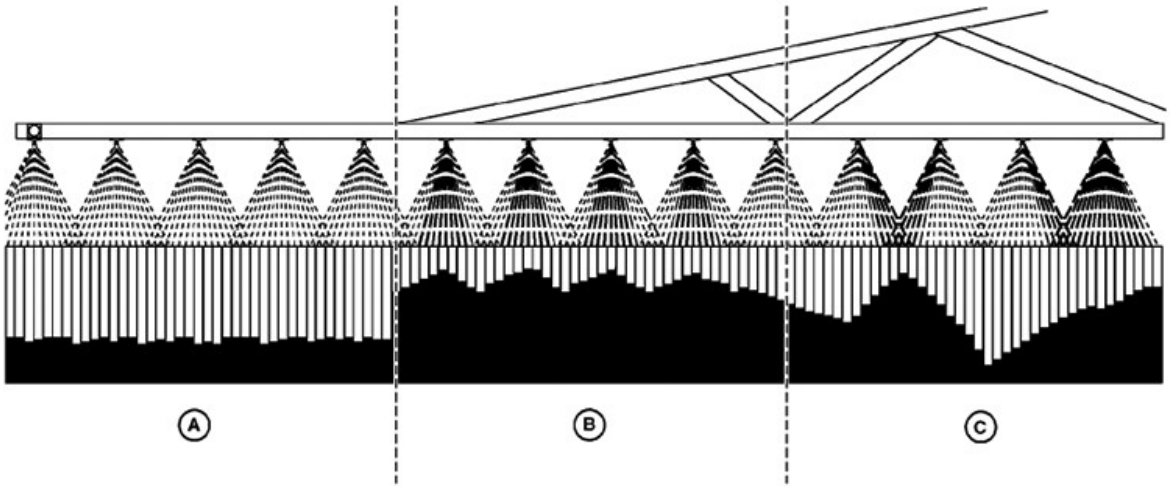
Nozzles are the most important part of the sprayer. No matter how well-engineered the rest of the machine is, if the nozzles are bad it is impossible to obtain good spray coverage. It is important to carefully choose the type and size of nozzles as well as maintain or replace them when needed.

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 labour costs. Expenses incurred as a result are much higher than the cost of nozzle replacement.

KWPZAG2,0000B34-19-06SEP21

Check and Replace Worn Nozzles



APY64315—UN—09JUL21

A—New Spray Nozzle
B—Worn Spray Nozzle
C—Damaged 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—overapplying and underapplying.

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.

KWPZAG2,0000B35-19-06SEP21

Calibrating Nozzles

Frequency of Calibration

Even though a sprayer's operation can be theoretically 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.

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

KWPZAG2,0000B36-19-06SEP21

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

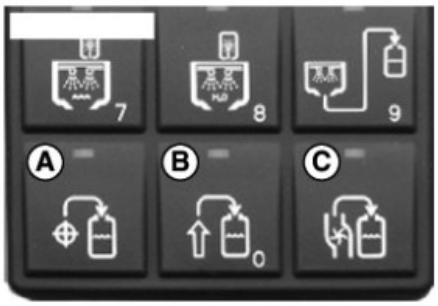
A—Fill Connection Cap

1. Set the tractor engine between 1200 rpm to 1800 rpm.

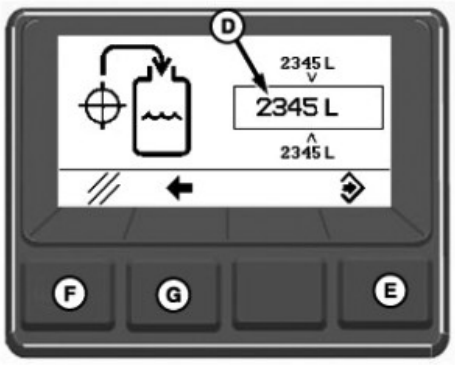
NOTE: The tractor hydraulic performance determines the filling performance.

NOTE: Higher rpm improves the sprayer performance for filling, as more oil becomes available for the filling pump.

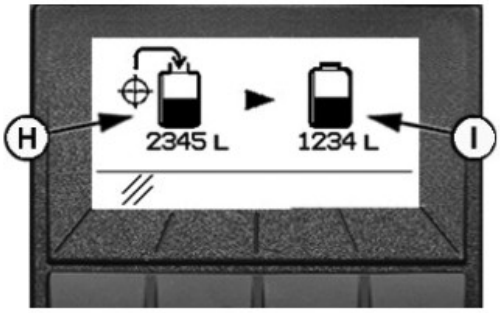
2. Remove fill connection cap (A).
3. Connect the external fill hose to filling adapter.



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.

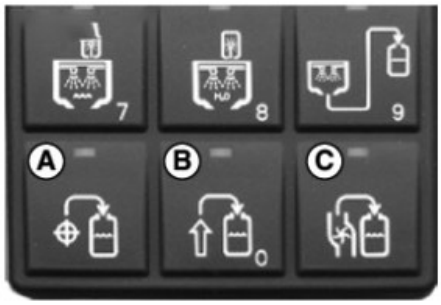
IMPORTANT: Use a strainer on filling hoses ensuring the water entering the solution tank is free from debris and slit. The strainer helps to protect the inner workings and pumps of the machine.

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).

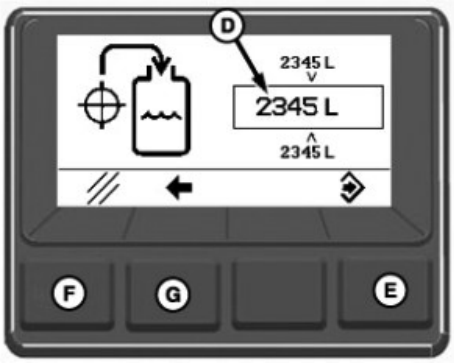
APY64316—UN—09JUL21

A—Fill Connection Cap

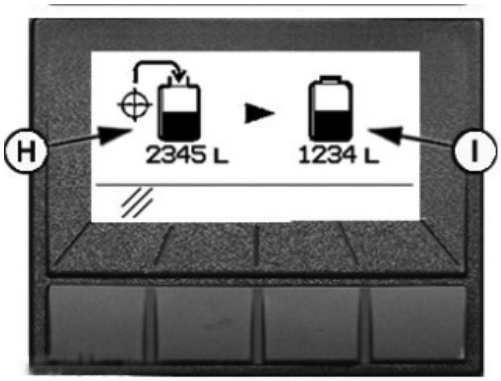
1. Operate the tractor engine at low idle.
2. Remove fill connection cap (A).
3. Connect external fill hose to filling adapter.



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

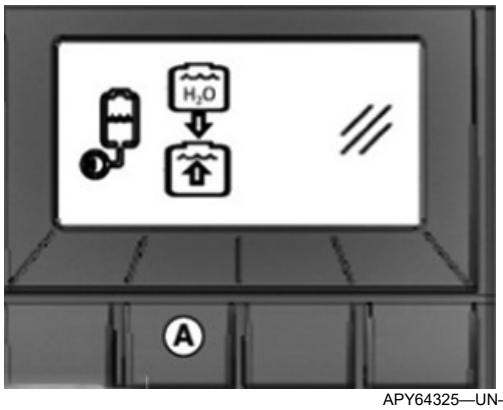
CAUTION: Read carefully the directions printed on the chemical label before handling, chemicals may be hazardous to personal health.

CAUTION: Observe the tank level carefully to avoid overfilling, and the possibility the tank contents (with chemicals) runs out through the solution tank overflow.

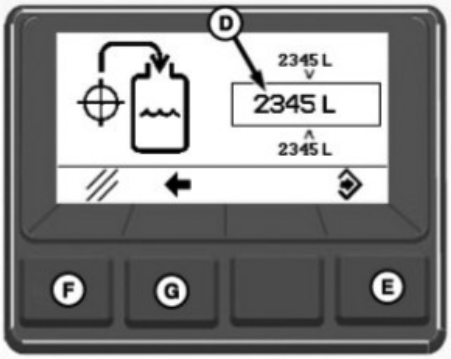
CAUTION: Observe the rinse tank level carefully to avoid dry run of the sprayer pump.

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.

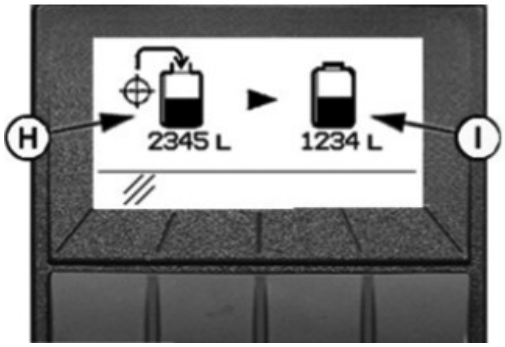
APY64324—UN—09JUL21



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.

KWPZAG2,0000B3A-19-06SEP21

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.

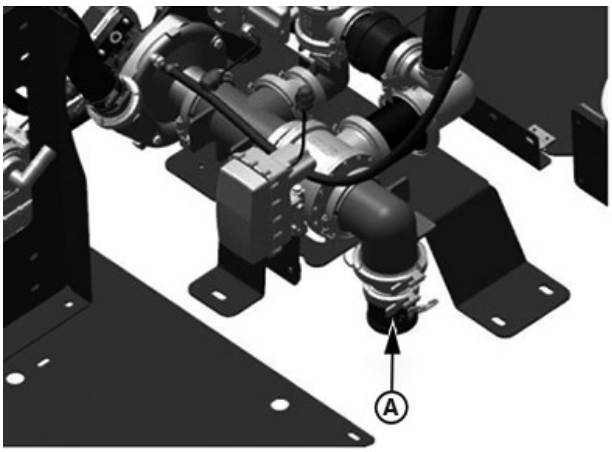
KWPZAG2,0000B3B-19-06SEP21

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.

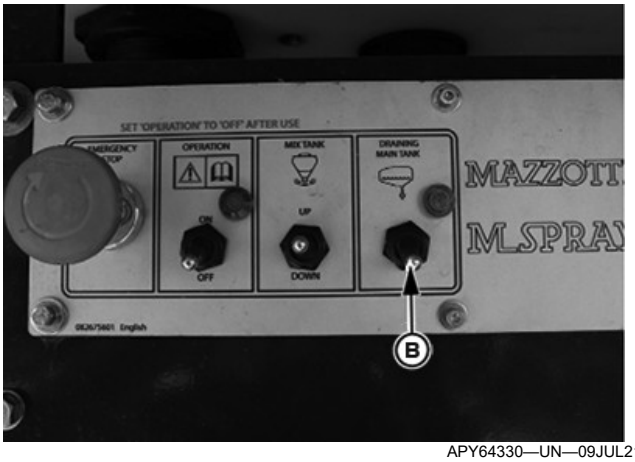
This procedure intends to show how to drain the main spray tank.



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).

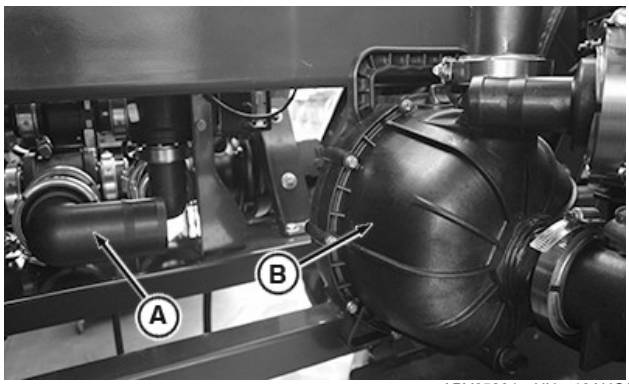
KWPZAG2,0000B3C-19-06SEP21

System Rinse

System Rinse is a factory-installed option that can be fitted to the MAF 3180/3580/4080 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 AutoDilute 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.

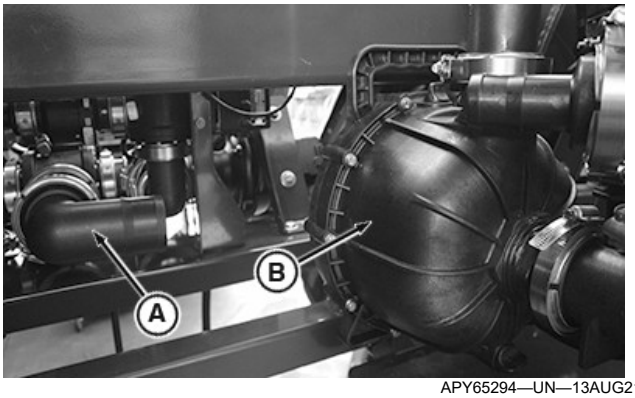
GreenStar is a trademark of Deere & Company

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 inductor, and supplying rinse water to the solution tank rinsing nozzles.

NOTE: To run the System Rinse effectively, ensure that there is a constant oil flow from the tractor to the sprayer.

System Rinse uses the two centrifugal pumps in combination to achieve the required results for the programme 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:

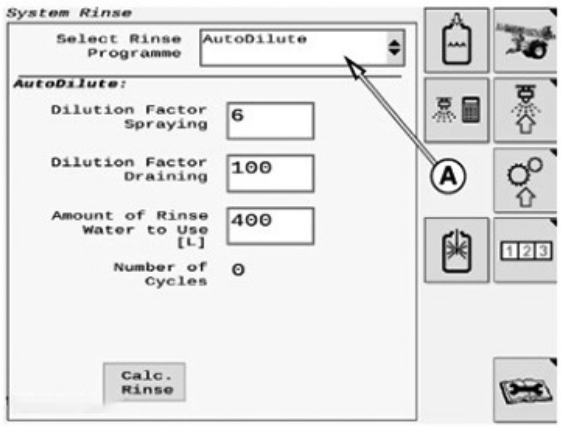
- Steps which should be followed to rinse all the different hoses and spray lines properly.
- Most effective way to dilute and spray out the residual spray liquid.
- Most efficient use of water available in the rinse water tank for the purpose of cleaning the sprayer

System Rinse

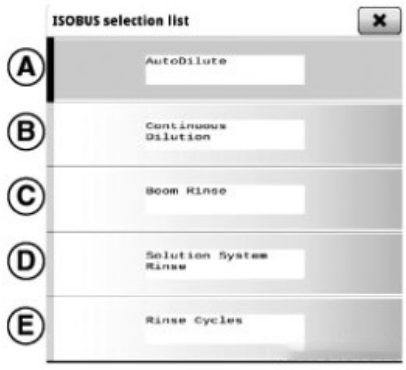
NOTE: Ensure that all boom sections are enabled (appear black on the display).

John Deere Section Control is turned Off.

The Spray Master valve is closed.



APY64331—UN—09JUL21



APY64332—UN—09JUL21

A—AutoDilute
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:

- AutoDilute (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 AutoDilute can be performed before carrying out the continuous dilution. Apart from the single cycle AutoDilute (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.

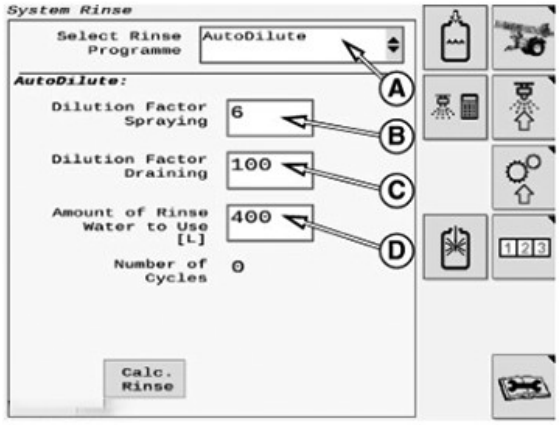
NOTE: Before starting any of the procedures in the system rinse menu ensure that the rinse water tank is full to get the best results for rinsing and for diluting. Ensure that all spray sections are enabled. Once a program has started, entering another program or machine settings interrupts the running programme and stops the procedure.

GreenStar is a trademark of Deere & Company

Setting the AutoDilute 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).



APY64333—UN—09JUL21

A—AutoDilute
B—Dilution Factor Spraying
C—Dilution Factor Draining
D—Amount of Rinse Water to Use

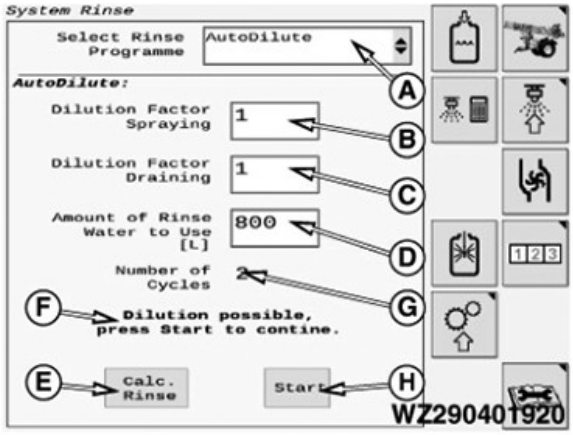
The functionality of the AutoDilute (A) system is adjusted with three parameters.

- 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 AutoDilute.
- 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 AutoDilute

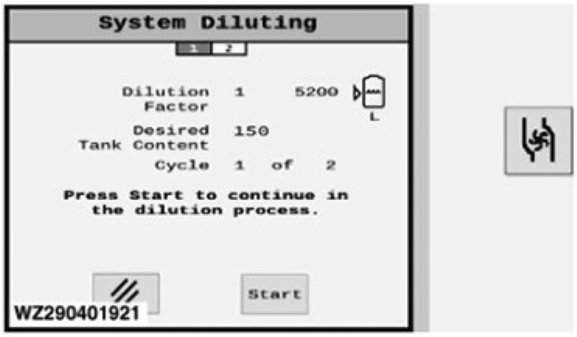
To thoroughly clean the sprayer, do the following:



APY64334—UN—09JUL21

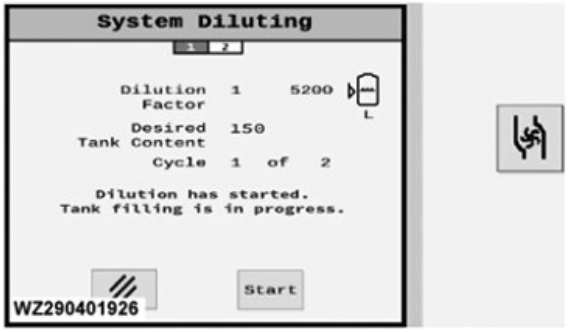
A—AutoDilute
B—Dilution Factor Spraying
C—Dilution Factor Draining
D—Amount of Rinse Water to Use
E—Calculate Rinse
F—Message - Dilution Possible (press start to continue)
G—Number of Cycle
H—Start Button

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 AutoDilute (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.

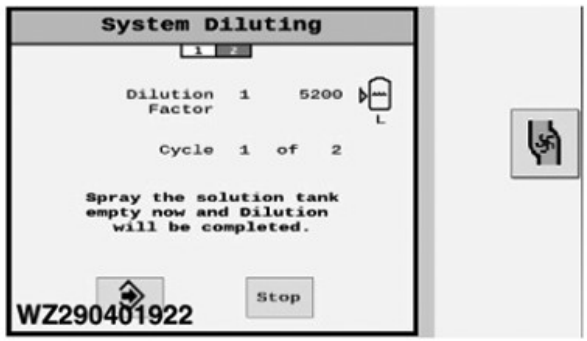


APY64335—UN—09JUL21

GreenStar is a trademark of Deere & Company



APY64336—UN—09JUL21



APY64337—UN—09JUL21

APY64338—UN—09JUL21

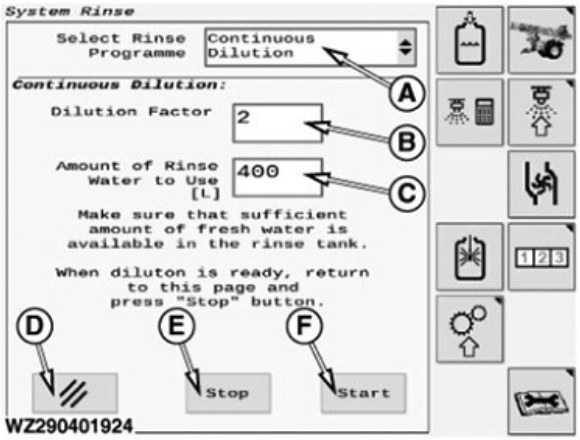
6. Press the Start button (H) to begin the AutoDilute (A) process.

The operator can decide to stop the AutoDilute (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.



APY64339—UN—09JUL21

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 AutoDilute 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 AutoDilute 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 AutoDilute.
- 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.

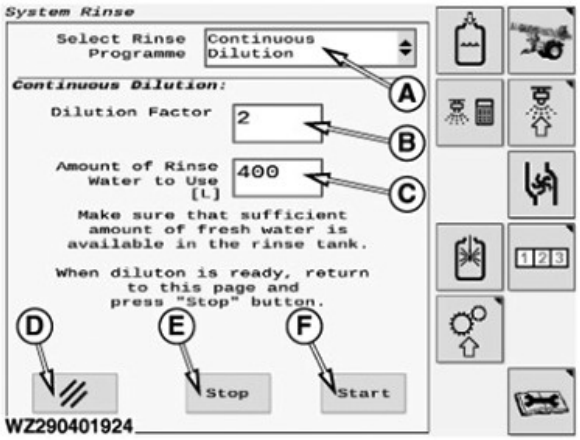
Cancel button (D) stops the selection and returns to the start of the second dilution cycle.

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



APY64340—UN—09JUL21

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

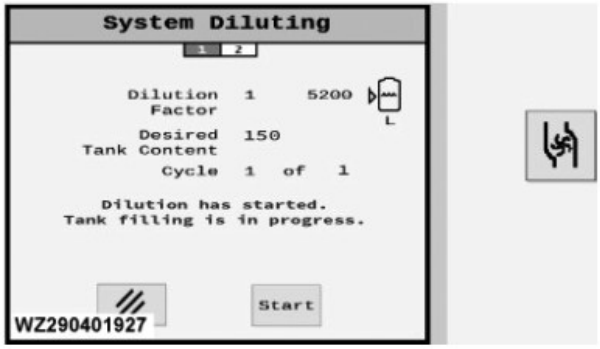
Set 0 or 1 for the Dilution Factor (B) and the process bypasses the single cycle-controlled dilution of the solution tank content. The process directly adds water to the solution tank via the rinse nozzles and the operator is asked to spray out the solution while the dilution continues. The spray out 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.

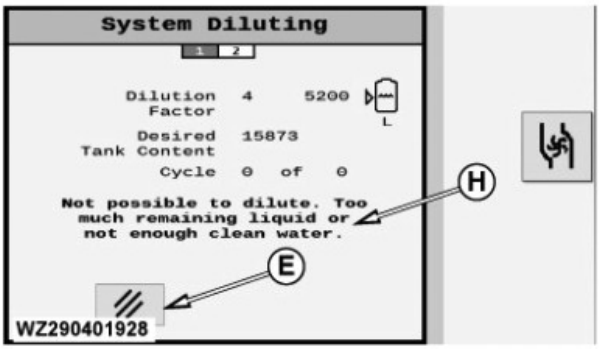
   Messages displayed on sprayer - main page during the process (in no particular order) and the actions required:

   - 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.

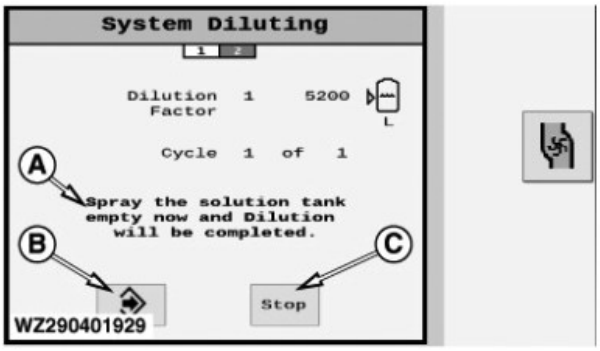
Procedure for Dilution Factor 2 or Higher

Set 2 or higher for the Dilution Factor and the process

GreenStar is a trademark of Deere & Company

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.

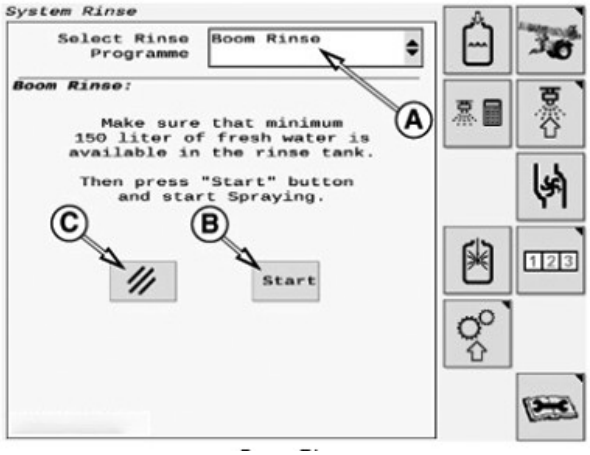
   Messages displayed on sprayer - main page during the process (in no particular order) and the actions required:

   - 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.

GreenStar is a trademark of Deere & Company

Working with Boom Rinse

IMPORTANT: A minimum of 150 liters of clean water must be contained in the rinse water tank.



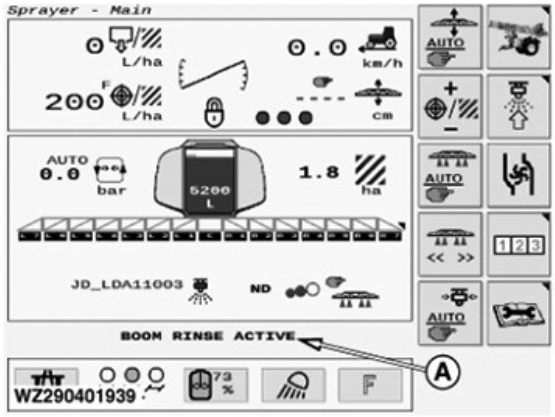
APY64345—UN—09JUL21

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.

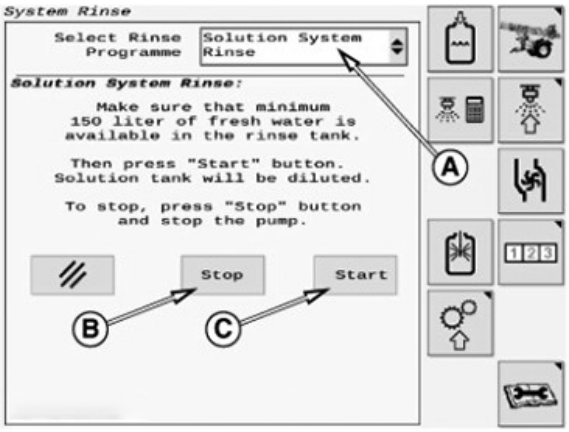


APY64346—UN—09JUL21

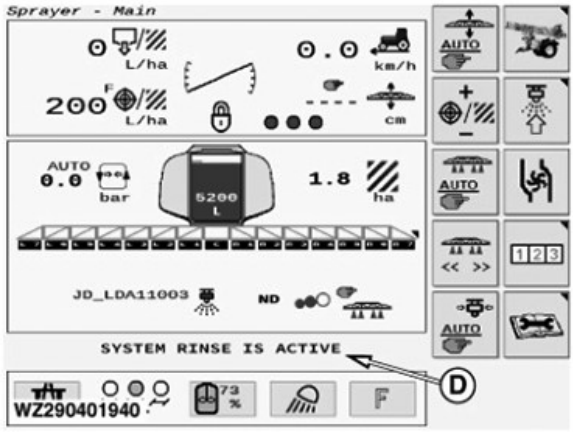
A—Boom Rinse Active

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 flowmeter 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.

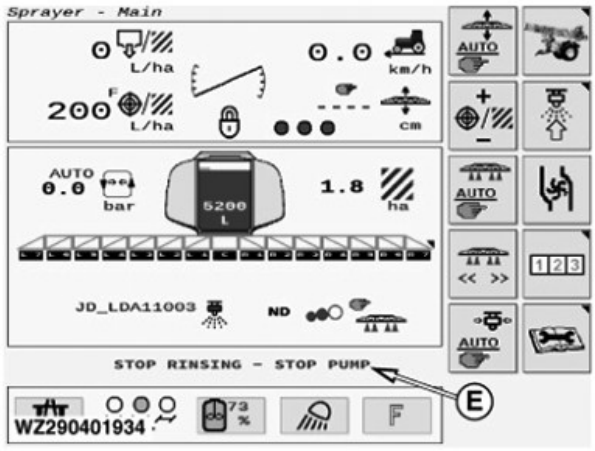
Solution System Rinse Program



APY64347—UN—09JUL21



APY64348—UN—09JUL21



APY64349—UN—09JUL21

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 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.

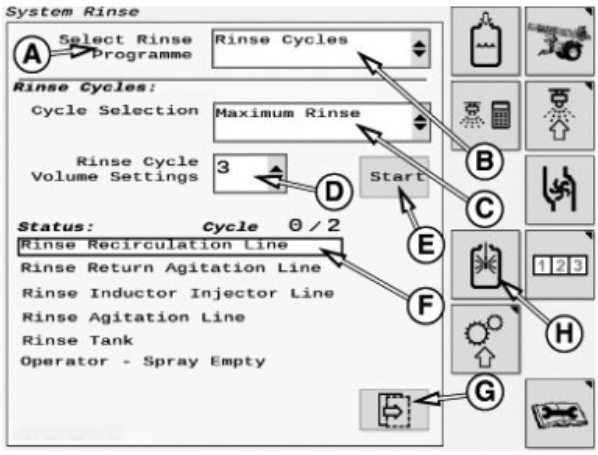
4. Follow the messages on the display for the Solution System Rinse (A) process.

   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



APY64350—UN—09JUL21

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 inductor 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.

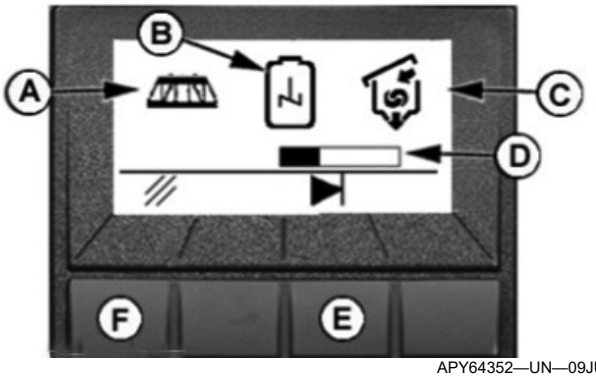
Start Rinse Cycles on the SCS Panel

APY64351—UN—09JUL21

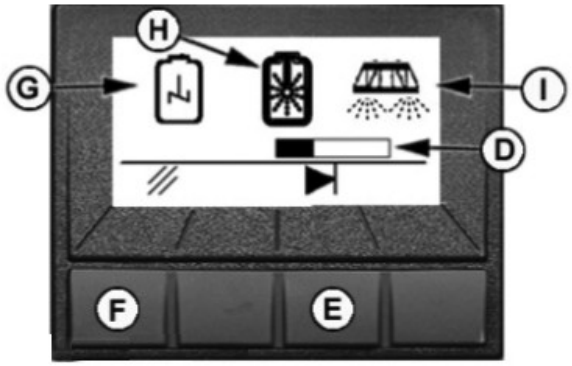
A—System Rinse Button

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 tractor cab.

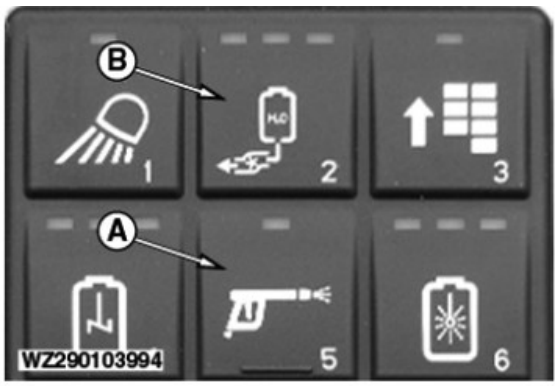
KWPZAG2,0000B3D-19-06SEP21

Wash Brush (If Equipped)

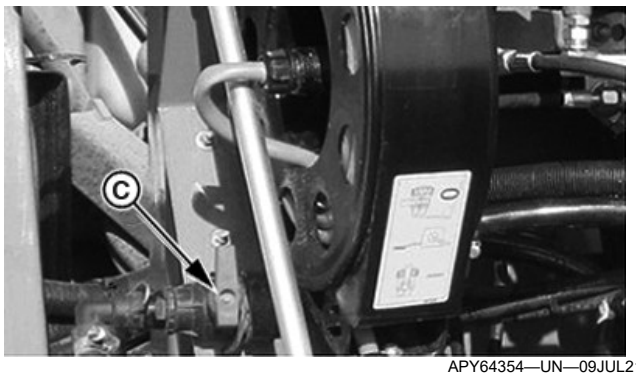
CAUTION: Always wear means of personal protection during cleaning activities.

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.

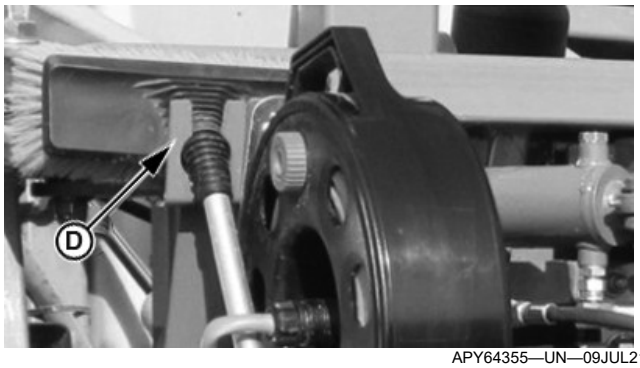
IMPORTANT: Drain water from the hose reel and wash brush for winterization.



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

Standard Steering Type

CAUTION: The new steering mode selected becomes active when the wheels pass through the center position and the corresponding indicator light turns on. The steering on the rear wheels is only enabled when the front wheels are aligned (indicator light (front axle) (E) on).

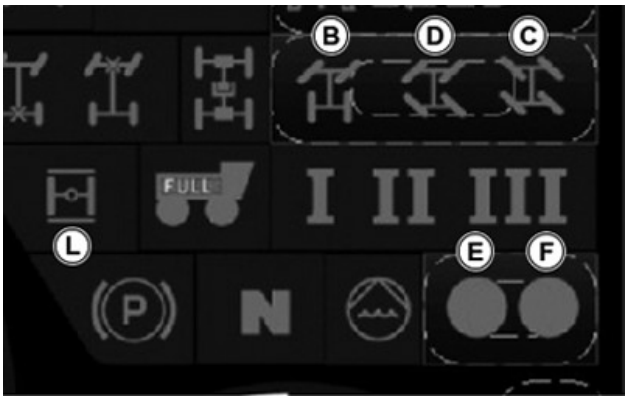
CAUTION: If the wheels are aligned too quickly, or with movements that are too abrupt, the rear axle safety pin may not be inserted correctly. If, for any reason, the safety pin mistakenly comes out from its locked position, the indicator light (L), the acoustic warning device in the cab, and the "ALARM C 116" alarm signal goes off. It is strictly forbidden to use 2-wheel steering on the machine without the safety pin in place, particularly in case of road traffic.

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.

APY64358—UN—09JUL21

A—Selector Switch
1—Crab Steering
2—Front Wheel
3—Circle Steering



APY64359—UN—09JUL21

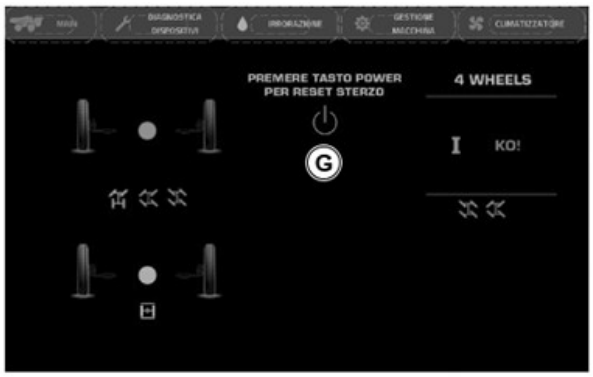
B—Indicator Light
C—Indicator Light
D—Indicator Light
E—Indicator Light (front axle)
F—Indicator Light (rear axle)
L—Indicator Light

The selector switch (A) can be used to set three different types of steering:

1. Circle 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.

The indicator light (front axle) (E) indicates that the front axle is in the central position.

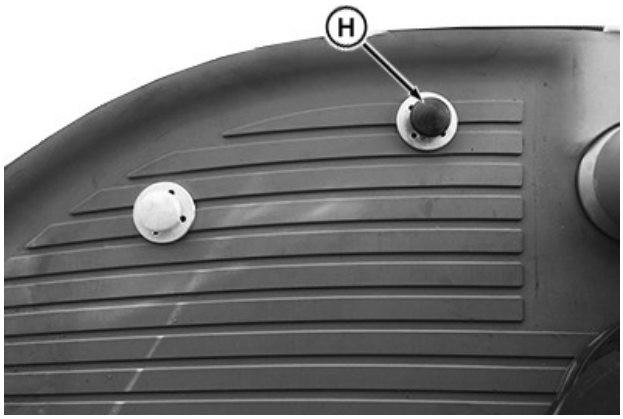
The indicator light (rear axle) (F) indicates that the rear axle is in the central position.



APY64360—UN—09JUL21

G—Press Button

To reset steering, press button (G), located inside the page sterzo/steering system, accessible via “gestione macchina/machine management” on Tera 10 display. The steering stays enabled on the front wheels for the time it is held down, regardless of the type of steering set with the selector switch (A). This makes it possible to realign or reposition the front wheels.



TG529779—UN—13JAN22

H—Foot Button

The foot button (H) is always active with crab steering selector switch (A) and circle steering (selector switch (A)). Pressing this switches the steering 4—2 wheels as soon as the rear axle reaches the center. Press the button again to return to 4-wheel steering as soon as the front axle reaches the center. This system is convenient for getting in and out of rows of crops.

The orange indicator light (L) which, when on, shows that the rear axle is free from its safety pin.

In any case, always bear in mind that:

- Crab or circle steering only works in low gears.
- Pressing the pedal switch while maintaining the steering method does not switch off indicator light (B) or indicator light (D).
- The activation of the front wheel steering causes the automatic locking of the rear axle, indicated by indicator light (L) turning off.

Hydraulic Steering System

CAUTION: In order to execute tread settings it is necessary to adhere the logic represented on the right side as follows:

APY64362—UN—09JUL21

1—Pop-Up

1. **Operator must not be seated.**
2. **Machine in the NEUTRAL position.**

Select the inner part of pop-up (1), then it turns into green. After this, make sure that machine is lifted for executing the thread adjustments.

VK06011,00008D4-19-17FEB22

Changing Speed

Machine with MS08 Transmission

IMPORTANT: If the speed change command does not occur due to the lack of any of the conditions listed above, when the missing condition is restored, the speed is not changed automatically. Button (A) must be pressed again.

IMPORTANT: If the machine is equipped with automatic axle, execute the procedure directly on Tera 10 monitor. If the machine is equipped with hydraulic axle, execute the procedure directly on the CommandARM™.

CommandARM is a trademark of Deere & Company

APY64363—UN—09JUL21

APY64364—UN—09JUL21

A—Button
B—Tortoise Indicator Light
C—Hare Indicator Light
D—Indicator Light
E—Indicator Light
G—Indicator Light

Press the button (A) to select the machine forward speed, which can be slow the tortoise indicator light (B) lights up green or fast the hare indicator light (C) lights up green.

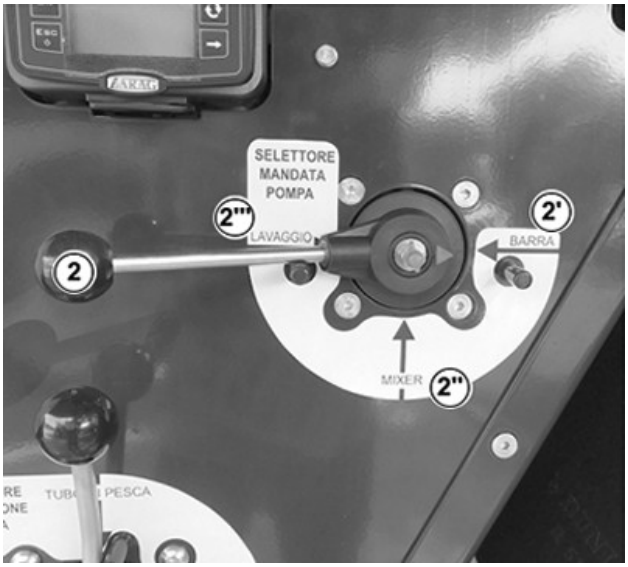
In order to enable the fast speed, it is necessary to meet the following conditions:

- Control lever in the NEUTRAL central position indicator light (H) lights up green.
- Enable the control lever button not active indicator light (G) off.
- Rear axle check off pin inserted indicator light (E).
- Select front wheel steering on Tera 10 or CommandARM™.
- Empty tank indicator light (D) off.
- Automatic axles selector (if equipped) in the NEUTRAL position.

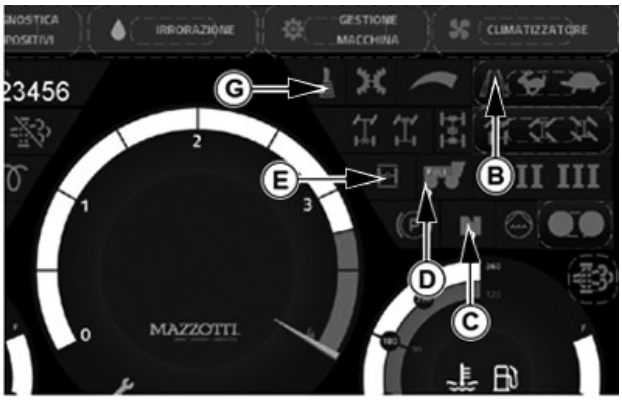
Machine with MHP11 Transmission

CAUTION: If the speed change command does not occur due to the lack of any of the conditions listed above, when the missing condition is restored, the speed is not changed automatically. Press button (A) again.

IMPORTANT: If the machine is equipped with automatic axle, execute the procedure directly on Tea 10 monitor. If the machine is equipped with hydraulic axle, execute the procedure directly on the CommandARM™.



APY64365—UN—09JUL21



APY64366—UN—09JUL21

A—Button
B—Road Indicator Light
C—Indicator Light
D—Indicator Light
E—Indicator Light
G—Indicator Light

Press the button (A) to select the machine forward speed, which can be slow (road indicator light (B) off) or fast (road indicator light (B) on green).

In order to enable the fast speed, it is necessary to meet the following conditions:

CommandARM is a trademark of Deere & Company

- Control lever in the NEUTRAL central position (indicator light (C) lights up green).
- Enable the control lever button not active (indicator light (G) off).
- Rear axle check off pin inserted (indicator light (E)).
- Select front wheel steering (on Tera 10 or CommandARM™).

KWPZAG2,0000B40-19-06SEP21

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.

APY64367—UN—09JUL21

APY64368—UN—09JUL21

A—Button
B—Indicator Light
B'—Indicator Light
C—Button
H—Indicator Light
S—Indicator Light
E—Potentiometer

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.

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 activated by button (A) (indicator light (B) off green or indicator light (B') off).

The slow motion function is activated by pressing button (C) (indicator light (S) lights up green).

The speed of the machine can be adjusted using the potentiometer (E) (from 0 to maximum).

KWPZAG2,0000B41-19-06SEP21

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.

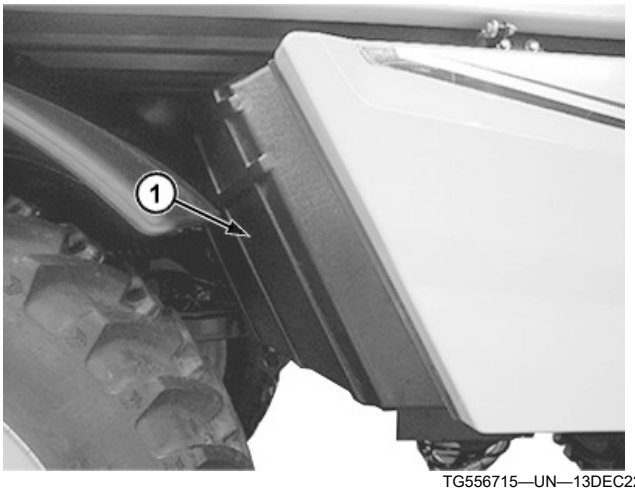
The fundamental conditions necessary in order to proceed with the adjustment of the suspension are as follows:

- 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, bars in the transfer position (closed and resting on the relative chassis)
- Diesel engine running at about 1500 rpm
- Forward lever in the NEUTRAL position
- No operator in the driving cab to prevent accidental movement

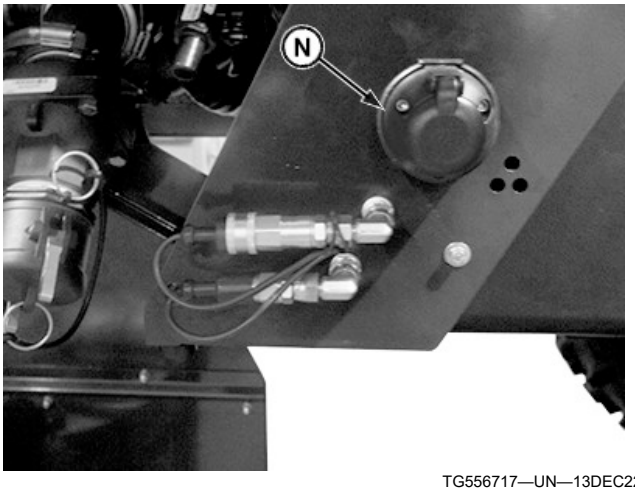
Rear Suspension

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.

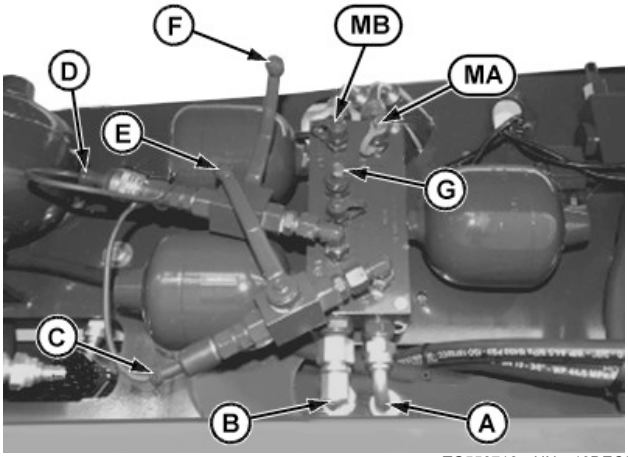
CAUTION: If the pressure in MB is not 100-110 bar(± 5 bar) it is necessary to repeat the whole procedure.



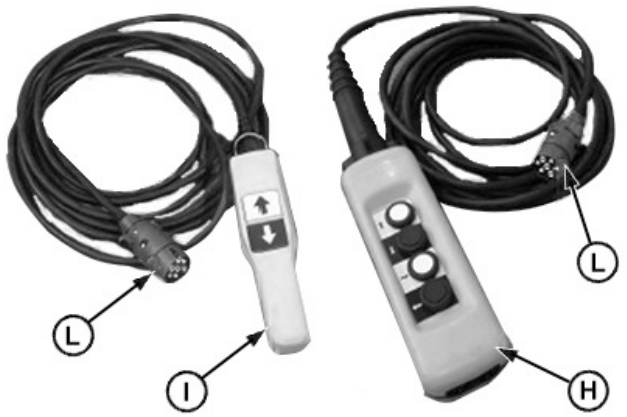
TG556715—UN—13DEC22



TG556717—UN—13DEC22



TG556716—UN—13DEC22



TG556718—UN—13DEC22

1—Access Pannel
A—Line
B—Line
C—Coupling
D—Coupling
E—Tap
F—Tap
G—Lock Nut
MA—Pressure Gauge
MB—Pressure Gauge

1. Connect two pressure gauges with graduated scale 0—250 bar in MA and MB.
2. Connect the flexible pipes supplied with the quick couplings (A) and (B) on the left side of the machine, and the couplings (C) and (D) on the hydraulic suspension block on the rear right side of the machine.

H—Pushbutton
I—Pushbutton
L—Cable
N—Outlet

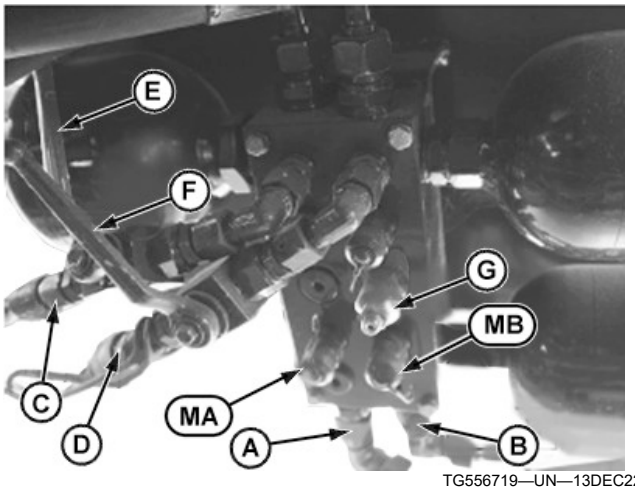
3. Connect the cable (L) of the remote control (I) or (H) supplied, to the outlet (N).
4. Open the taps (E) and (F).
5. Loosen the lock nut (G) and loosen the grub screw completely.
6. Using the remote control, lift and lower the rear suspension completely at least five times so as to discharge any air present in the system.
7. To raise the machine, press the up arrow button on the (I) or (H) on the keypad (this puts pressure on line [B]). Insist on the limit switch for 2 seconds.
8. Close the tap (F) of the line (B).
9. To lower the machine, press the down arrow button on the (I) or (H) pushbutton (this puts pressure on line [A]), until it reaches the value of 70 mm (±2 mm).
10. Pressurise the tap (E) on line (A).
11. Read on the pressure gauge installed a pressure on MA of 110—120 bar (±5 bar).
12. Check that in the pressure gauge mounted on MB there are 100—110 bar (±5 bar).

13. Tighten the grub screw fully and then tighten the lock nut (G).

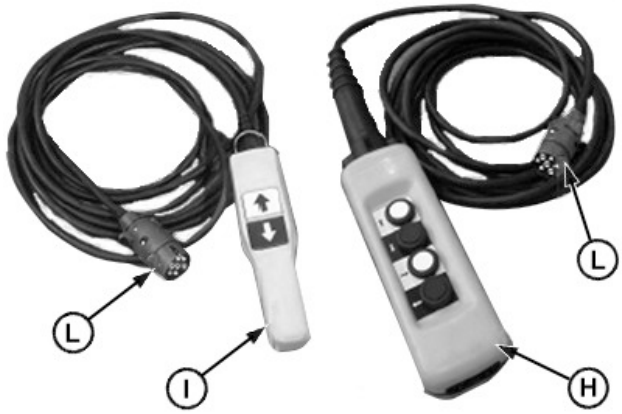
Pre-Charging Accumulators (rear suspensions)

- The accumulators of line (A) has a capacity of 0.75 liter and a pre-charge value of 50 bar.
- The accumulators of the line (B) have a capacity of 0.5 liters and a pre-charge value of 55 bar.

Front Suspension



TG556719—UN—13DEC22



TG556718—UN—13DEC22

A—Line
B—Line
C—Coupling
D—Coupling
E—Tap
F—Tap
G—Lock Nut
H—Pushbutton
I—Pushbutton
L—Cable
MA—Pressure Gauge
MB—Pressure Gauge
N—Outlet

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 in MB there are not 100—110 bar (±5 bar) it is necessary to repeat the whole procedure.

1. Connect two pressure gauges with graduated scale 0—250 bar in MA and MB.
2. Connect the flexible pipes supplied with the quick couplings (A) and (B) on the left side of the machine, and the couplings (C) and (D) on the hydraulic suspension block on the rear right side of the machine.
3. Connect the cable (L) of the pushbutton (I) or (H) supplied to the outlet (N).
4. Open the taps (E) and (F).
5. Loosen the lock nut (G) and loosen the grub screw completely.
6. Using the remote control, lift and lower the rear suspension completely at least five times so as to discharge any air present in the system.
7. To raise the machine, press the up arrow button on the (I) or (H) keypad (this puts pressure on line [B]) until measuring with a meter the exit of the cylinder rod of 75 mm (±2 mm).
8. Close the tap (F) of the line (B).
9. To lower the machine, press the down arrow button on the (I) or (H) pushbutton (this puts pressure on line [A]), until it reaches the value of 55 mm (±2 mm).
10. Pressurise the tap (E) on line (A).
11. Read on the pressure gauge installed a pressure on MA of 40 bar (±5 mm).
12. Check that in the pressure gauge mounted on MB there are 90—100 bar (±5 bar).
13. Tighten the grub screw fully and then tighten the lock nut (G).

Pre-Charging Accumulators (front suspensions)

- The accumulators of line (A) has a capacity of 0.75 liter and a pre-charge value of 25 bar.
- The accumulators of the line (B) have a capacity of 0.5 liters and a pre-charge value of 50 bar.

vk06011,1670916359324-19-15DEC22

Adjusting the Tracks (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.

CAUTION: Do NOT use the steering wheel (keep moving straight forward) while on the track.

IMPORTANT: Every two working hours it is advisable to move the steering wheel to the end of its run.

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.

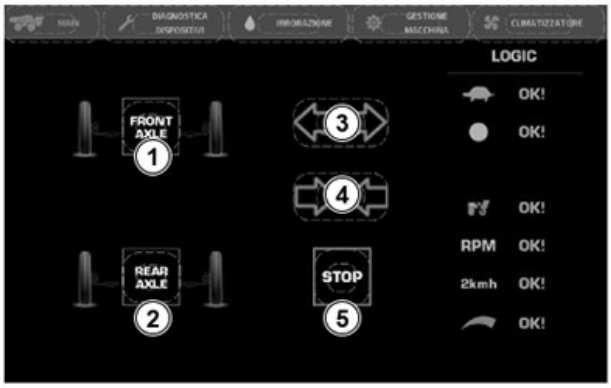
The fundamental conditions necessary in order to proceed with the automatic adjustment of the track are as follows:

- Reduced gear activated
- Rear axle check pin inserted
- Tank Empty
- Diesel engine running at 1900 rpm
- If present, bars 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:



APY64375—UN—09JUL21

1—Option (front axle)
2—Option (rear axle)
3—Arrow
4—Arrow
5—Stop

- Remove the safety pins from the extractable part.
- Move the travel lever forward or backward until it reaches speed of over 5 km/h
- Select front axle pressing option (front axle) (1)
- Open track by utilizing the arrows (3) or close tracks with arrows (4)

Adjusting the Tracks

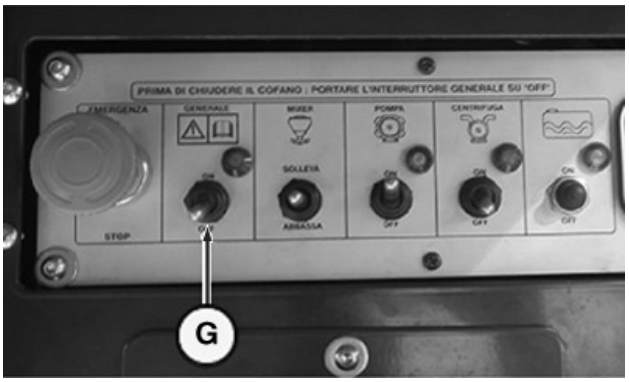
The front and rear tracks of the machine can be adjusted for both a narrow and a wide axle.

Each wheel can be adjusted independently manually or hydraulically according to the Ordered configuration.

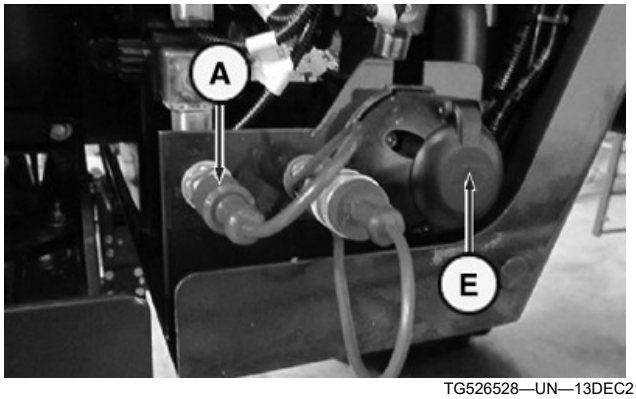
Adjusting the Narrow Axle — Hydraulic Movement

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.

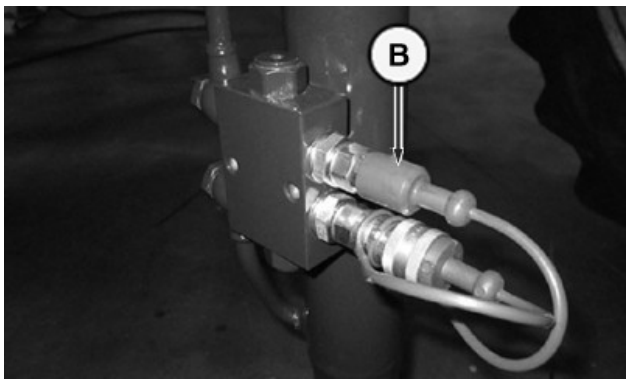
The fundamental conditions necessary in order to proceed with the adjustment of the track are as follows:



TG526527—UN—13DEC21



TG526528—UN—13DEC21

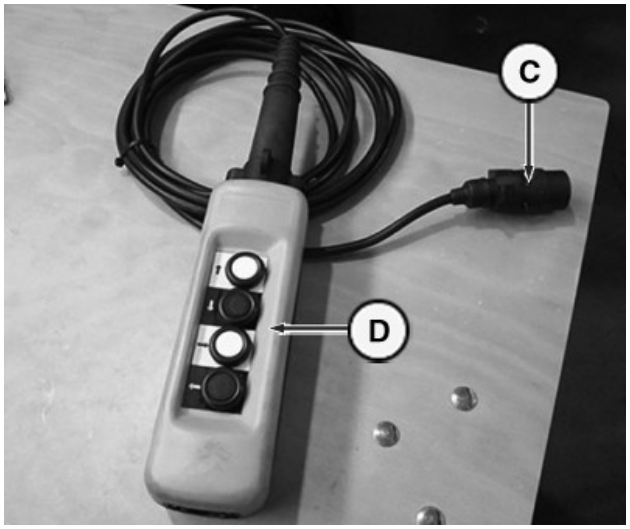


TG526529—UN—13DEC21

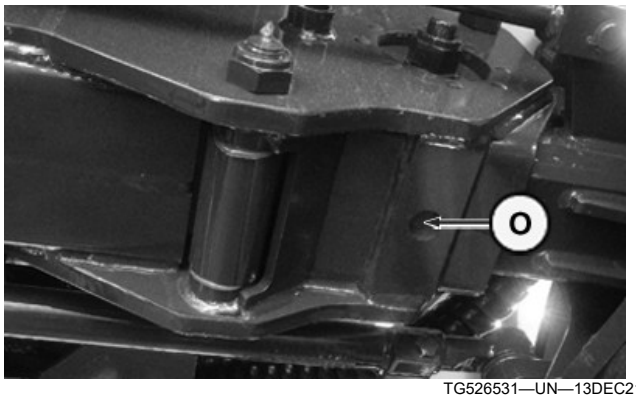
A—Quick Coupler
B—Hydraulic Jack
E—Outlet
G—Main Switch

- 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)
- Axle block selector switch **X**, if present in the unlocked position **I**
- No operator in the driving cab to prevent accidental movement
- External main switch (G) in the ON position

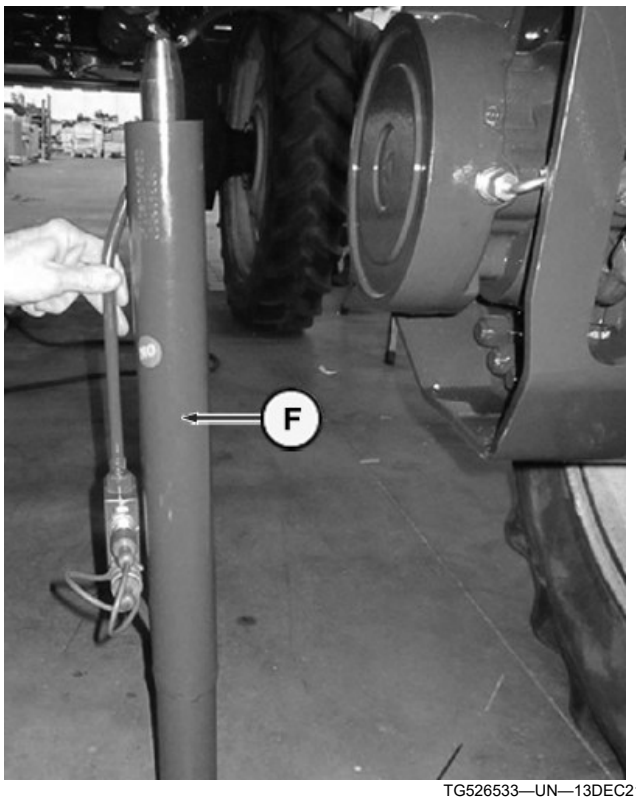
Proceed as follows:



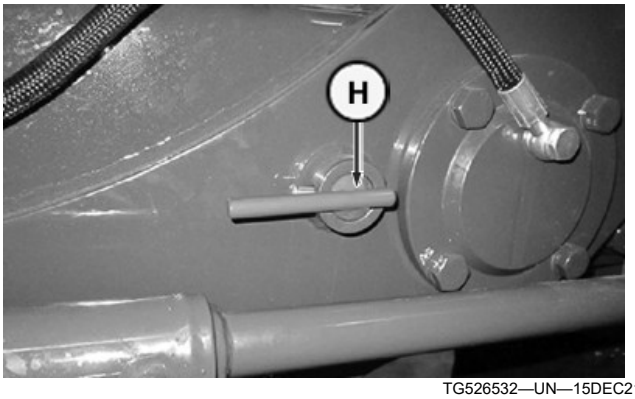
TG526530—UN—15DEC21



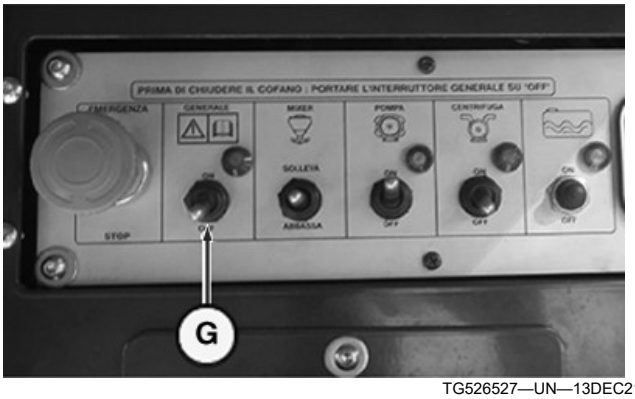
TG526531—UN—13DEC21



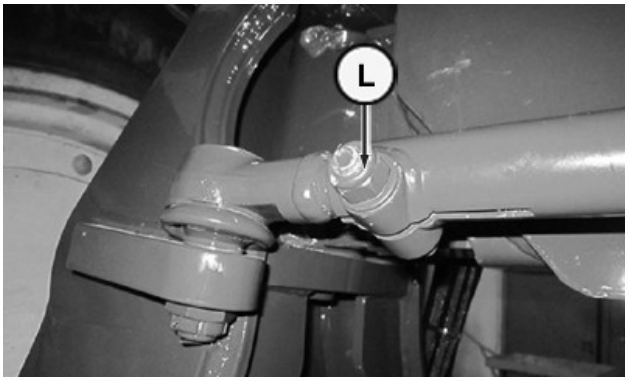
TG526533—UN—13DEC21



TG526532—UN—15DEC21



TG526527—UN—13DEC21

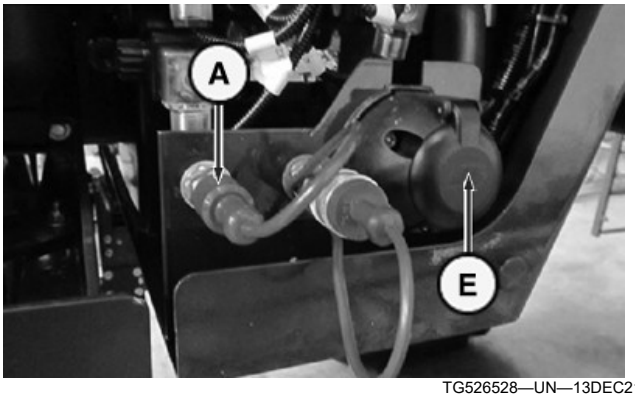


TG526534—UN—13DEC21

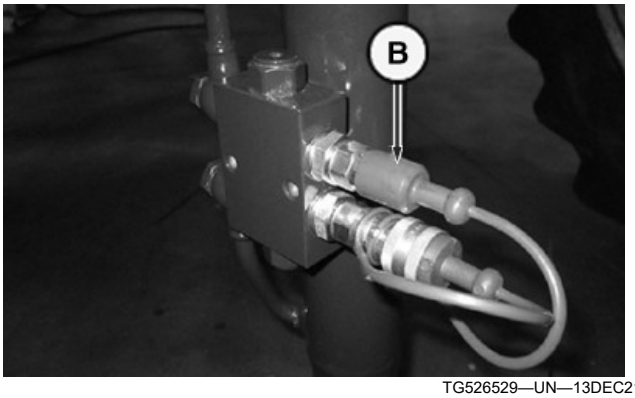
TG526535—UN—13DEC21

C—Cable
D—Pushbutton 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 (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



TG526528—UN—13DEC21



TG526529—UN—13DEC21

A—Quick Coupler
B—Hydraulic Jack
E—Outlet
G—Main Switch

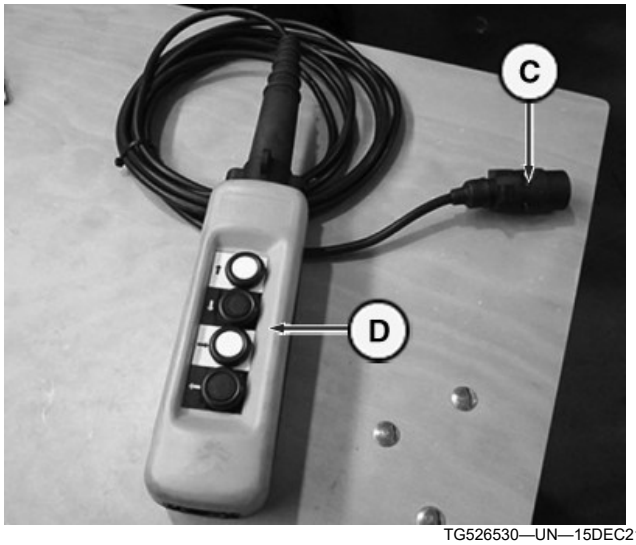
Adjusting the Wide Axle — Hydraulic Movement

The fundamental conditions necessary in order to proceed with the adjustment of the track are as follows.

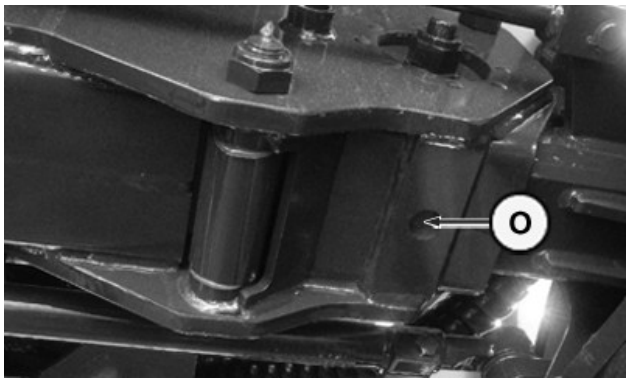
- Machine on flat, evenly load-bearing ground
- Diesel engine running at about 1300 rpm

- Control lever in the NEUTRAL position (**N** green indicator light on)
- Parking brake engaged (**P** red indicator light on
- External main switch (G) in the ON position

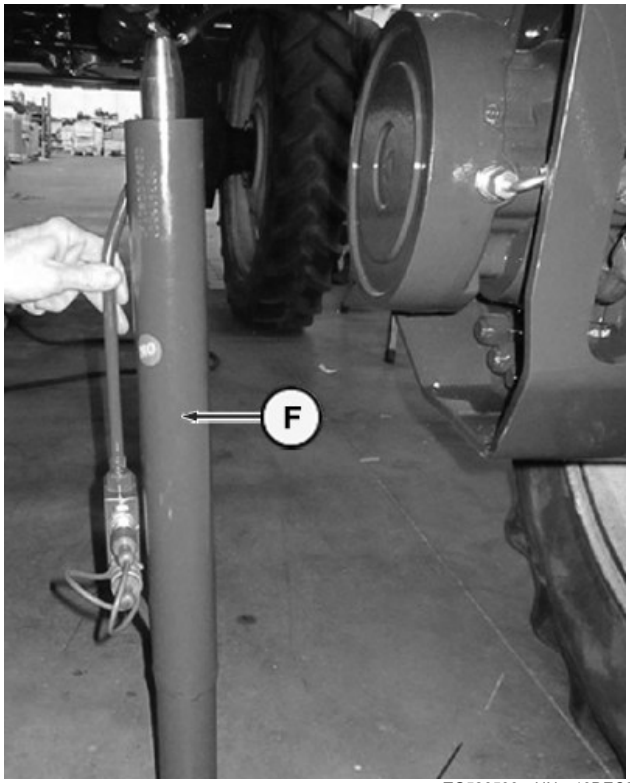
Proceed as follows:



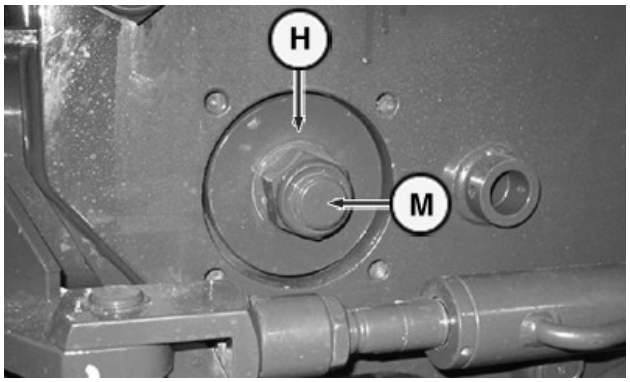
TG526530—UN—15DEC21



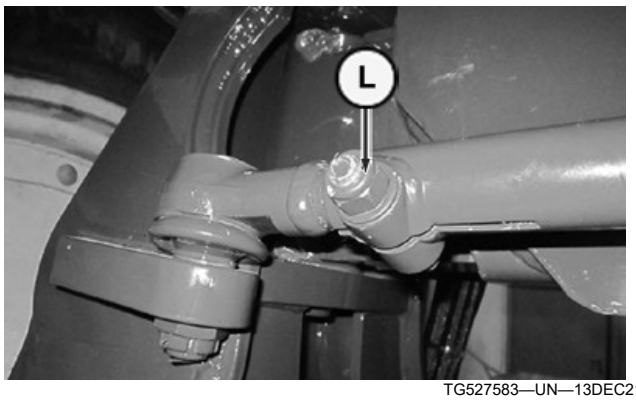
TG526531—UN—13DEC21



TG526533—UN—13DEC21



TG527584—UN—13DEC21



TG527583—UN—13DEC21

C—Cable
D—Push-button Panel
F—Hydraulic Jack
H—Safety Pin
L—Cap Screw
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 (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

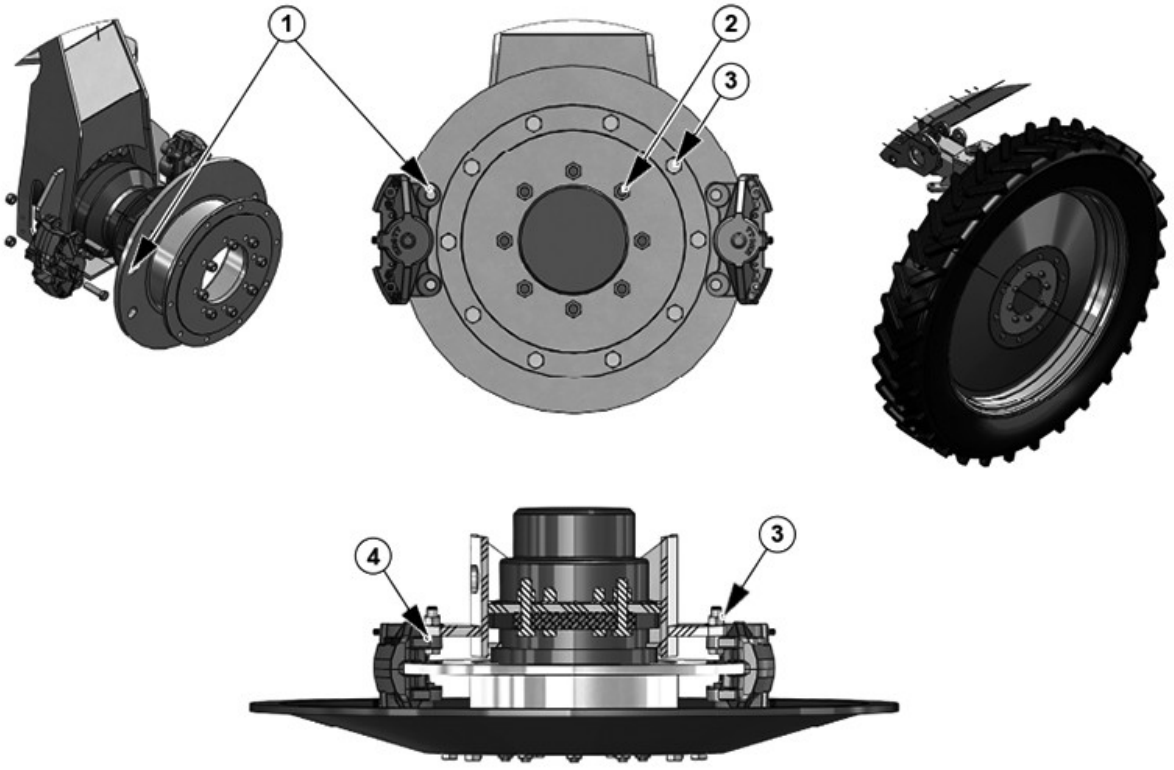
KWPZAG2,0000B43-19-27DEC21

Installation Disc Brakes

CAUTION: The following procedure applies only to machines fitted with disc brakes.

If the machine is transported, for reasons of space, with wheels and disc brakes apart and resting on its spindles, reassemble as described below:

- Lift the machine by the transport.
- Install the disc wheel properly orienting the holes for mounting the brake caliper.
- Install the brake caliper on both sides.
- Install the wheel on the disk.
- Tighten all the bolts to the torque shown in the image below.
- Perform the operations on the remaining three spindles of the machine.



APY64376—UN—09JUL21

1—Hole Alignment
2—Tightening Torque Point
3—Tightening Torque Point
4—Shim/Washer

Reference	Action
1	Align the holes on the disk to insert the screws brake caliper.
2	Tighten to the torque of 600 N·m.
3	Tighten to the torque of 460 N·m.

4	If there is a shim or a washer, move it to center.

KWPZAG2,0000B44-19-06SEP21

Releasing the Parking Brake

Machines with MS08 Transmission Motors

CAUTION: The machine has no braking effect until the unlocking bars have been removed.

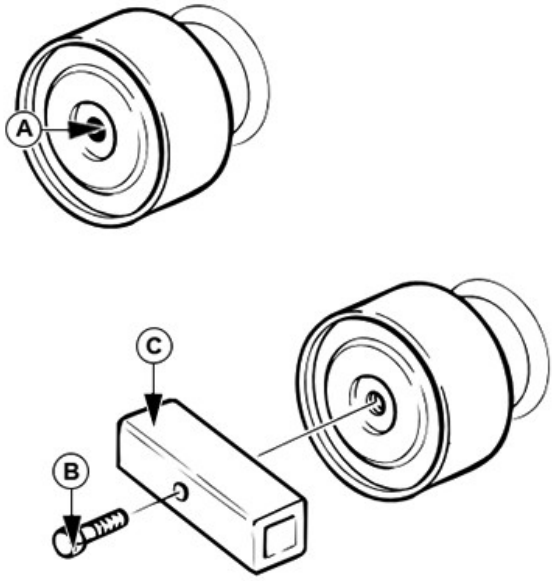
CAUTION: If there is the need to tow the machine with the brakes off, it is necessary to take care not to exceed a speed of 2 km/h.

The machine has negative brakes on the four wheels. The negative brake stops the machine whenever the engine is off.

To tow the machine, or release the brakes for any other reason, proceed as follows:

- Put the wedges under the wheels to prevent unwanted movement once the effect of the brakes has been released.
- Remove the protective rubber cap (A).
- Position the special unlocking bar (C) supplied so that it coincides with the hole where the cap has been removed.
- Tighten the screw (B) until the brake is unlocked.
- Perform the same operation on the other rear wheel.

APY64377—UN—09JUL21

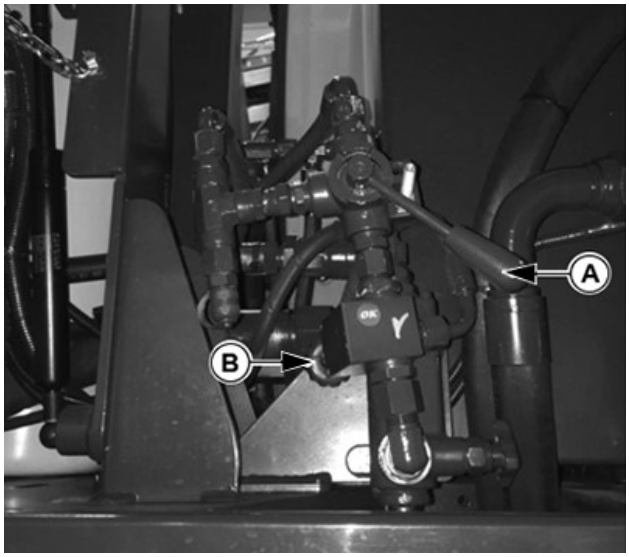


APY64378—UN—09JUL21

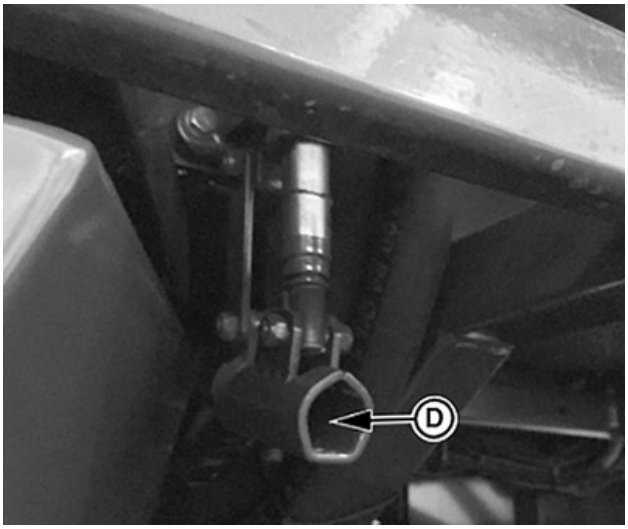
A—Rubber Cap
B—Screw
C—Unlocking Bar

Machines with MHP11 Transmission Motors

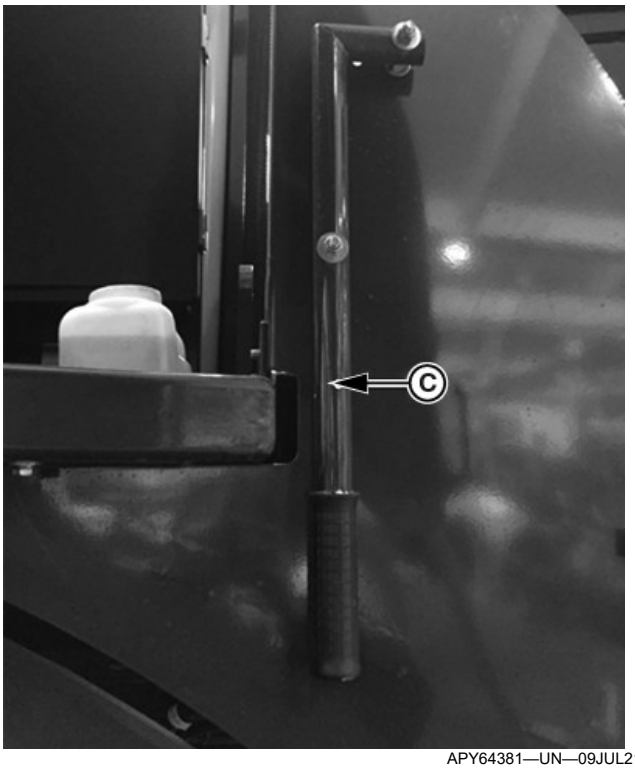
In order to tow the machine, it is necessary to unlock it as follows:



APY64379—UN—09JUL21



APY64380—UN—16AUG21



APY64381—UN—09JUL21

A—Tap
B—Black Knob
C—Handle
D—Seat

- Open the upper hood on the right side of the machine.
- Turn tap a 90° counterclockwise.
- Turn the black knob (B) clockwise until it is fully tightened.
- Release the locks then insert the handle (C) into the seat (D) and pump until the brakes are released.

To restore normal operation:

- Unscrew the black knob (B) and wait a couple of minutes.
- Turn tap (A) back to the home position.
- Reposition the handle (C) and secure it with the relative locks.

KWPZAG2,0000B45-19-06SEP21

MSpray System Composition

Pump

The **MAF3180/3580/4080** series sprayer has a centrifugal pump for the solution system with a capacity at 0 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

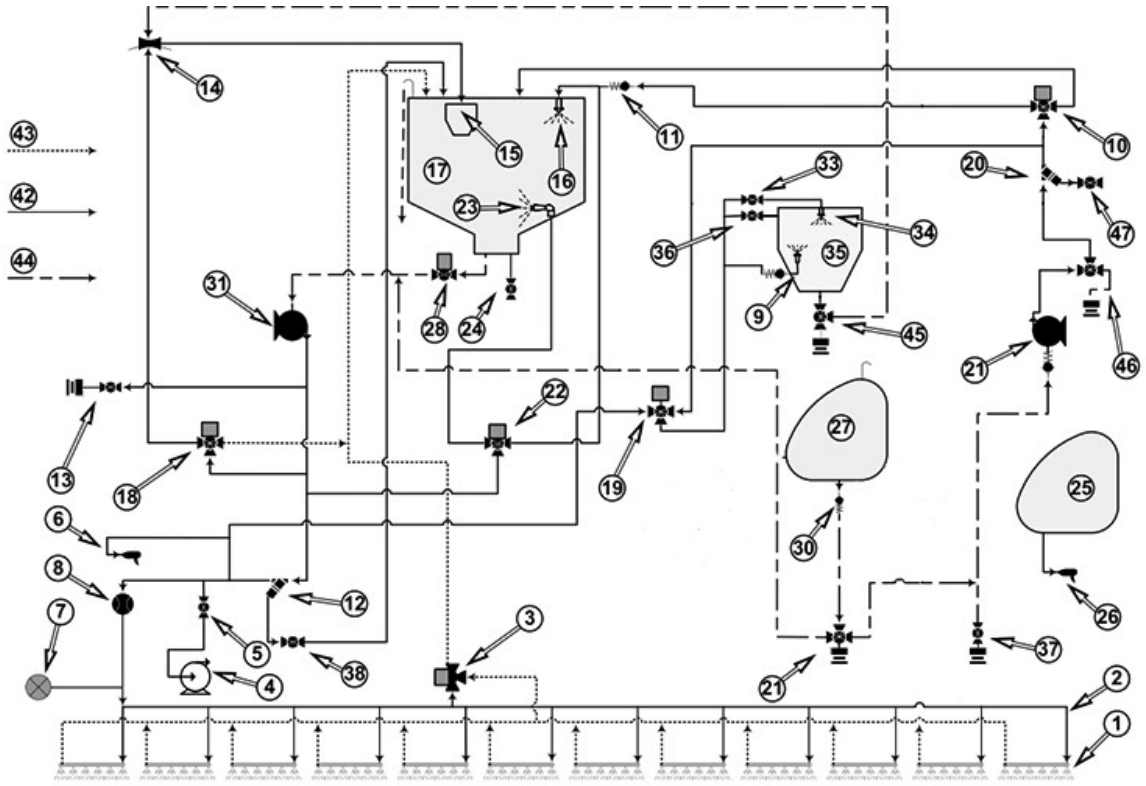
- The control system comprises of the solution command EPM (behind right-hand side door), a hydraulic flow regulator (rear of the drawbar), the valves of the solution command system (behind front left-side access door), and the master/circulation valve situated on the boom center frame at the rear of 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 Gen4 display fitted in the cab are connected to the spray rate control unit via the CAN Bus.
- The application rate control for **MAF3180/3580/4080** 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 27 to 40 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.

KWPZAG2,0000782-19-17AUG21

Functional Diagram—Pressure Circulation System

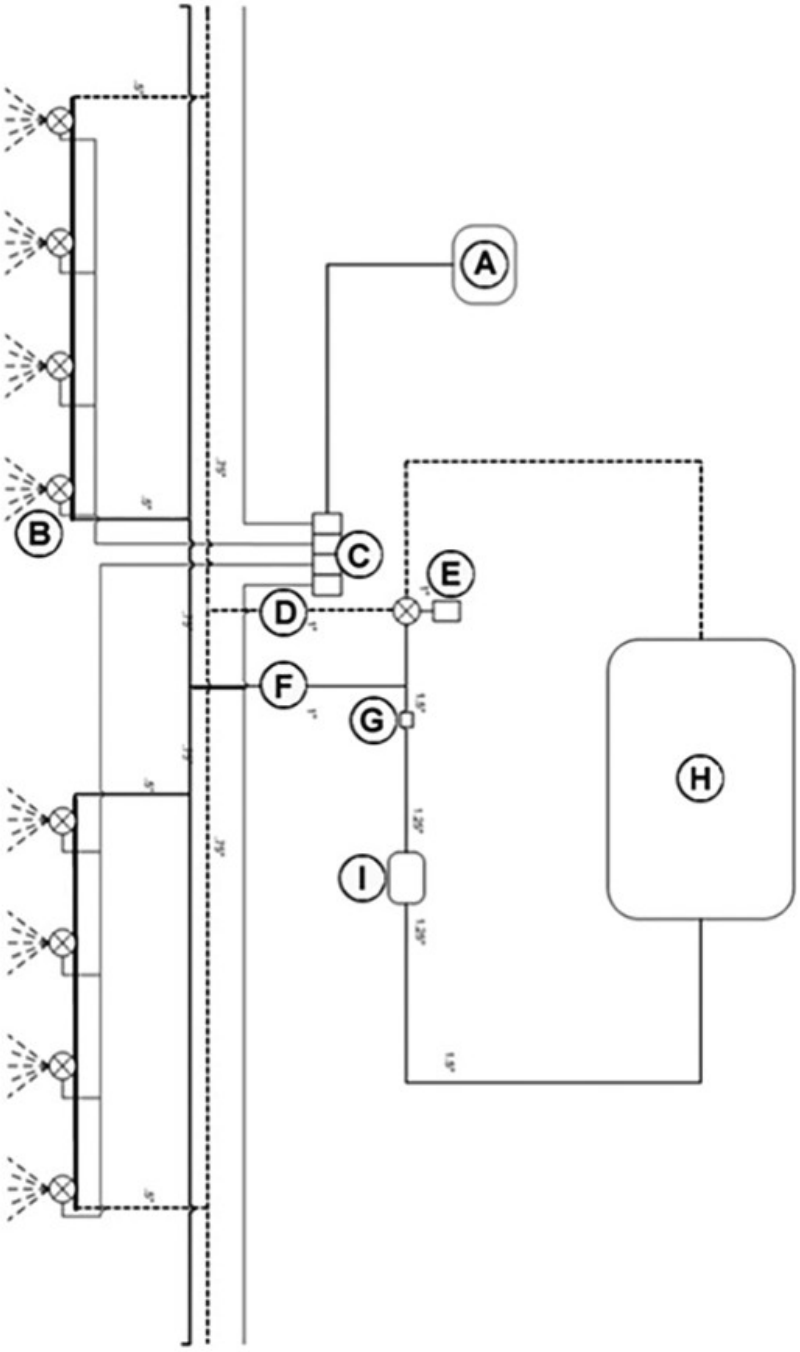


APY65312—UN—31AUG21

1—Nozzle Section (INC)
2—Sprayline
3—Master/Circulation Valve
4—Wash Brush And Reel (if equipped)
5—Wash Brush Connection (if equipped)
6—Pressure Gauge/Spray Gun Connection
7—Pressure Sensor
8—Flow Sensor
9—Rinsing Head in Filling Opening with Tenter (if equipped)
10—Filling/Rinse Valve
11—Non-Return Valve (tank rinse)
12—Solution Pump Pressure Filter
13—Solution Tank Pumpoff Connection with Shutoff Valve (if equipped)
14—Injector Chemical Inductor
15—Basket Strainer
16—Tank Rinsing Nozzle
17—Solution Tank
18—Injector/Return Agitation Valve
19—Inductor Rinse Valve
20—Filling Pump Pressure Filter
21—Filling Pump (also for the autodilute system)
22—Agitation/Tank Rinse Valve
23—Hydro Injectors for Agitation
24—Electric Drain
25—Hand Wash Tank
26—Drain Tap (hand wash tank)
27—Rinse Water Tank (with level indicator)
28—Suction Valve
29—Rinse Water/Solution Tank Valve
30—Non-Return Valve (rinse water tank)
31—Solution Pump
33—Rinse Nozzle Shutoff Valve
34—Inductor Rotating Rinse Nozzle
35—Chemical Inductor Hopper
36—Shutoff Valve (chemical inductor rinse/flush)
37—Solution Tank Filling Valve and Connection
38—Solution Pump Filter Drain Valve
42—Pressure Line
43—Suction Line
44—Return Line
45—Fill Connection with Valve for Closed Chemical Filling System (if equipped)
46—Push Fill Connection (if equipped)
47—Pressure Filter Drain Valve

KWPZAG2,0000783-19-13JAN22

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.

KWPZAG2,0000784-19-13AUG21

Avoid Contact with Chemicals

CAUTION: The enclosed cab does not protect against a chemical exposure, including exposure to pesticides. Refer to the tractors Operator's Manual for further information.

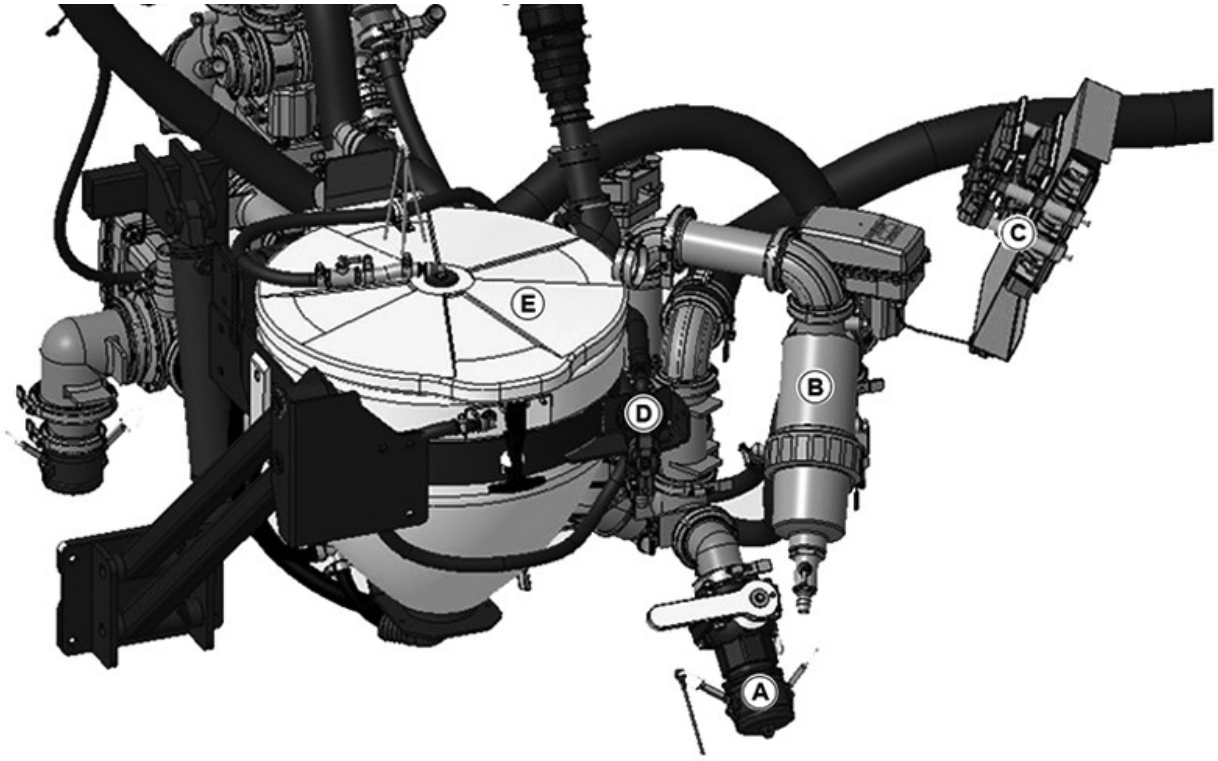
TS220—UN—15APR13

TS272—UN—23AUG88

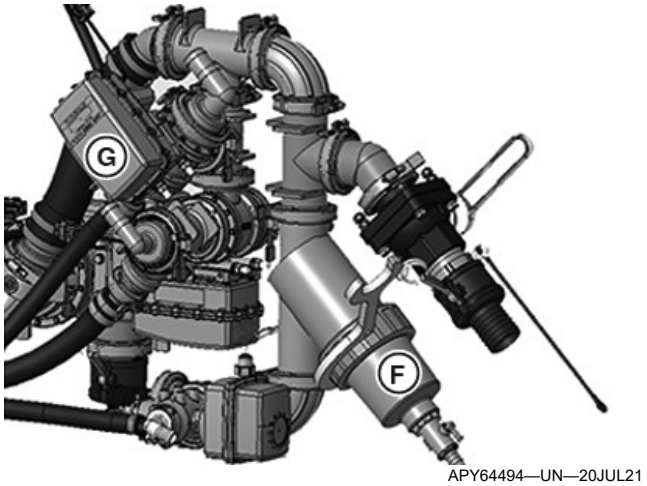
1. When operating in an environment where harmful chemicals are present, wear a long-sleeved shirt, long-legged trousers, shoes, and socks.
2. If a chemical label requires respiratory protection, wear an appropriate respirator in the cab.
3. Wear a personal protective equipment as required by the chemical 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.

KWPZAG2,0000785-19-13JAN22

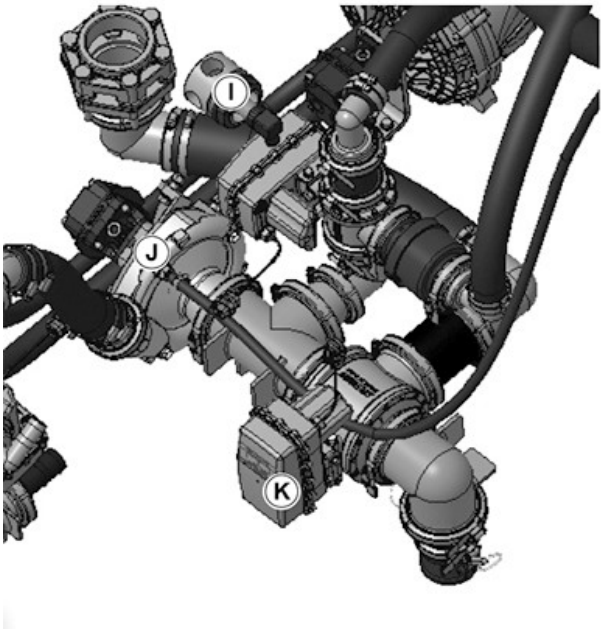
Components of the Solution Command System



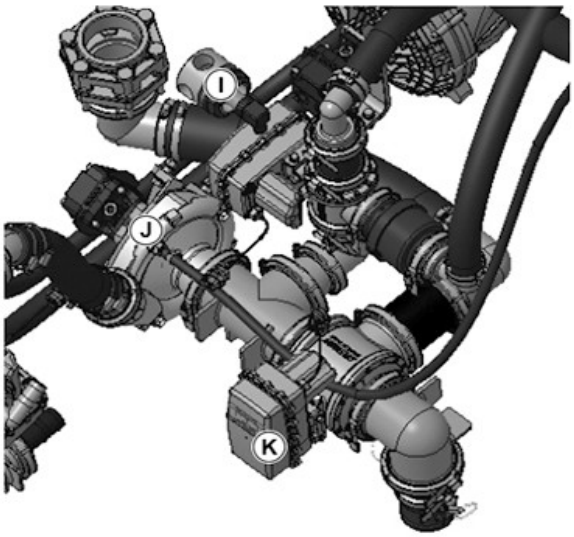
APY64493—UN—20JUL21



APY64494—UN—20JUL21



APY64495—UN—16AUG21



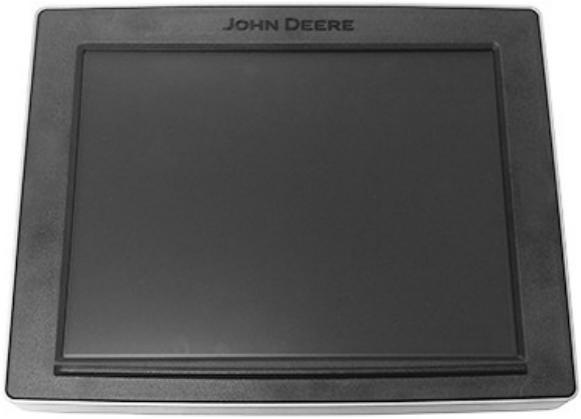
APY64496—UN—16AUG21

A—Filling Inlet
B—Inlet Strainer
C—Controller SPC
D—Eductor Rinse Valve
E—Eductor
F—Pressure Strainer
G—Venturi Selection Valve/Agitation Valve
H—Filling Pump
I—Main Tank Sensor Level
J—Spray Pump
K—Recirculation Valve/Drain Valve

The solution command system is located on the front left of the machine.

KWPZAG2,0000786-19-16AUG21

MSpray Displays and Control



PC23195—UN—18OCT16
John Deere 4640 Universal Display

PC25261—UN—25JAN18
John Deere 4240 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.

The sprayer control system sends the information to the display via the CAN bus between the tractor and the sprayer.

The display must be located in the tractor cab, on the right front corner post.

This is the preferred location for an add-on display, but some tractors already have onboard displays (6R with SDUA) which are at a different location.

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.

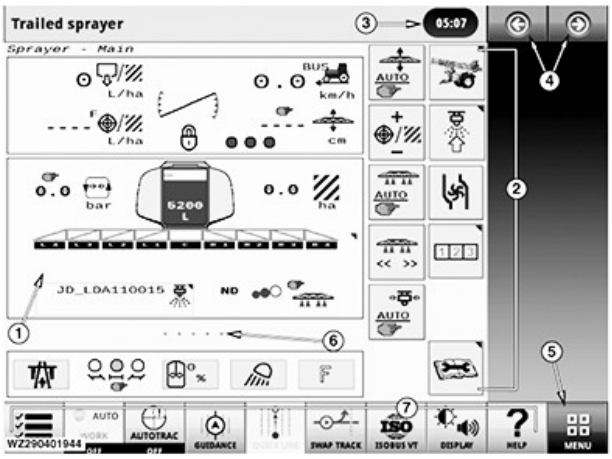
Useful information on the following items is available from http://stellarsupport.deere.com:

- GS4 CommandCenter 4100/4600
- ISOBUS

- Business Pack
- John Deere Section Control
- Measuring Offsets
- Display Documentation

KWPZAG2,0000787-19-13JAN22

General Information

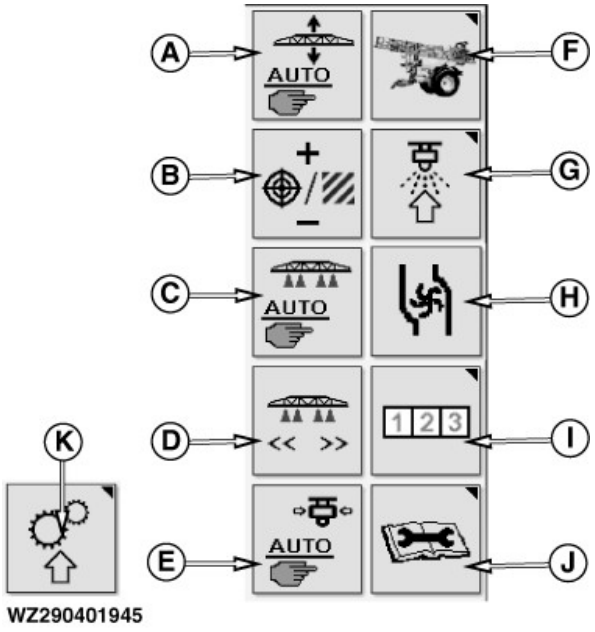


APY64498—UN—16AUG21

1—Display Field
2—Menu Field (Softkeys)
3—Time Indicator
4—Next or Previous Run Page Buttons
5—Application Menu
6—Message Field
7—Run Page Buttons

NOTE: Depending on the installed display in the tractor cabin, the layout of the different screens can differ.

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**.



WZ290401945—UN—23JUN20

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)
[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
[K] — Machine Settings

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

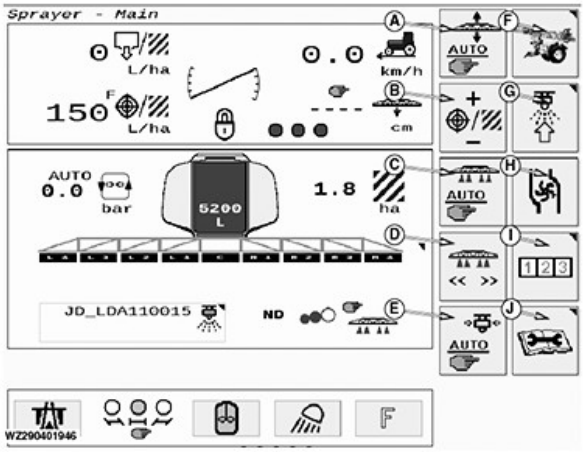
your screens slightly, due to the sprayer configuration, its setup, and the software version.

The application software for the John Deere sprayer is designed for the John Deere Gen4 displays. Compatible (to ISO 11783) ISOBUS displays are also used with this application. 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 tractor is turned ON.*

KWPZAG2,0000788-19-13AUG21

Sprayer—Main



APY64497—UN—16AUG21

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).

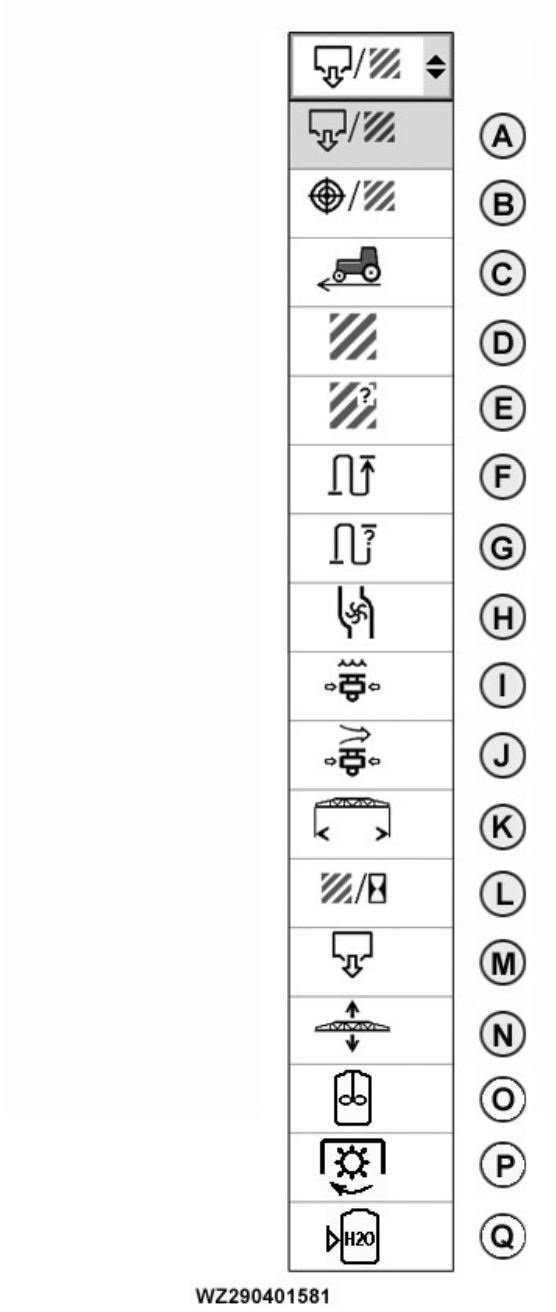
Automatic Section on-off (Option): displays the status of manual or automatic for the function. Pressing softkey [C] toggles the operating state.

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 travelled 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.

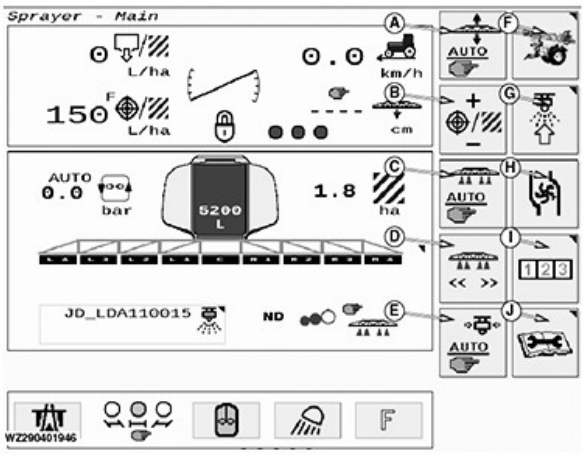
O — **Agitation Operating Pressure**: shows the working pressure of the agitation in bar. Not used on the R700i PowrSpay.

P — **Pump Speed**: displays the solution pump shaft rotation speed in revolutions per minute.

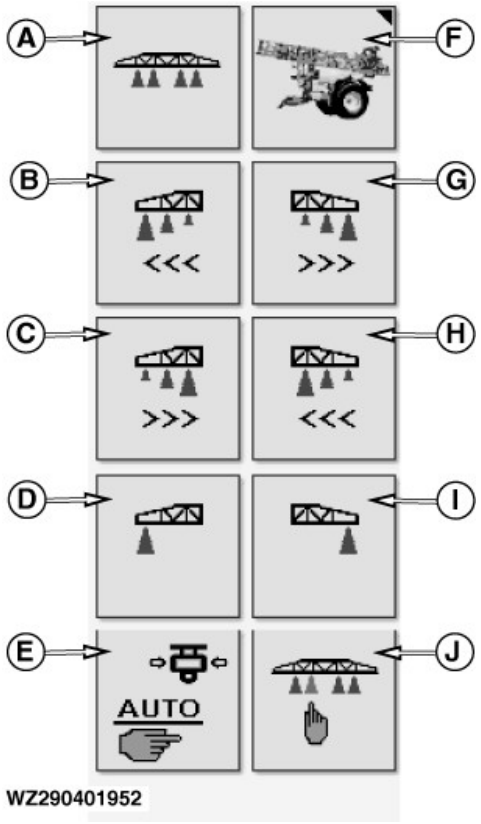
Q — **Rinse Water Tank Contents**: shows the actual contents in liters.

KWPZAG2,0000789-19-13AUG21

Section ON/OFF Softkey Layout



APY64497—UN—16AUG21



WZ290401952—UN—27JUL20

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 .

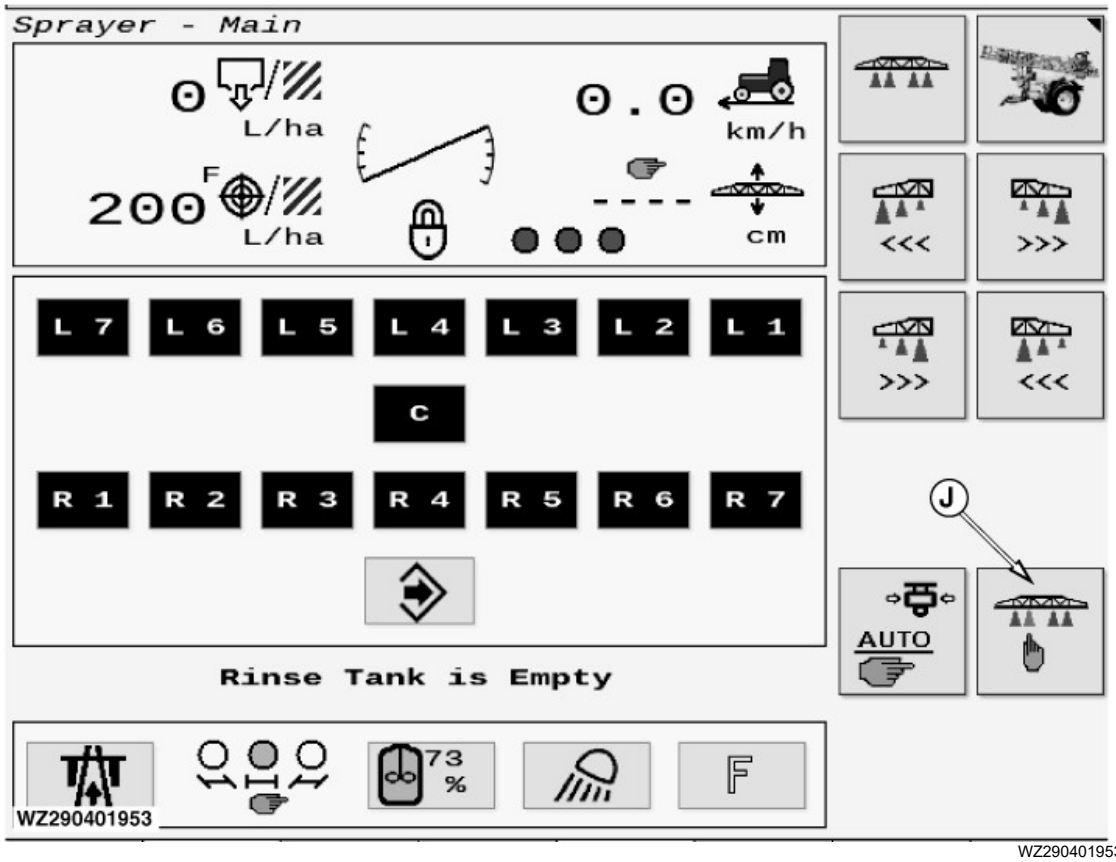
Return to main layout [F]: this softkey returns the user to the main page softkey layout.

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 left to right 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.

Edge Nozzles Select Left [D] or Right [I]: when selected, the required side has a cone present to indicate that it has been selected and sprays as soon as the master valve has been opened. Pressing the softkey again deselects the edge nozzle.

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).



WZ290401953—UN—30JUN20

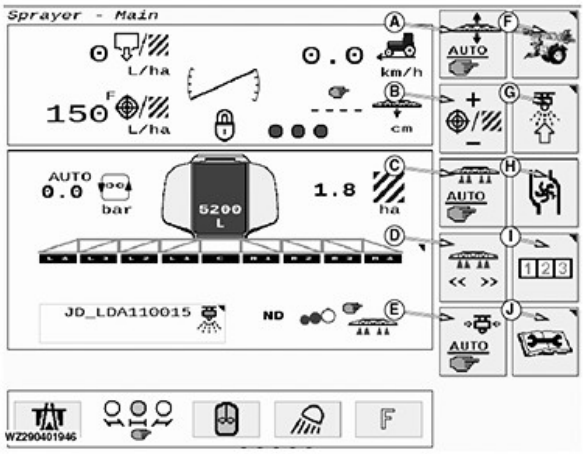
Spray Boom Sections Enable and Disable Popup - Softkey [J]

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.

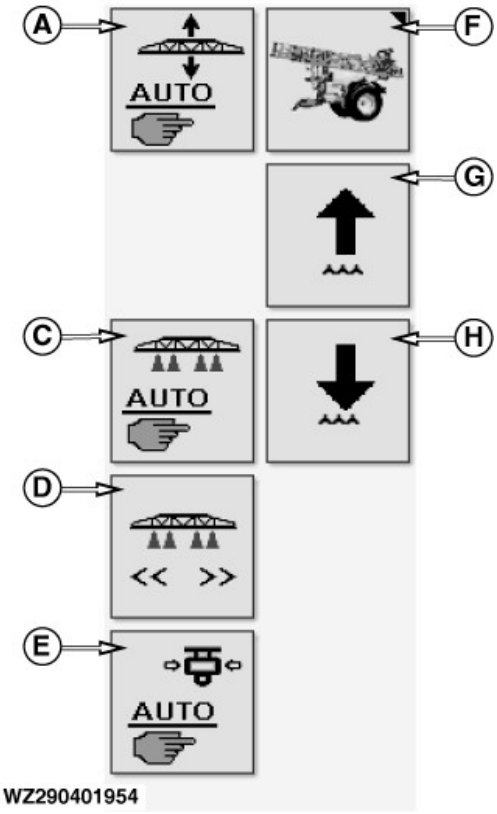
To exit the screen, push the **Enter** key on the bottom center of the popup.

KWPZAG2,000078A-19-13AUG21

Pressure Setting Softkey Layout



APY64497—UN—16AUG21



WZ290401954—UN—27JUL20

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.

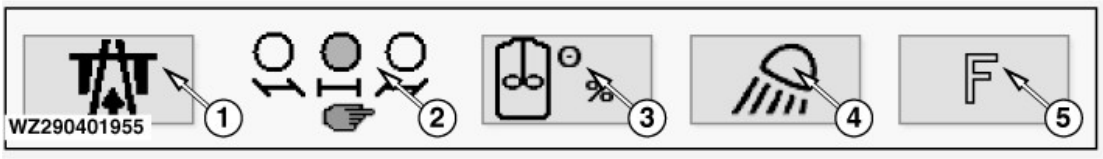
Return to main layout [F]: this softkey returns the user to the main page softkey layout.

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.

KWPZAG2,000078B-19-13AUG21

Agitation, Work Lights and F-Switch



WZ290401955—UN—01JUL20

Agitation, Work Lights and F-Switch

1—Road Drive ON/OFF
2—Steering Status
3—Agitation Status ON/OFF and % of Intensity
4—Work Lights ON/OFF
5—F-Switch (free function) ON/OFF

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.

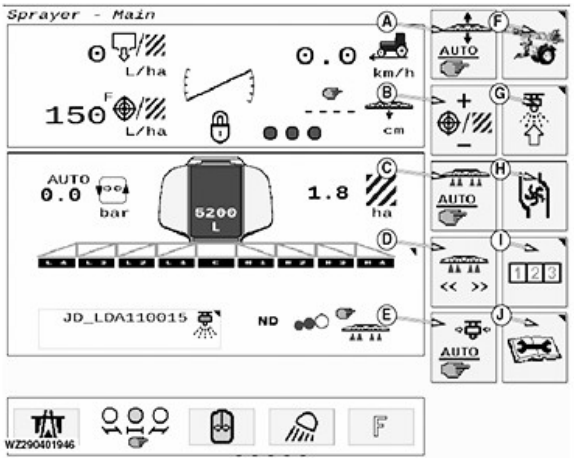
Work lights ON/OFF (4): select work lights located on the boom arms ON or OFF. The button changes color when active. Maximum current for work lights is 10 A.

F-Switch (free function) ON/OFF (5) is for an additional switched function as required by the operator

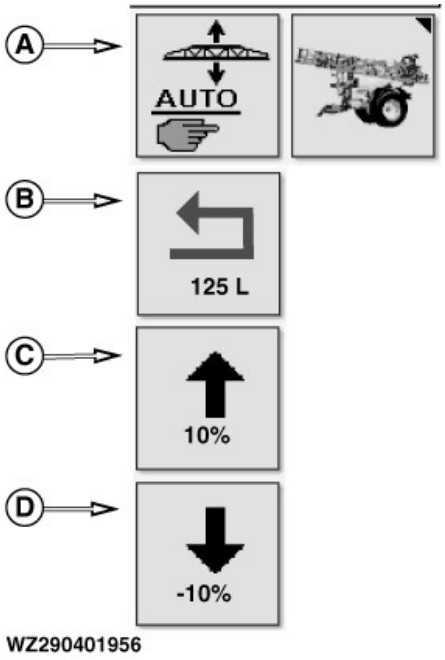
for sprayer operation. The button changes color when active. The connection is on the center frame, near the potentiometer for boom tilt. It has a 2-pole Metri-pack 280 sealed connector (Delphi) and the output is 12 V with a maximum current of 10 A. One use would be for a beacon light which is mounted ex-factory.

KWPZAG2,000078C-19-13AUG21

Boost Mode



APY64499—UN—16AUG21



WZ290401956—UN—01JUL20

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.

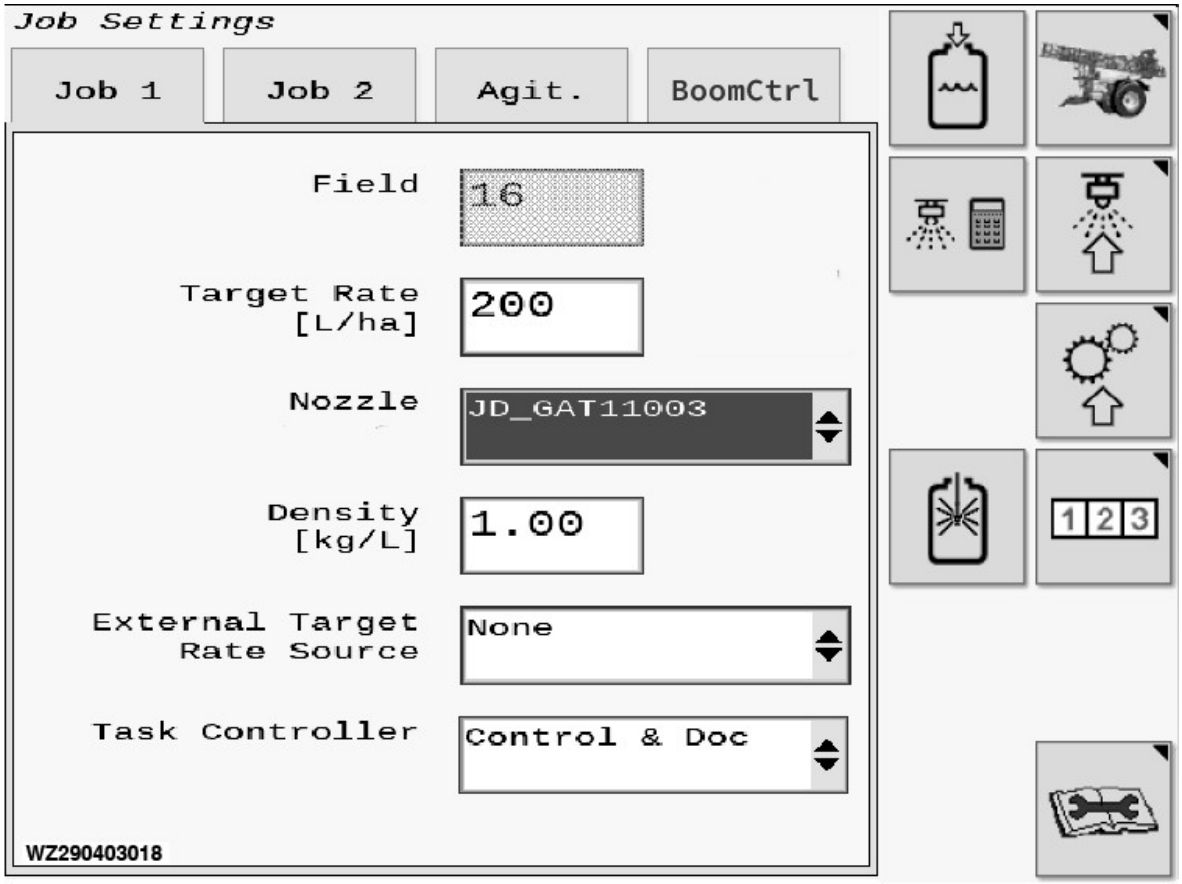
Softkey [C]: **Boost Percentage +10%**: shows the boost percentage which can be changed in +10% steps. Each time the key is pressed, the target rate increases by +10%.

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.

KWPZAG2,000078D-19-13AUG21

Job Settings

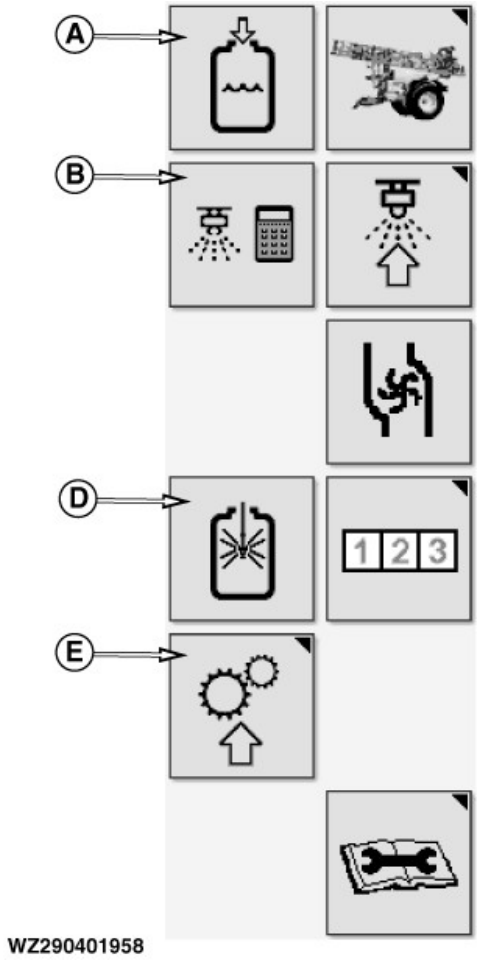


WZ290914078—UN—17DEC20

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



WZ290401958—UN—30JUN20

Job Settings - Softkey Menu Field

Tank Filling: select softkey [A] for tank filling screens.

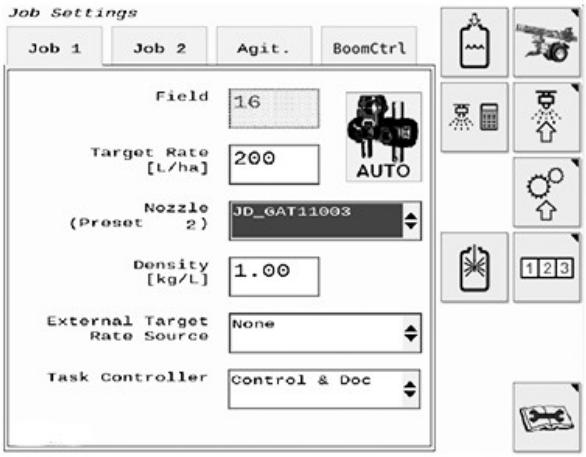
Nozzle Calculator: select softkey [B] to display the nozzle calculator to check all job settings (especially nozzle selection). You can calculate working speed, pressure, nozzle flow rate, and droplet size.

Rinse System: select softkey [D] 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 [E]: 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



APY64500—UN—16AUG21

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

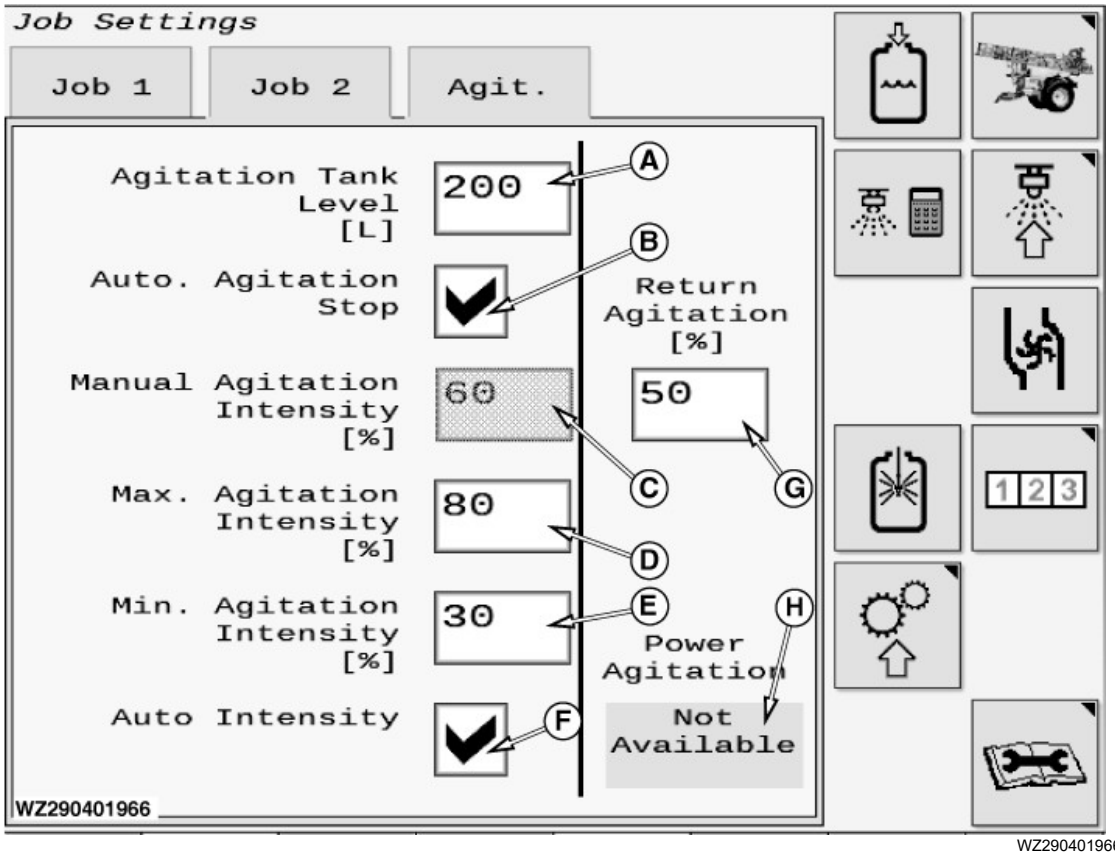
machine is equipped with a flow and a pressure sensor, this value needs to be entered as well, in order to prevent activation of the alarm Flow / Pressure Cross Level Check / Tank Volume(see **Regulation Settings** in the Section **Machine Settings**).

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 (refer to the dealer 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.

Consult the manufacturer of the display if using a display other than a John Deere Gen4 for proper functionality.

Agit. (Agitation Control)



WZ290401966—UN—30JUN20

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.

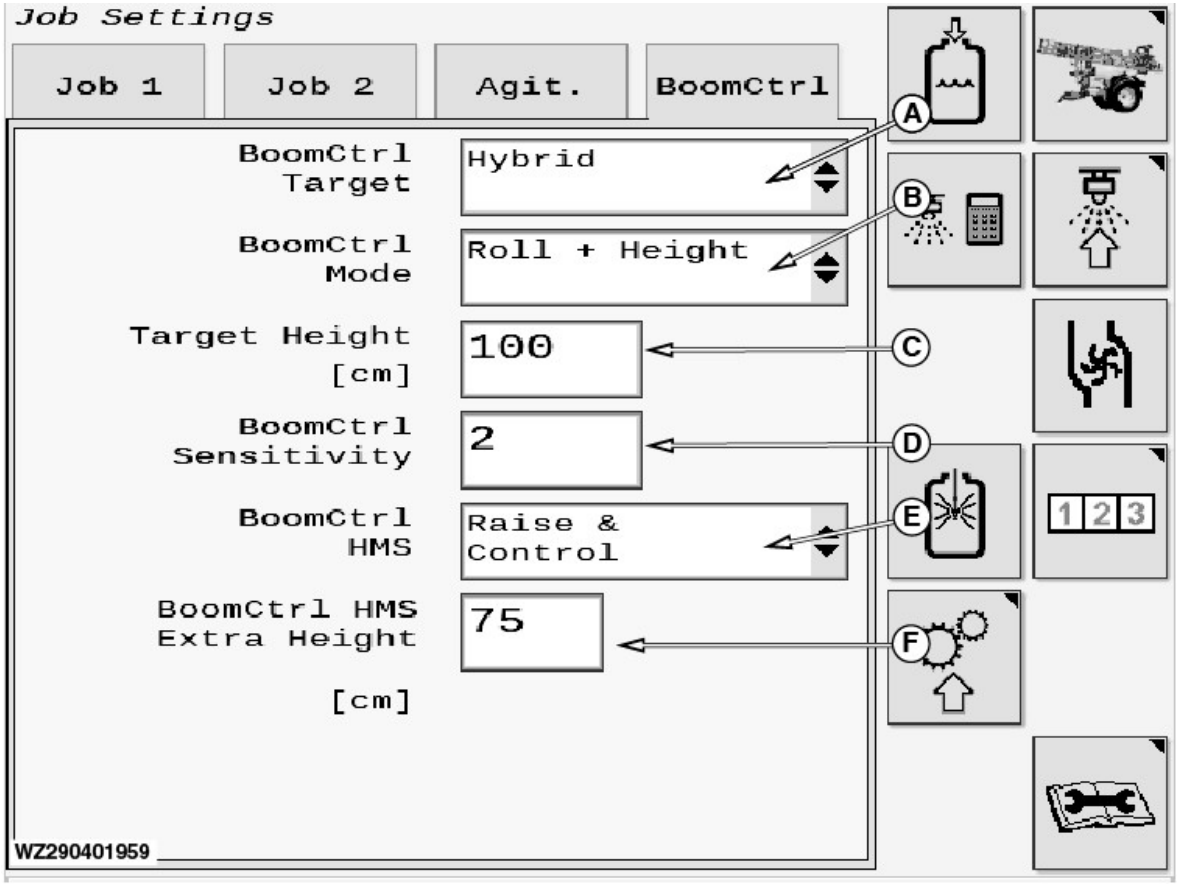
Min. Agitation Intensity [%] (E): set the required intensity as a percentage for the minimum agitation only when in **Auto Intensity** control is used.

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



WZ290401959—UN—20AUG20

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

BoomCtrl Target Modes	
	modes, Crop and Ground, by tracking both simultaneously. If the crop is not continuous, Hybrid tracks the ground and determine a continuous “virtual” 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 & Roll**; 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.

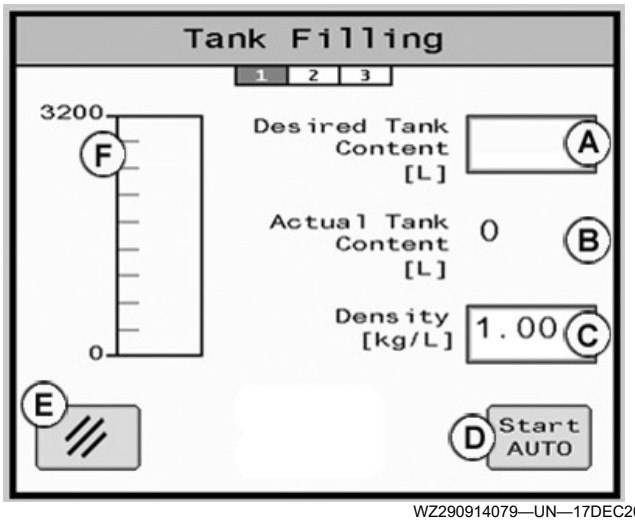
*NOTE: When the **Boom Headland Management** uses **Raise** in a function, the **BoomCtrl HMS Extra Height (F)** Raise Height [cm] is added to the Boom Height [cm].*

KWPZAG2,000078E-19-13AUG21

Tank Filling with Suction Valve

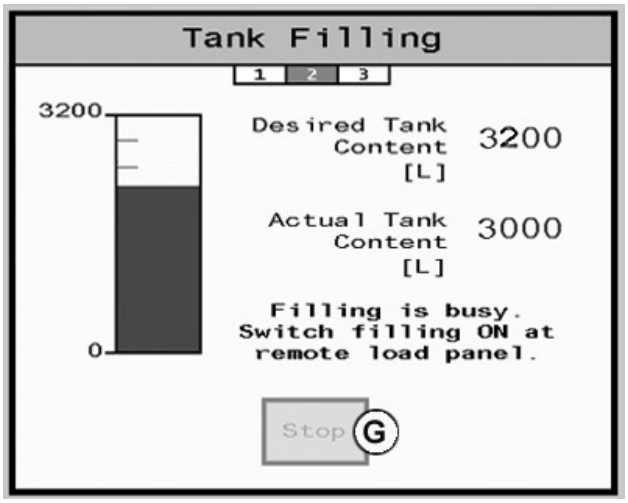
The **Tank Filling** menu can be entered by selecting softkey [A] from **Job Settings**.

Automatic Tank Filling



WZ290914079—UN—17DEC20

***Step 1** Automatic Tank Filling*

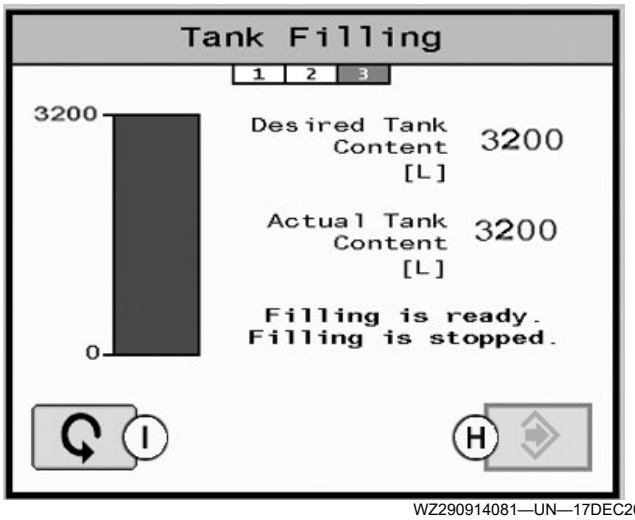


WZ290914080—UN—17DEC20

***Step 2** Automatic Tank Filling*

John Deere TerrainCommand is a trademark of Deere & Company

John Deere TerrainControl is a trademark of Deere & Company



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.

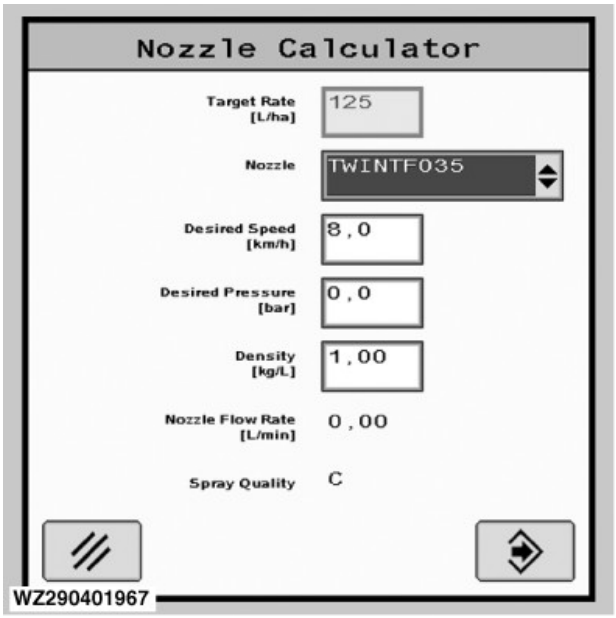
Manual Tank Filling

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.

KWPZAG2,000078F-19-13AUG21

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.

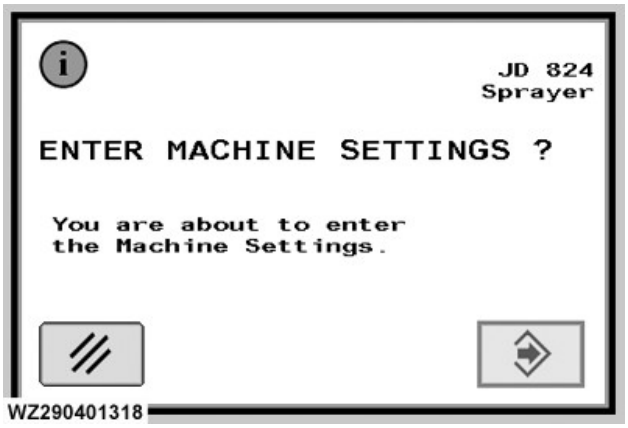
Flow Rate: shows the calculated individual nozzle flow rate in l/min.

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.

KWPZAG2,0000790-19-13AUG21

Machine Settings



WZ290401318—19—22SEP06

Machine Settings - Confirmation

NOTE: The machine settings cannot be entered when:

- *The master valve is open.*
- *The machine is in motion.*

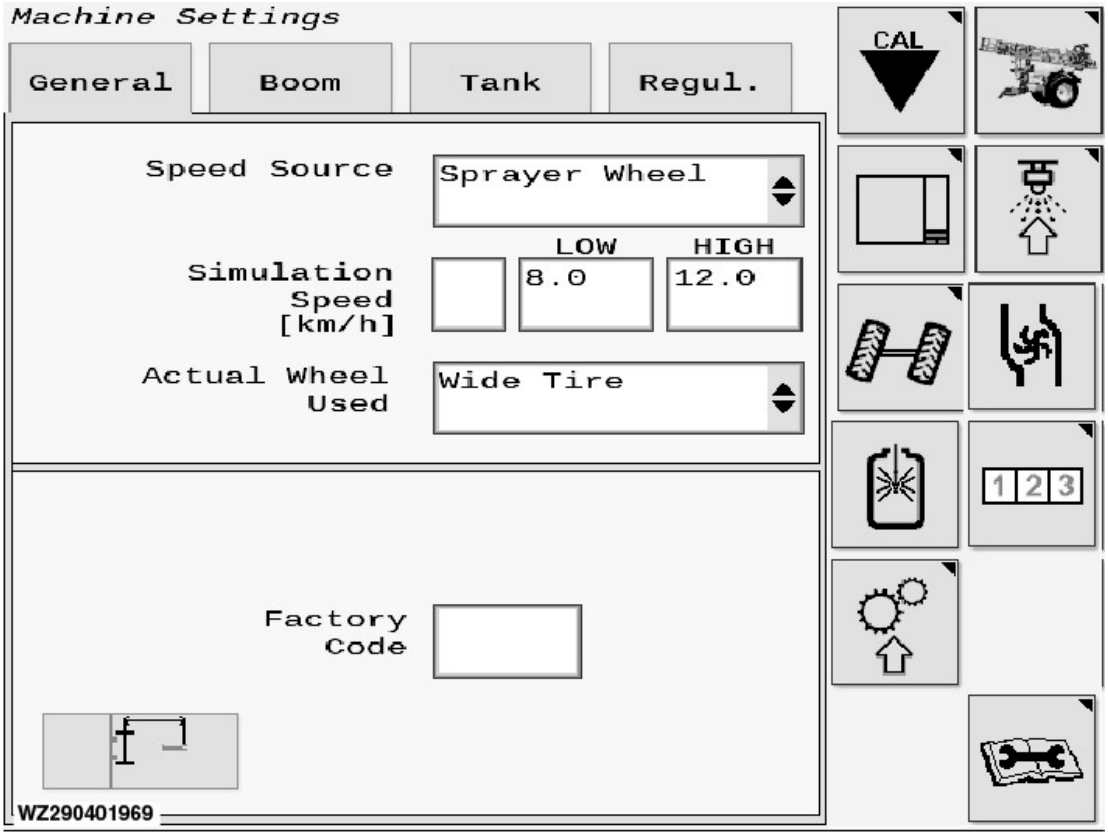
To enter **Machine Settings** select softkey [E]. A confirmation screen will appear, press enter to go into the menu. The following screen consists of four tabs: **General** settings, **Boom** settings, **Tank** settings and **Regulation** settings. In addition two new softkeys are present:

Softkey [A] CAL: Sensor Calibration.

Softkey [B]: Main Page Layout.

KWPZAG2,0000791-19-13AUG21

General Settings



WZ290401969—UN—08JUL20

General settings tab can be found in **Machine Settings**.

Speed Source: there are four options: GPS, Sprayer Wheel, Tractor Bus and the Tractor 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.

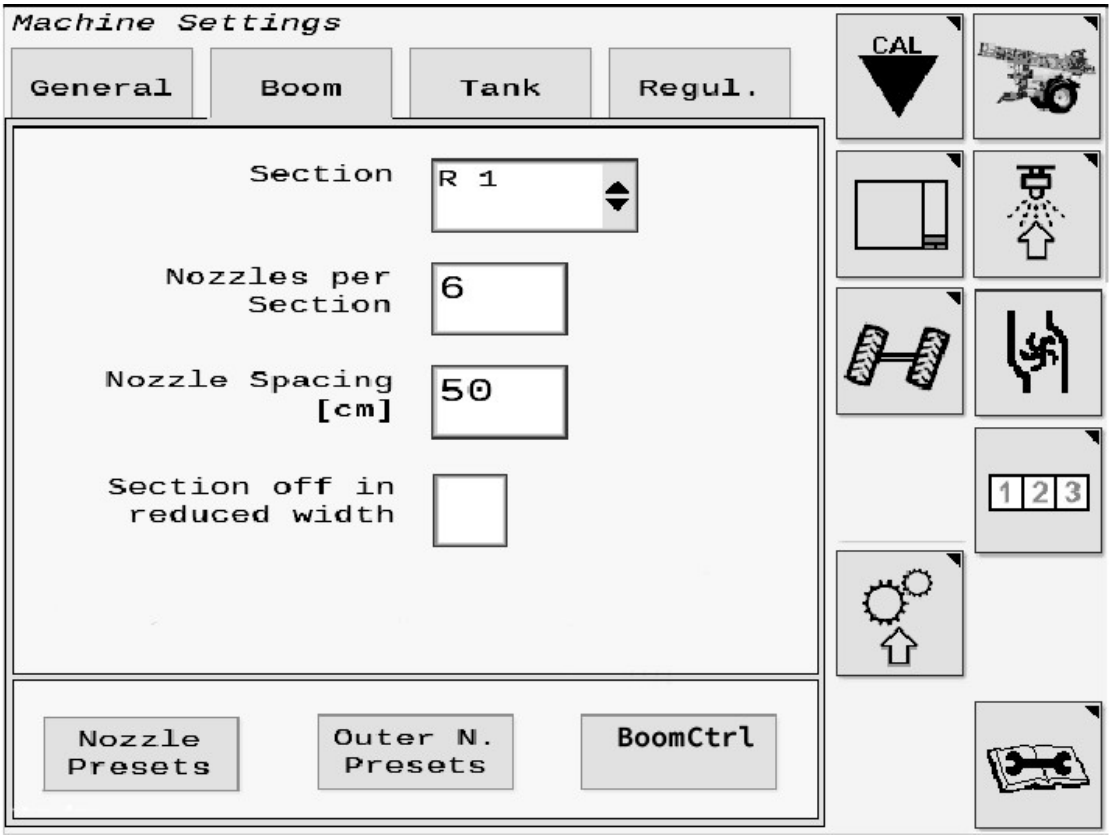
Actual Wheel Used: use the drop down list to toggle between two pulse values for the wheel sensor, indicated as **Narrow Tire** and **Wide Tire**. For each selection there is a corresponding wheel calibration pulse number. This allows quick selection of another set of wheels.

IMPORTANT: Contact your dealer or repair shop to access the factory settings.

Factory Code: this can only be accessed with an authorized code.

KWPZAG2,0000792-19-03SEP21

Boom Settings



WZ290914083—UN—17DEC20

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.

KWPZAG2,0000793-19-13AUG21

Nozzle Presets

WZ290401971—UN—30JUN20

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.

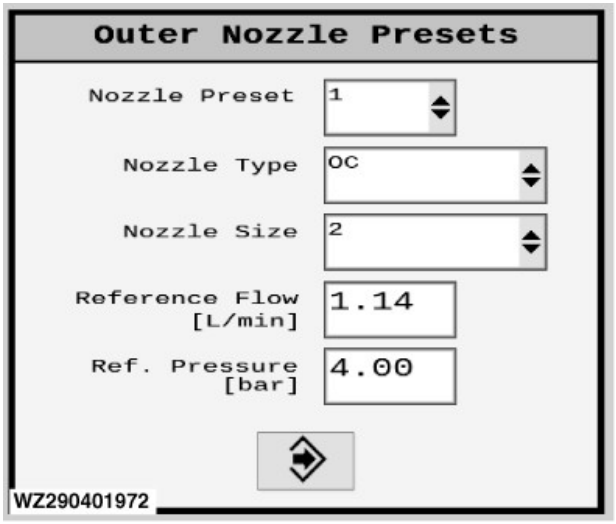
Enter: stores the values for the nozzle preset number, then returns to the **Job Settings** menu.

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).

KWPZAG2,0000794-19-13AUG21

Outer Nozzle Presets



WZ290401972—UN—30JUN20

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.

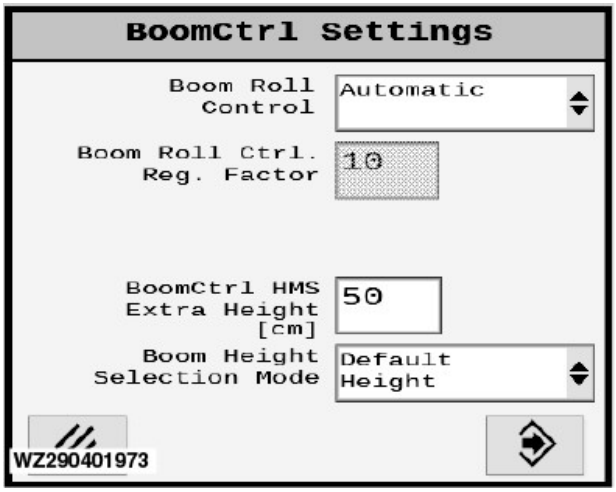
Reference Flow; enter the nozzle flow rate (in l/min) for the reference pressure using the numeric keypad. When the pressure sensor is calibrated, the nozzle flow rate (also for new nozzles!) has to be calibrated.

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.

KWPZAG2,0000795-19-13AUG21

BoomCtrl



WZ290401973—UN—28AUG20

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.

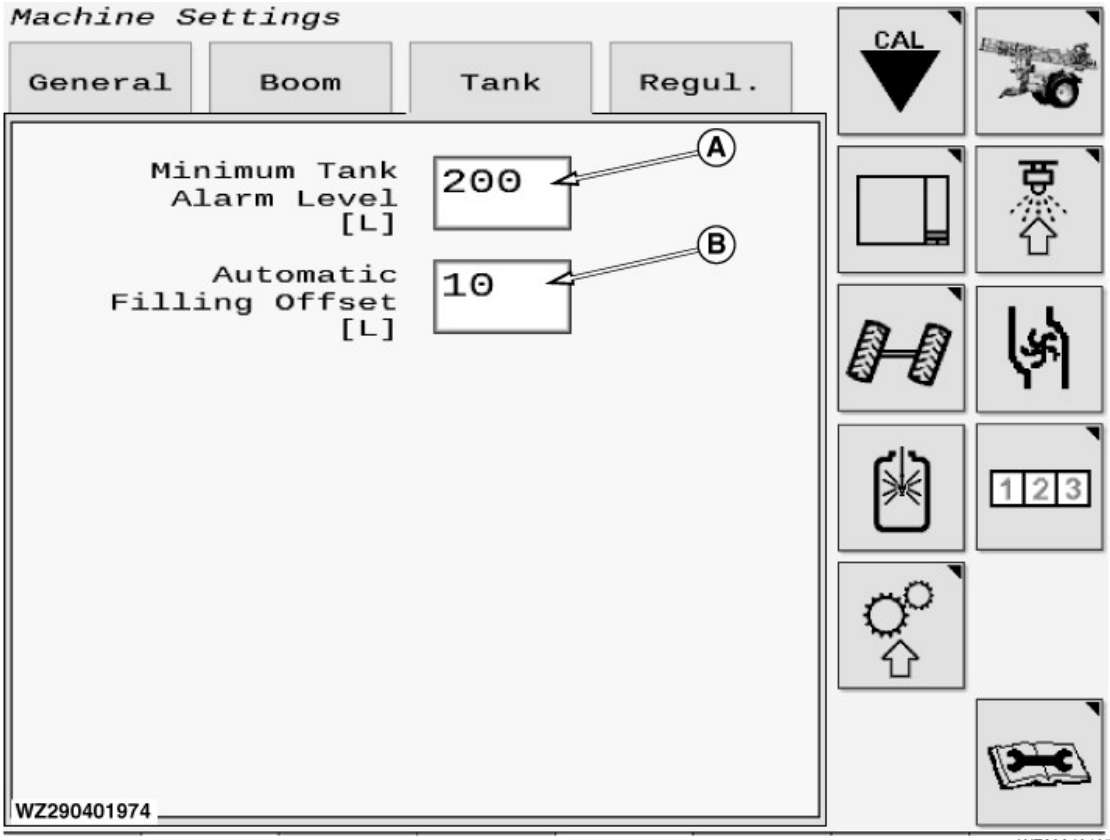
- **Boom Roll** button: the boom roll will be manually controlled and adjusted via the boom roll button on the Multi-Function Control lever (see **Boom Roll Correction** in section **Operation of the Machine**). Boom roll indicator on **Sprayer - Main** shows boom roll preset.

KWPZAG2,0000796-19-13AUG21

John Deere TerrainCommand is a trademark of Deere & Company

John Deere TerrainControl is a trademark of Deere & Company

Tank Settings



WZ290401974—UN—30JUN20

A—Minimum Tank Alarm Level

B—Automatic Filling Offset

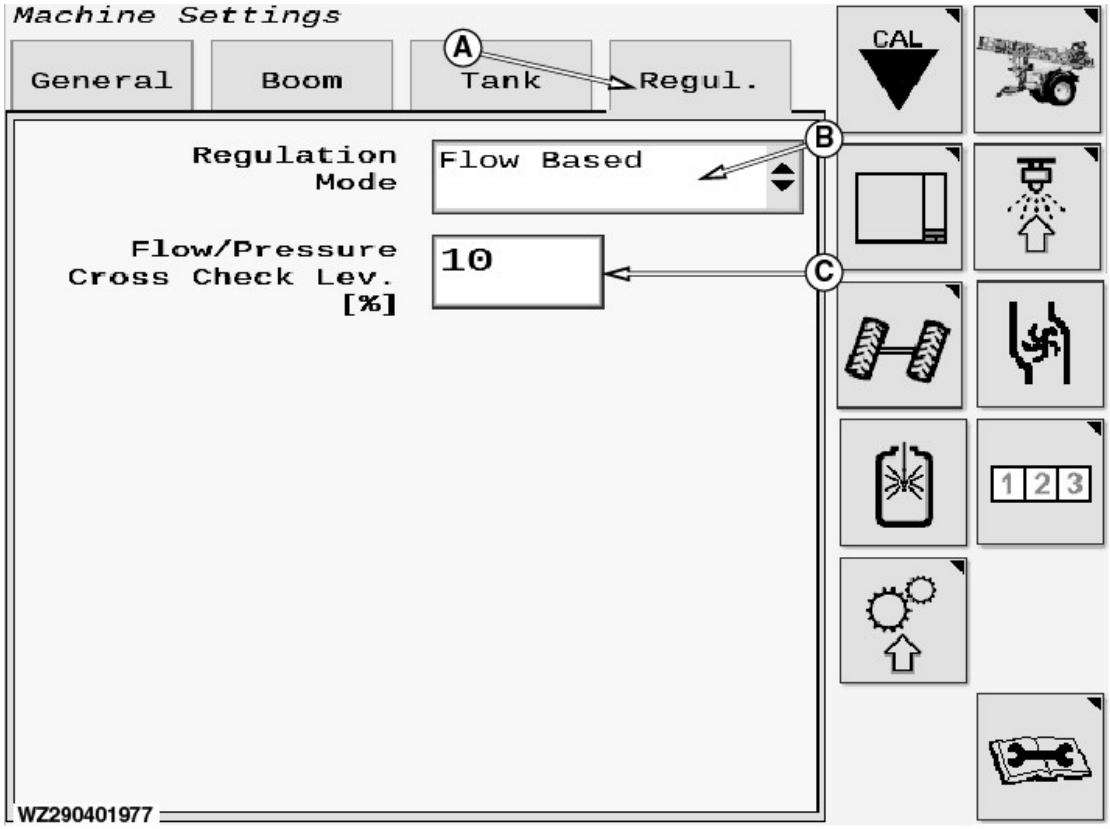
Tank Settings tab can be found in **Machine Settings**.

Minimum Tank Alarm Level: enter the required tank level (in liters) at which a **Tank Almost Empty** alarm must be generated during spraying.

Automatic Filling Offset: the filling valve is closed just before the desired tank level dependent on the value (in liters) set in this field.

KWPZAG2,0000797-19-13AUG21

Regulation Settings



WZ290401977—UN—20AUG20

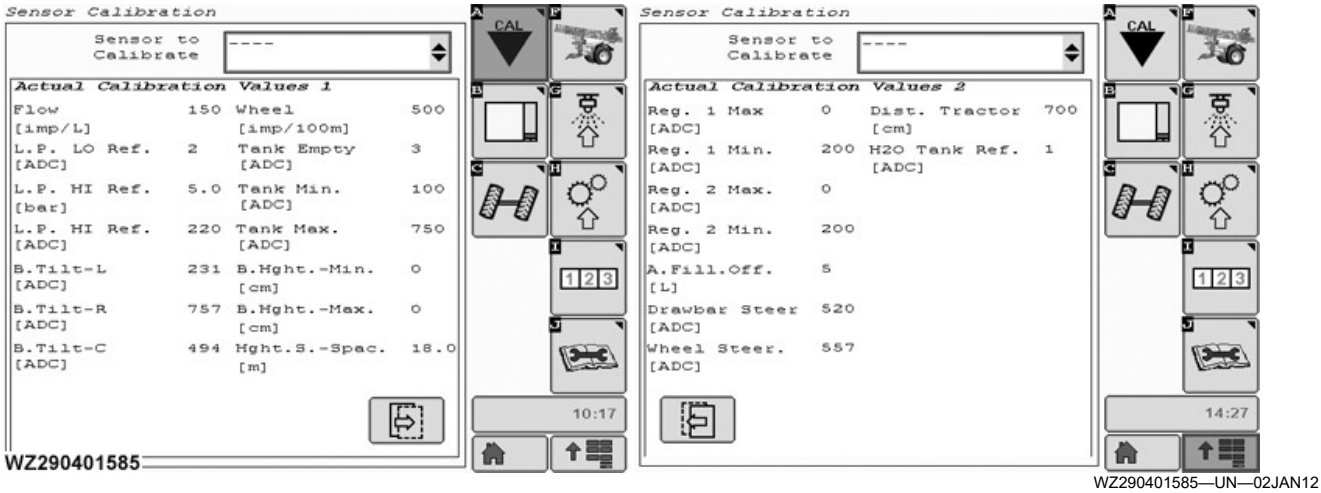
Regulation Settings tab (A) can be found in **Machine Settings** [H].

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 flowmeter 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.

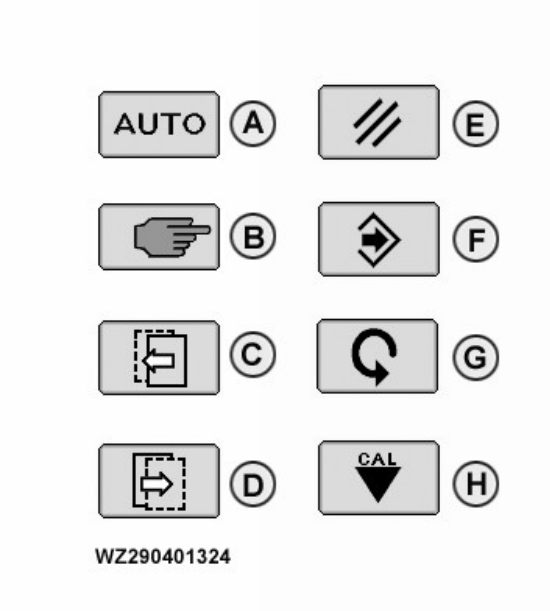
KWPZAG2,0000798-19-13AUG21

Calibration



WZ290401585—UN—02JAN12

Sensor Calibration - Screen 1 & 2



WZ290401324—UN—11OCT06

Buttons used in Calibration

A—Automatic Calibration
B—Manual Calibration
C—Back
D—Forward
E—Cancel
F—Enter
G—Restart
H—Calibrate

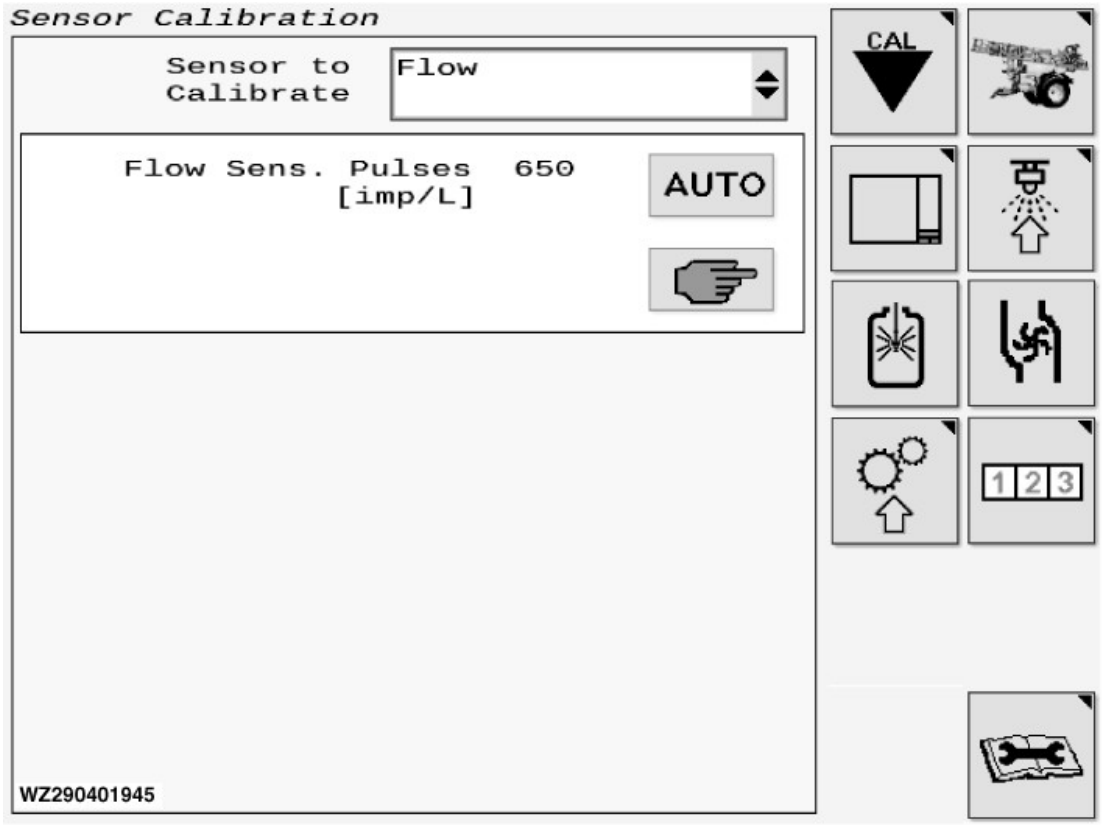
The **Sensor Calibration** menu is entered via softkey [A] from **Machine Settings**. All actual calibration values (2 screens of values) of embodied sensors will be displayed here. Press the next button to see the next screen.

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.

KWPZAG2,000079A-19-13AUG21

Flow Calibration



WZ290401979—UN—01JUL20

Sensor Calibration - Flow

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].

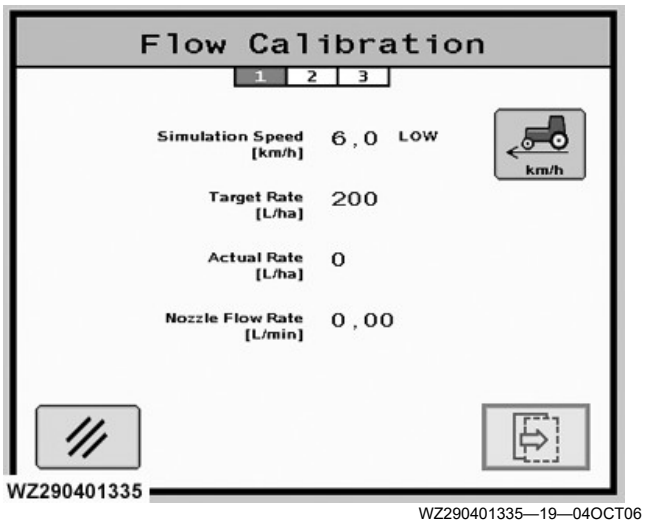
Manual: to change the **Flow Sensor Pulses** input a new value using the keypad. Press **Enter** to confirm setting.

Automatic: will start a three step process to calibrate the sensor.

IMPORTANT: Recalibrate the Flow Sensor at least once a year for accuracy.

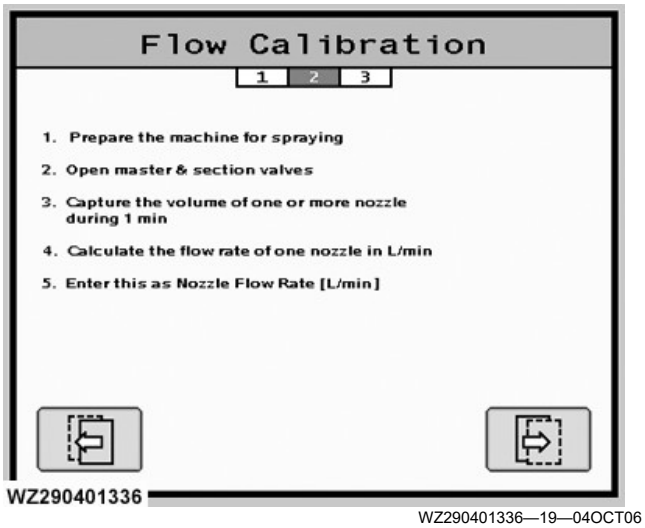
NOTE: Flow sensor pulses, the sprayer has a normal value of between 140 to 170 pules/L.

Automatic - Flow Cal.



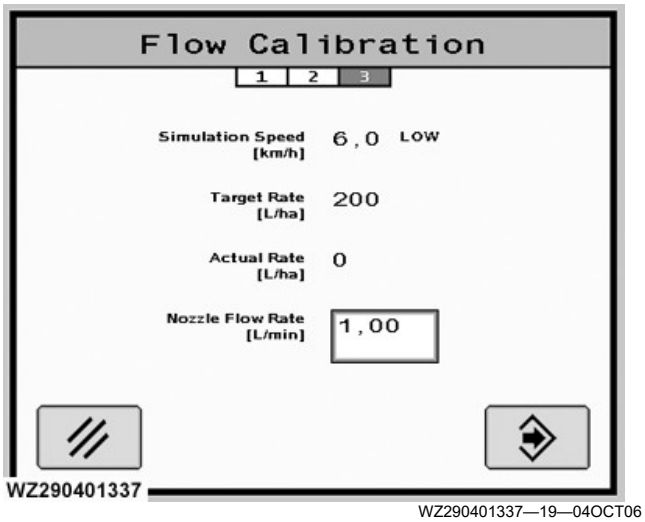
WZ290401335—19—04OCT06

Automatic - Flow Cal. Step 1



WZ290401336—19—04OCT06

Automatic - Flow Cal. Step 2



WZ290401337—19—04OCT06

Automatic - Flow Cal. Step 3

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.

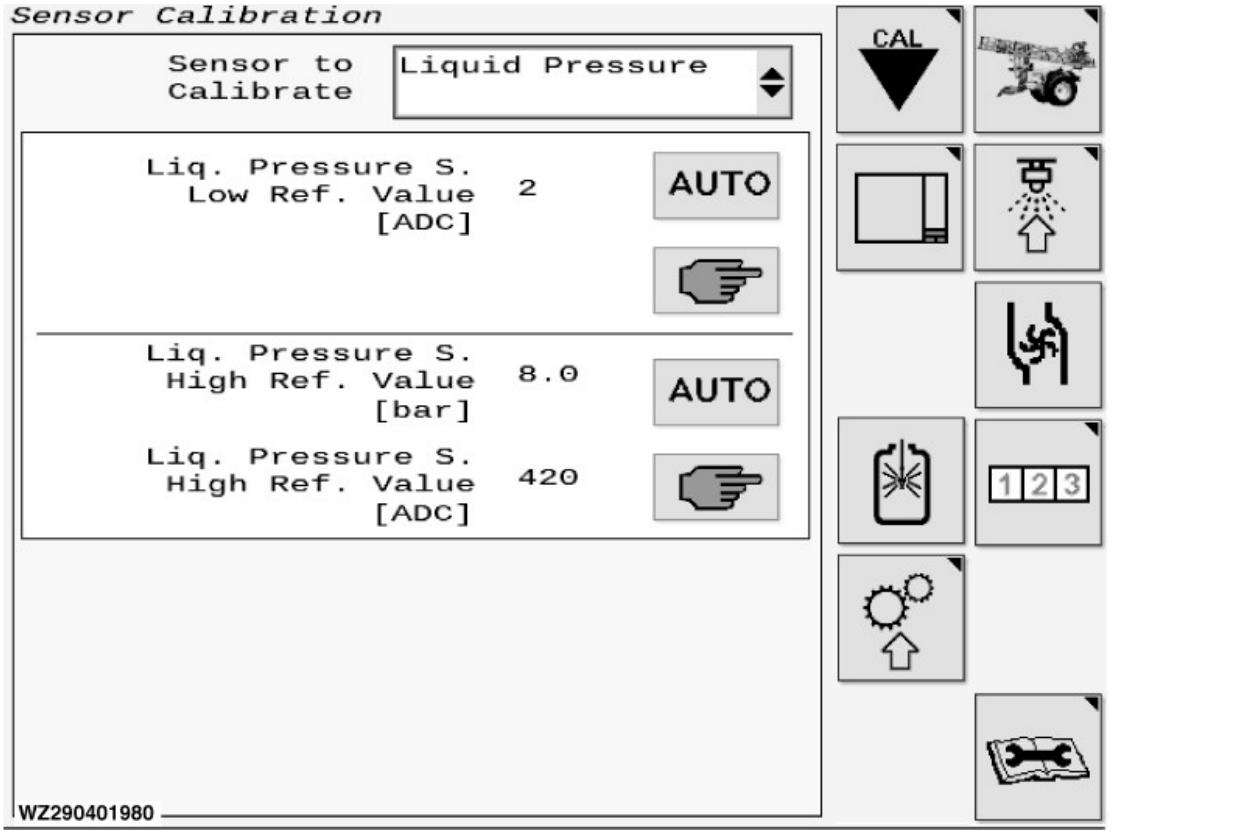
Nozzle Flow Rate: enter the measured flow rate during the calibration.

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 centre 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) x 155 = 160 pulses per liter. The screen will return to the main calibration page, where the details can be checked.

KWPZAG2,000079B-19-13AUG21

Liquid Pressure Calibration



WZ290401980—UN—01JUL20

Sensor Calibration - Liquid Pressure

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.

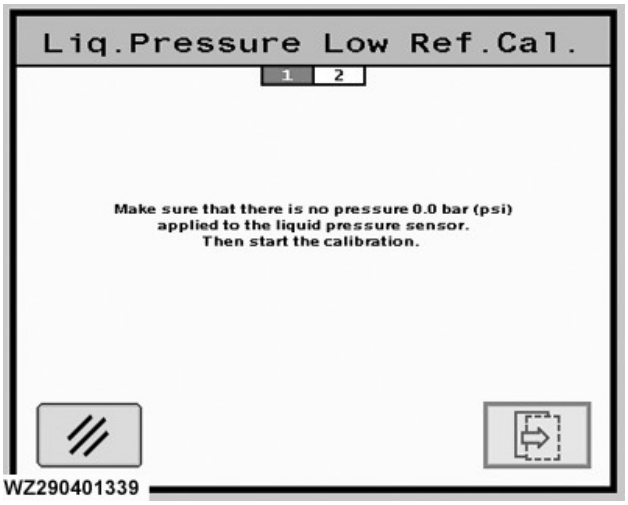
Automatic - Liq. Pressure Sensor Low Reference Value [ADC]: enter the menu to calibrate the reference value of the pressure sensor.

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”.

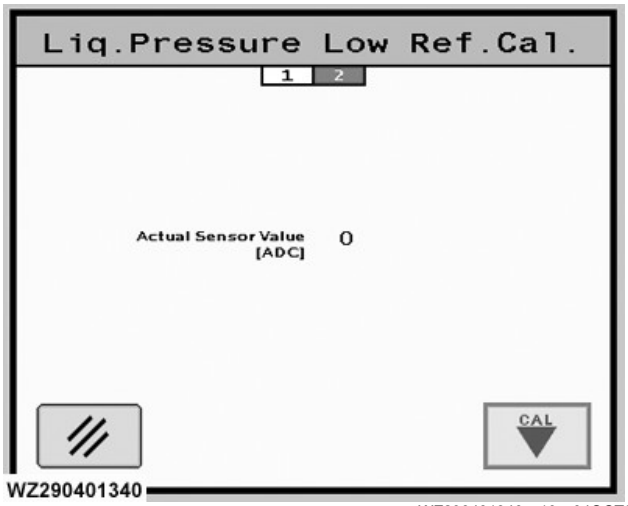
Manual - Liq. Pressure Sensor High Reference Value [bar] and [ADC]: is the maximum spraying pressure which the pressure sensor uses as a reference value. The corresponding ADC value is ascertained by using the Automatic Liquid Pressure Sensor High Reference calibration.

Automatic - Liq. Pressure Sensor Low Reference Value



WZ290401339—19—04OCT06

Automatic - Low Reference Step 1



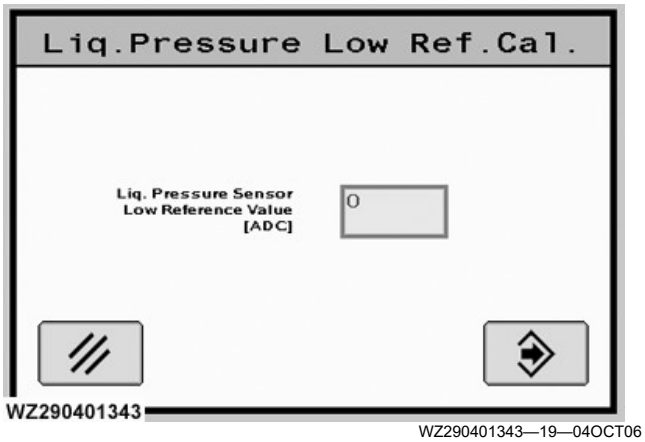
WZ290401340—19—04OCT06

Automatic - Low Reference Step 2

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



WZ290401343—19—04OCT06

Manual - Low Reference

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

WZ290401515

WZ290401515—UN—27JUL10

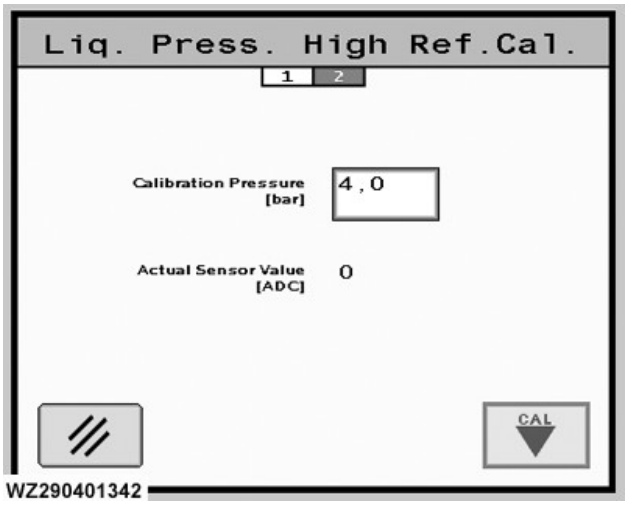
For the following calibrations, **Automatic - Liq. Pressure Sensor High Reference Value** and **Manual - Liq. Pressure Sensor High Reference Value**, softkeys [G] (increase regulator pressure) and softkey [H] (decrease regulator pressure) are used to adjust the pressure regulator so the liquid pressure 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

WZ290401341—19—04OCT06

Automatic - High Reference Step 1



WZ290401342—19—04OCT06

Automatic - High Reference Step 2

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:

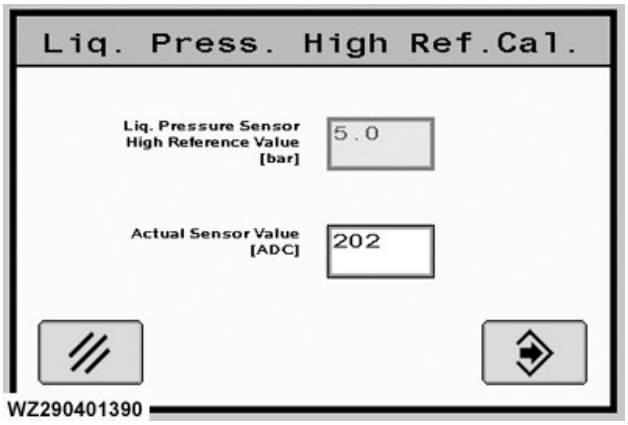
- Choose the pressure which is used the most for spraying. For example, 5 bar
- Enter 5 bar as the Calibration Pressure into the display field on the screen. 5 bar is used to calibrate the maximum value for the pressure sensor .

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



WZ290401390—19—10OCT06

Manual - High Ref. Cal.

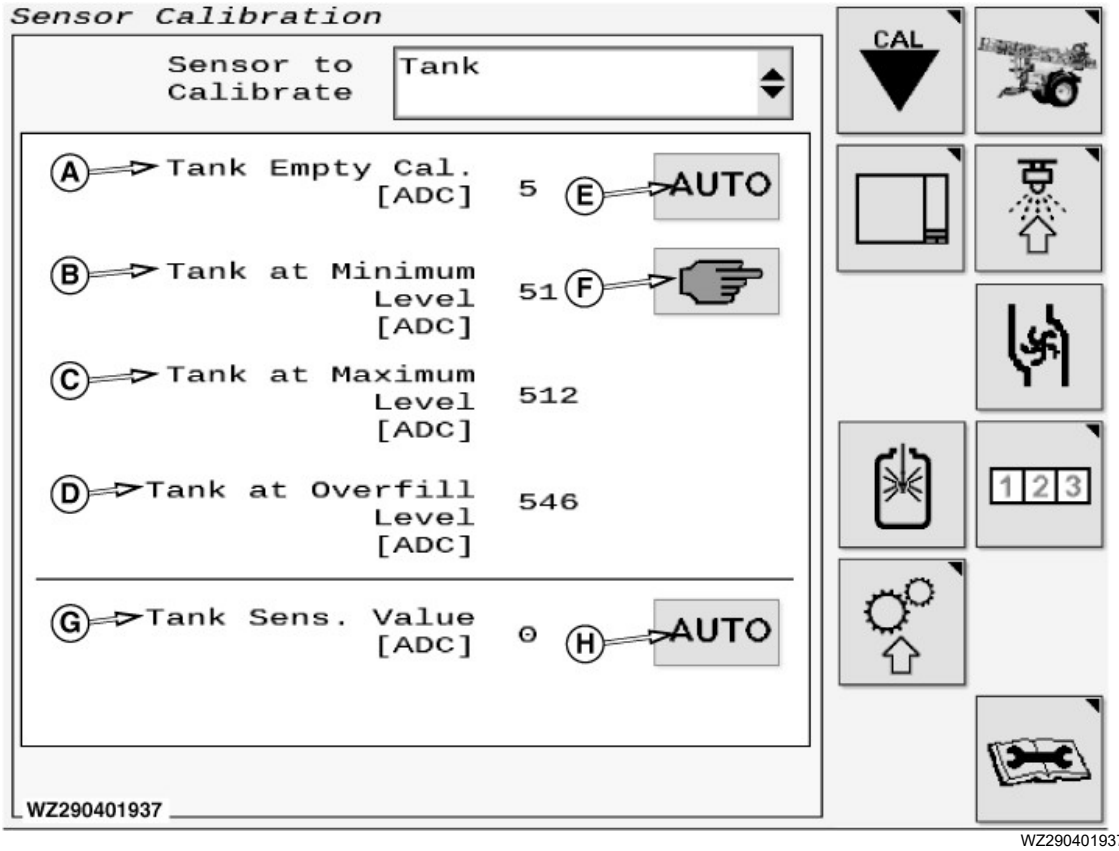
This is the maximum pressure which can be measured by the pressure sensor (corresponding with the maximum ADC value). This value must be calibrated.

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.

KWPZAG2,000079C-19-13AUG21

Tank Sensor Calibration



WZ290401937—UN—01JUL20

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**

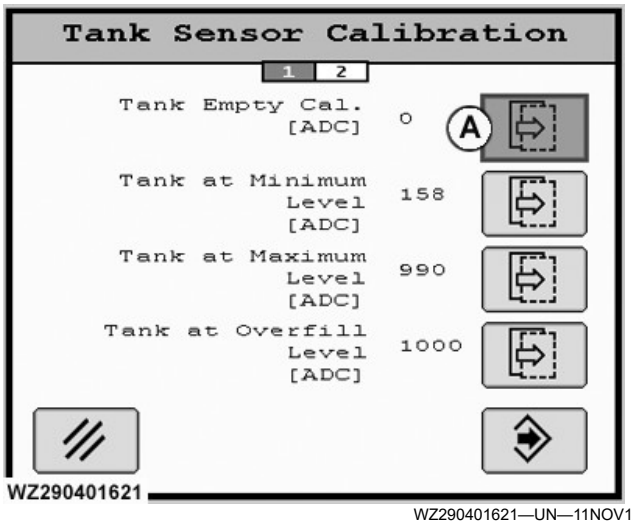
and **Tank at Overfill Level**. Choose the **Next** button to select which.

(F) Manual button: displays a screen with four fields. It is preferred that each be calibrated automatically, apart from **Maximum Tank Volume [l]**.

(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.



WZ290401621—UN—11NOV12

Tank Sensor - Step 1

WZ290401622—UN—09NOV12

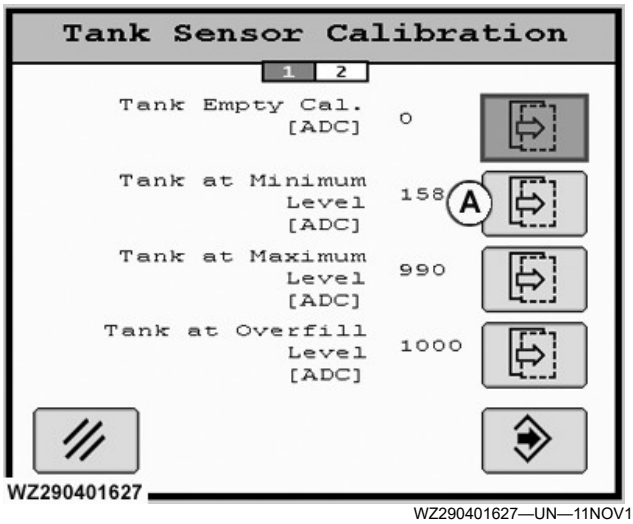
Tank Empty - Step 2

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



WZ290401627—UN—11NOV12

Tank Sensor - Step 1

WZ290401623—UN—11AUG16

Tank Minimum - Step 2, ***Use 40 Liters for the Calibration of R700i***

A—Tank at Minimum

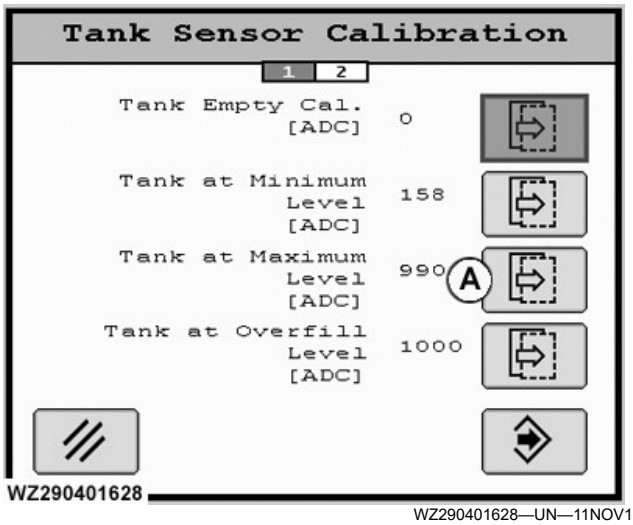
In this calibration step of the tank level sensor, the tank must be filled to a minimum level, determined by the factory and set in **Factory Settings**. **The Sprayer Control System** will use linear interpolation to calculate the current tank level when it is below this level. Above this level the 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



WZ290401628—UN—11NOV12

Tank Sensor - Step 1

WZ290401624—UN—09NOV12

Tank Maximum - Step 2

A—Tank at Maximum

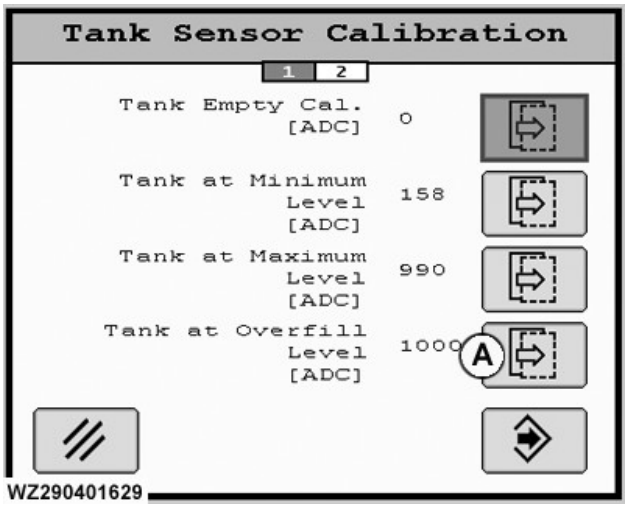
The calibration of the tank level sensor at maximum (level is factory set in Factory Settings) needs to be done as follows:

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 R732i
   - *4000 L for the R740i

   * 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



WZ290401629—UN—11NOV12

Tank Sensor - Step 1

WZ290401625—UN—09NOV12

Tank at Overfill Level - Step 2

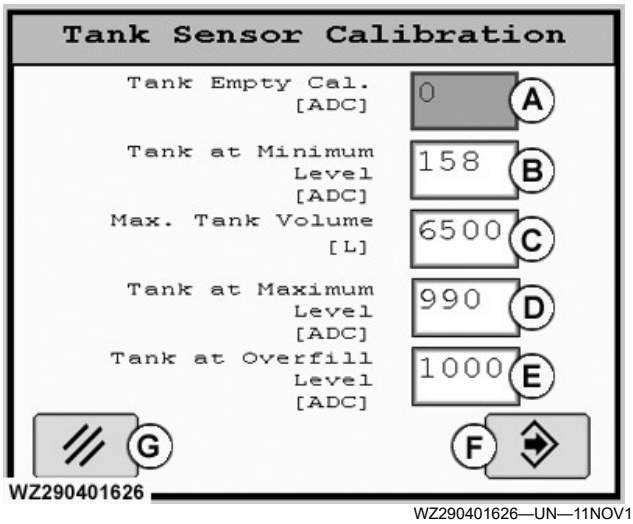
A—Tank at Overfill Level

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



WZ290401626—UN—11NOV12

Tank Sensor Calibration - Manual

A—Tank Empty Cal. [ADC]
B—Tank at Minimum Level [ADC]
C—Maximum Tank Volume [L]
D—Tank at Maximum Level [ADC]
E—Tank at Overfill Level [ADC]
F—Enter Button
G—Cancel Button

(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.

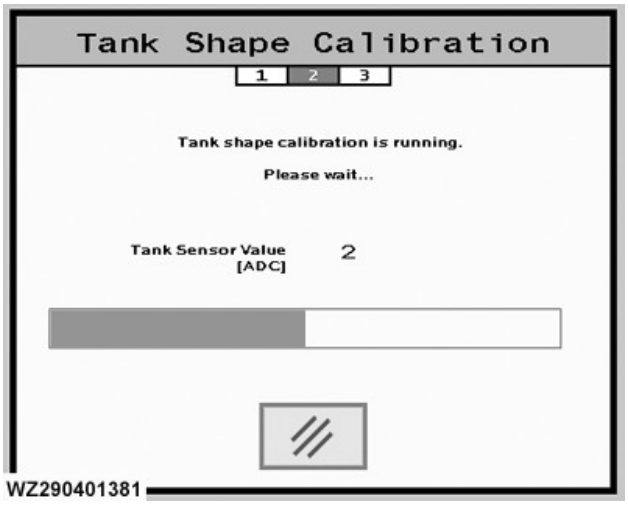
(E) Tank at Overfill Level [ADC]: The function of the overfill level is to safeguard the tank from spilling over should an anomaly occur in the automatic filling settings or filling process. This function is not shown in the illustration above. This value is set when the tank shape is calibrated.

When the values have been set using the keypad press the **Enter** (F) button to save the information.

Automatic - Tank Shape Calibration

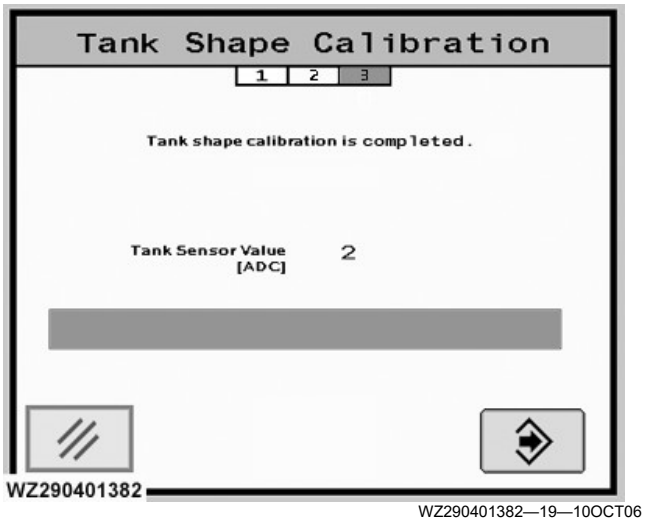
WZ290700097—19—26MAR10

*Tank Shape Calibration - Step 1, **Use 3200 Liters for R732i, or 4000 Liters for R740i***



WZ290401381—19—10OCT06

Tank Shape Calibration - Step 2



WZ290401382—19—10OCT06

Tank Shape Calibration - Step 3

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 overfill 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 R732i, or 4000 liters for R740i. 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 overfill 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).

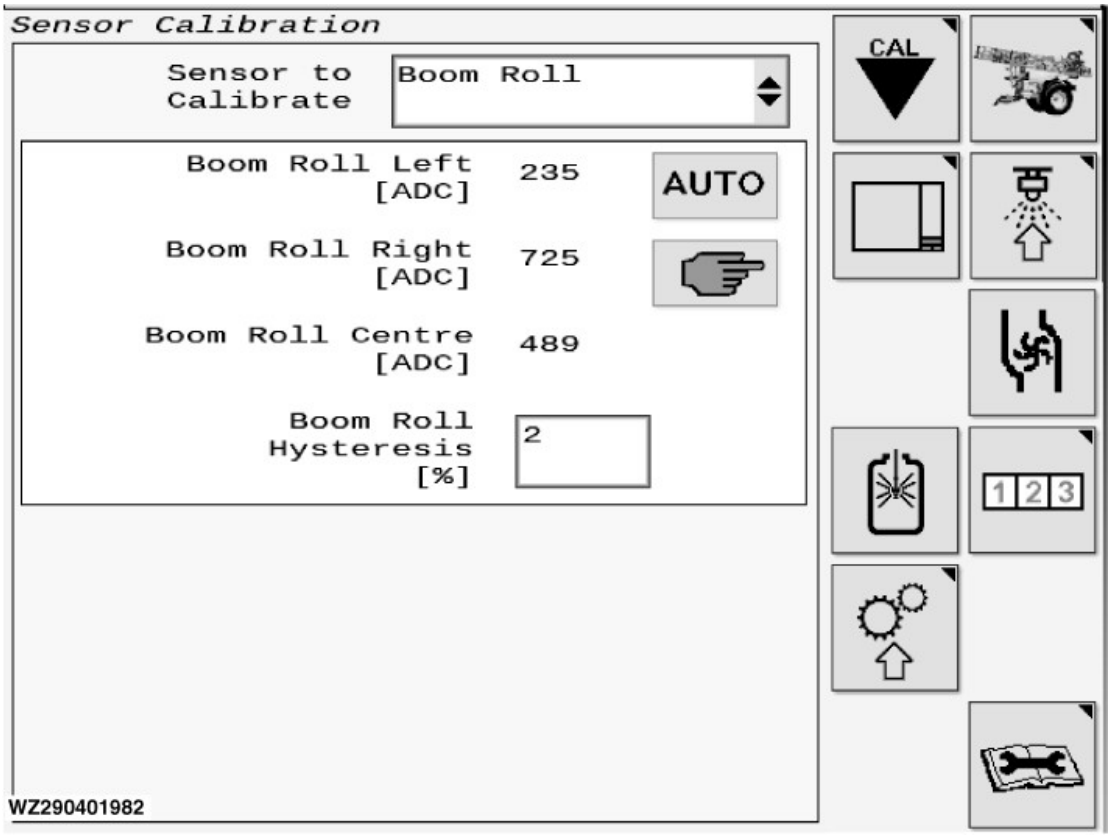
IMPORTANT: Lower or higher flow results in faulty tank shape calibration.

6. Start spraying with a constant flow between 100 and 140**L/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.

KWPZAG2,000079E-19-13AUG21

Boom Roll Calibration



WZ290401982—UN—01JUL20

Sensor Calibration - Boom Roll

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.

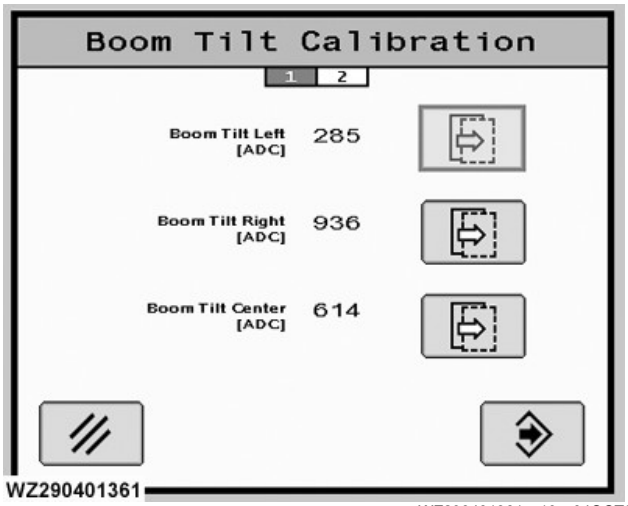
Boom Roll Center [ADC]: the position of the potentiometer on the boom roll actuator corresponding to the center position of the boom roll indication on the display. This value always has to be calibrated.

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 **Next** button to select the required calibration (step 2 screen will follow).

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.

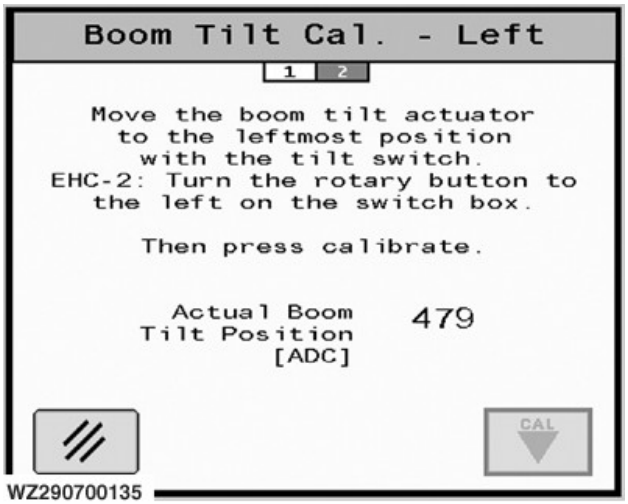
Boom Roll Hysteresis [%]: the hysteresis used for the automatic positioning of the boom roll actuator has to be entered here. The hysteresis is the dead band for the boom roll indication on the display, before operation of the boom roll cylinder takes place.

Automatic - Boom Roll Cal. - Left



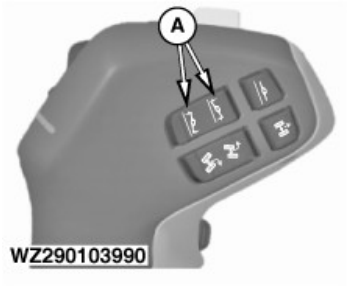
WZ290401361—19—04OCT06

Automatic - Boom Roll Step 1



WZ290700135—19—08JUN10

Automatic - Boom Roll Step 2 (Left)



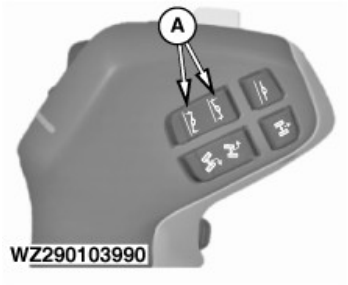
WZ290103990—UN—02JUL20

Boom Roll Buttons

A—Boom Roll Buttons

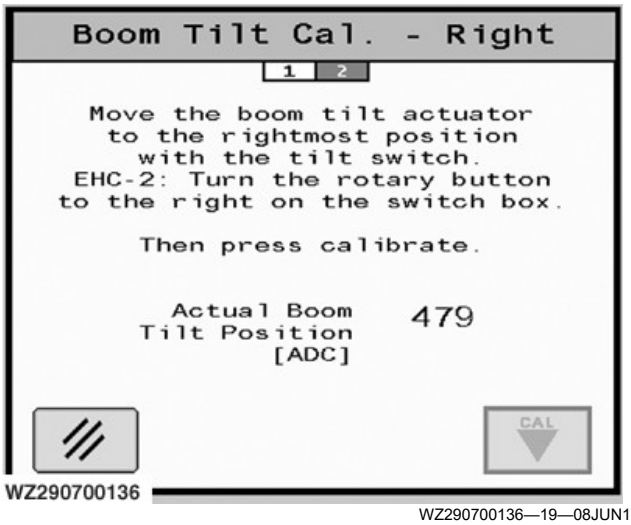
The description of the calibration procedure is shown on the screen: Press and hold the **Boom Roll button** (A) and move the boom to the leftmost position. Then press **CAL** button to start the calibration. Actual **Boom Roll Position [ADC]** value is shown in the screen center. The **Cancel** button will return you to the **Boom Roll Calibration** page.

Automatic - Boom Roll Cal. - Right



WZ290103990—UN—02JUL20

Boom Roll Buttons



WZ290700136—19—08JUN10

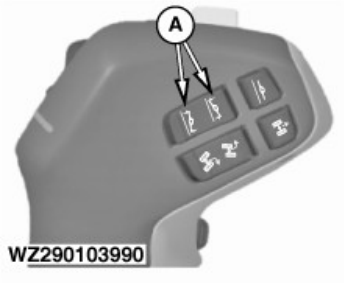
Automatic - Boom Roll Step 2 (Right)

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**

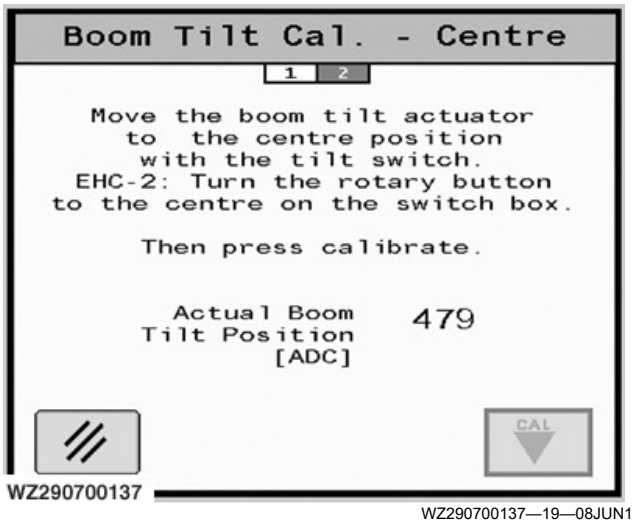
Roll Position [ADC] value is shown in the screen center. The **Cancel** button will return you to the **Boom Roll Calibration** page.

Automatic - Boom Roll Cal. - Center



WZ290103990—UN—02JUL20

Boom Roll Buttons



WZ290700137—19—08JUN10

Automatic - Boom Roll Step 2 (Center)

A—Boom Roll Buttons

The description of the calibration procedure is shown on the screen: Move the boom to the centermost 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.

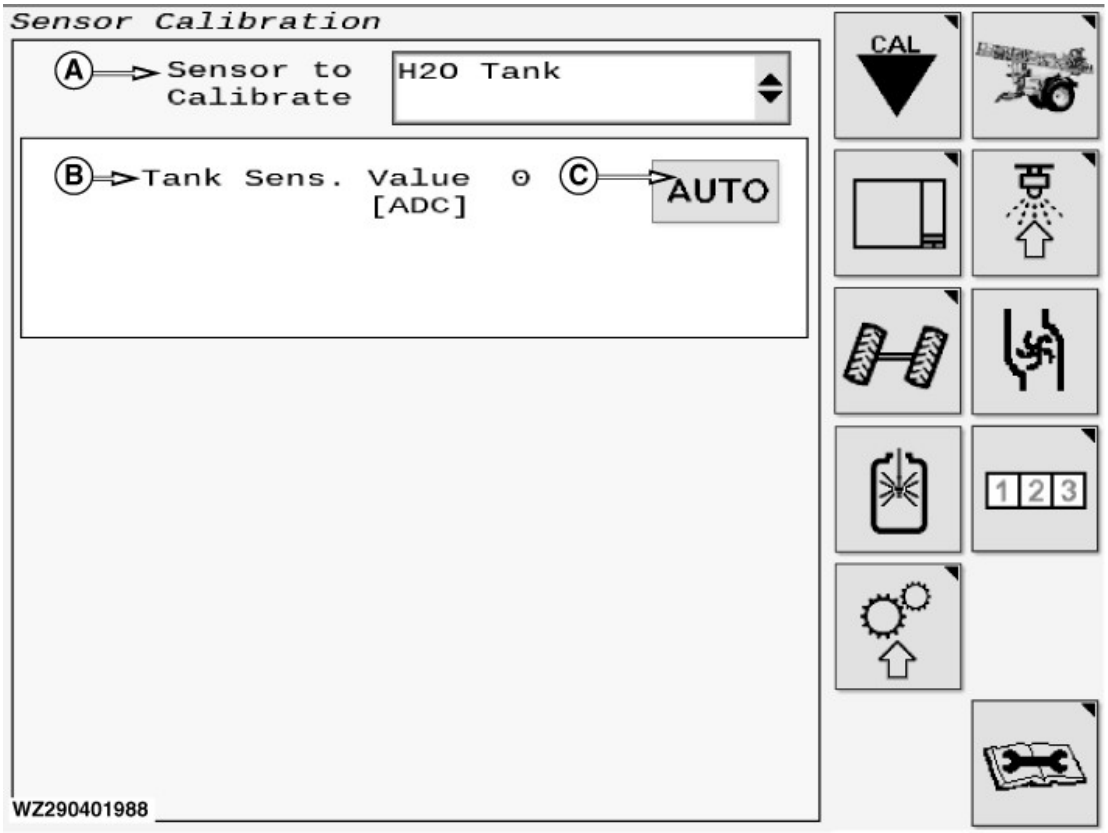
KWPZAG2,000079F-19-13AUG21

Boom Height Calibration

IMPORTANT: Refer NORAC 7 calibration procedure.

KWPZAG2,00007A0-19-13AUG21

H_2O Tank Calibration



WZ290401988—UN—02JUL20

A—Sensor to Calibrate Field
B—Tank Sens. Value [ADC]
C—AUTO Calibration Button
D—Cancel Button
E—Calibration Start Button

WZ290401594—UN—13DEC11

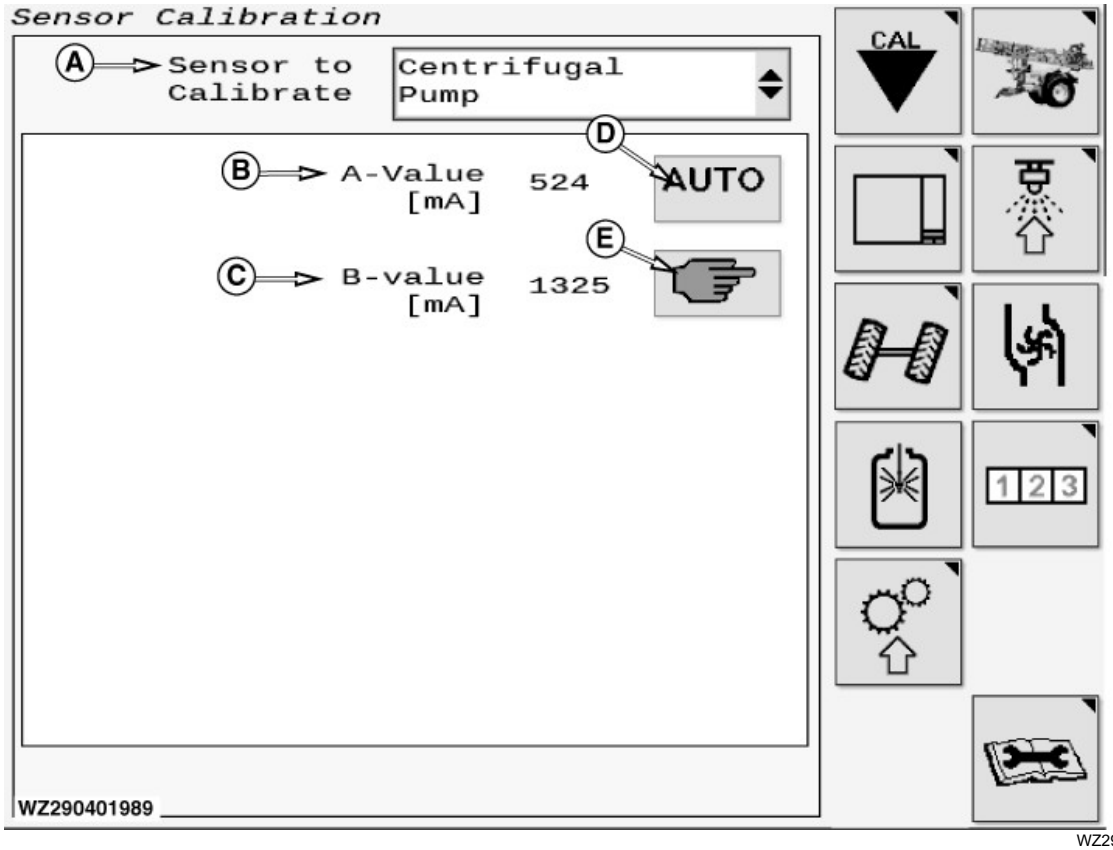
H_2O Tank Calibration (Automatic)

The H_2O 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 H_2O (Rinse Water) tank.

For the H_2O 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**.

KWPZAG2,00007A3-19-13AUG21

Centrifugal Pump Calibration



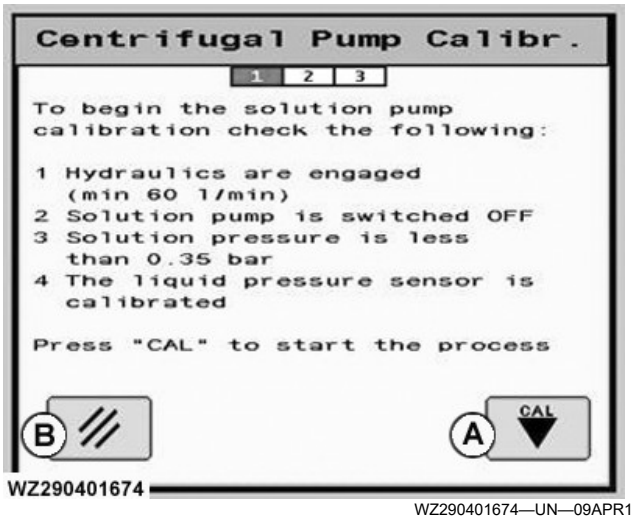
WZ290401989—UN—01JUL20

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

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).

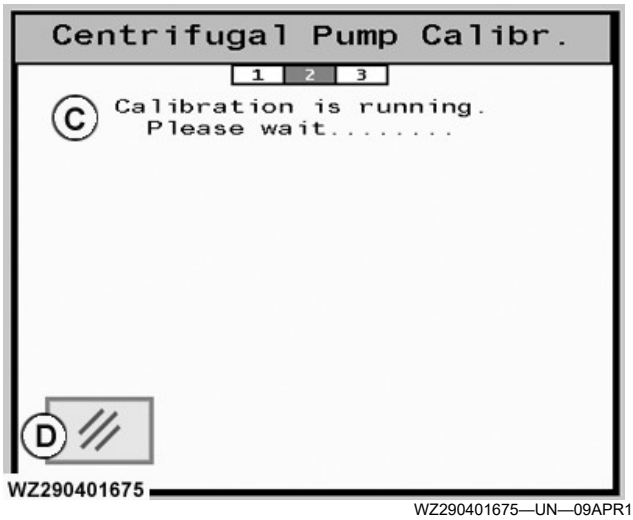
Expected value range for;

- A-Value from 450 through 750 [ADC]
- B-Value from 1250 through 1800 [ADC]



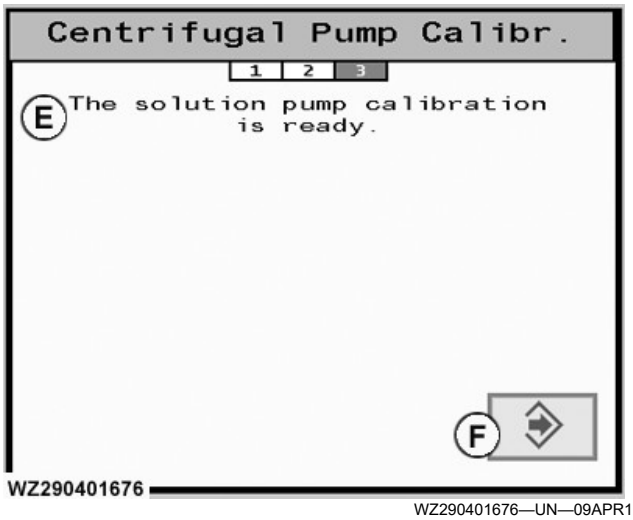
WZ290401674—UN—09APR15

Solution Pump Calibration - Step 1



WZ290401675—UN—09APR15

Solution Pump Calibration - Step 2



WZ290401676—UN—09APR15

Solution Pump Calibration - Step 3

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.

a. Press the AUTO calibrate button to enter the calibration menu.

b. **Step 1**: To begin the solution pump calibration check the following.

1. Hydraulics is engaged (MIN 60 L/min.)
2. Solution pump is switched OFF
3. Solution pressure is less than 0.35 bar
4. The liquid pressure sensor is calibrated

c. Press “CAL” (A) to start the process.

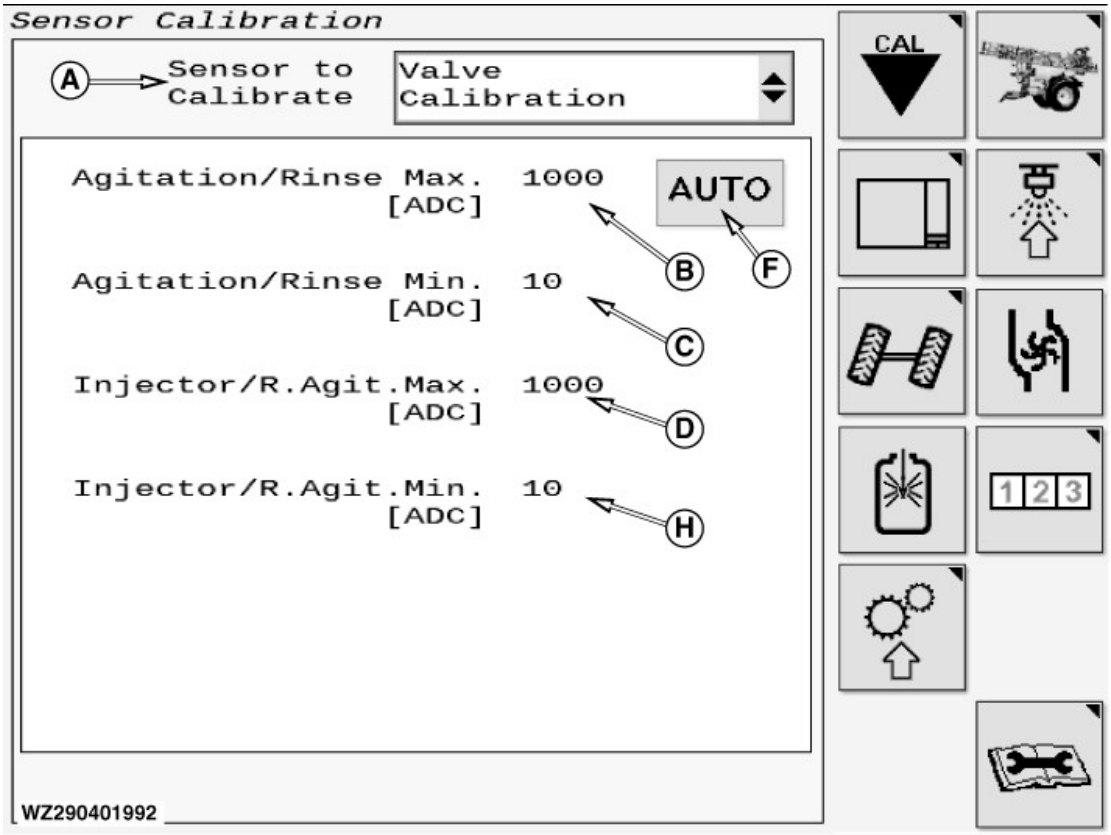
d. **Step 2**: A message shows status of the process (C) Calibration is running. Please wait. . . . .

e. **Step 3**: The screen shows the message (E) The Solution pump calibration is ready.

f. Press the **Enter** button (F) to complete the calibration.

KWPZAG2,00007A4-19-13AUG21

Valve Calibration



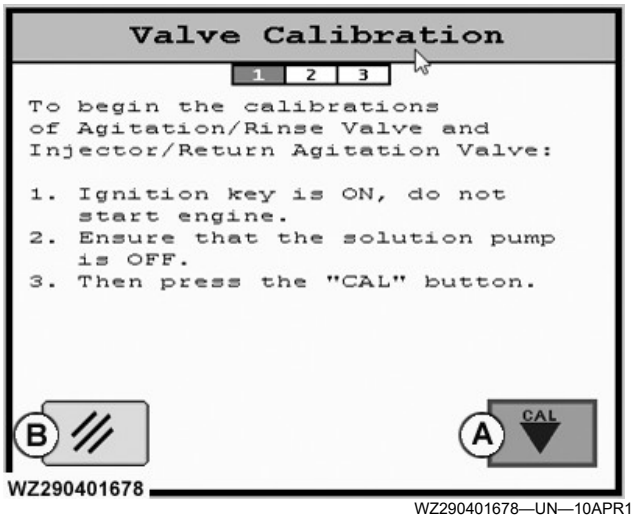
WZ290401992—UN—02JUL20

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).

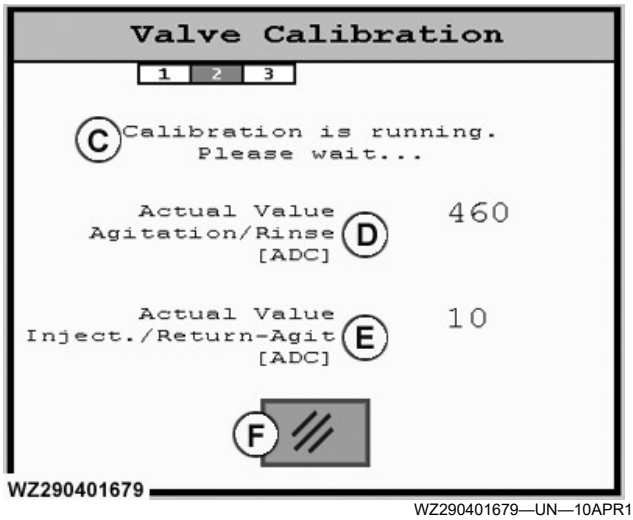
The solution system has two valves which rely on feedback from an internal potentiometer. The calibration sets the minimum and maximum positions for each valve.

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.



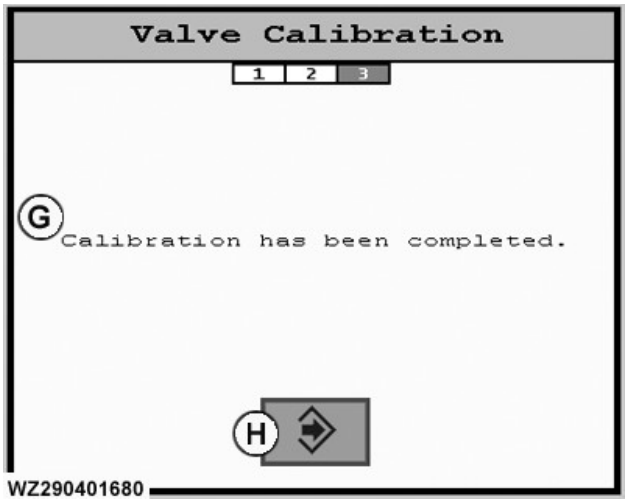
WZ290401678—UN—10APR15

Valve Calibration - Step 1



WZ290401679—UN—10APR15

Valve Calibration - Step 2



WZ290401680—UN—10APR15

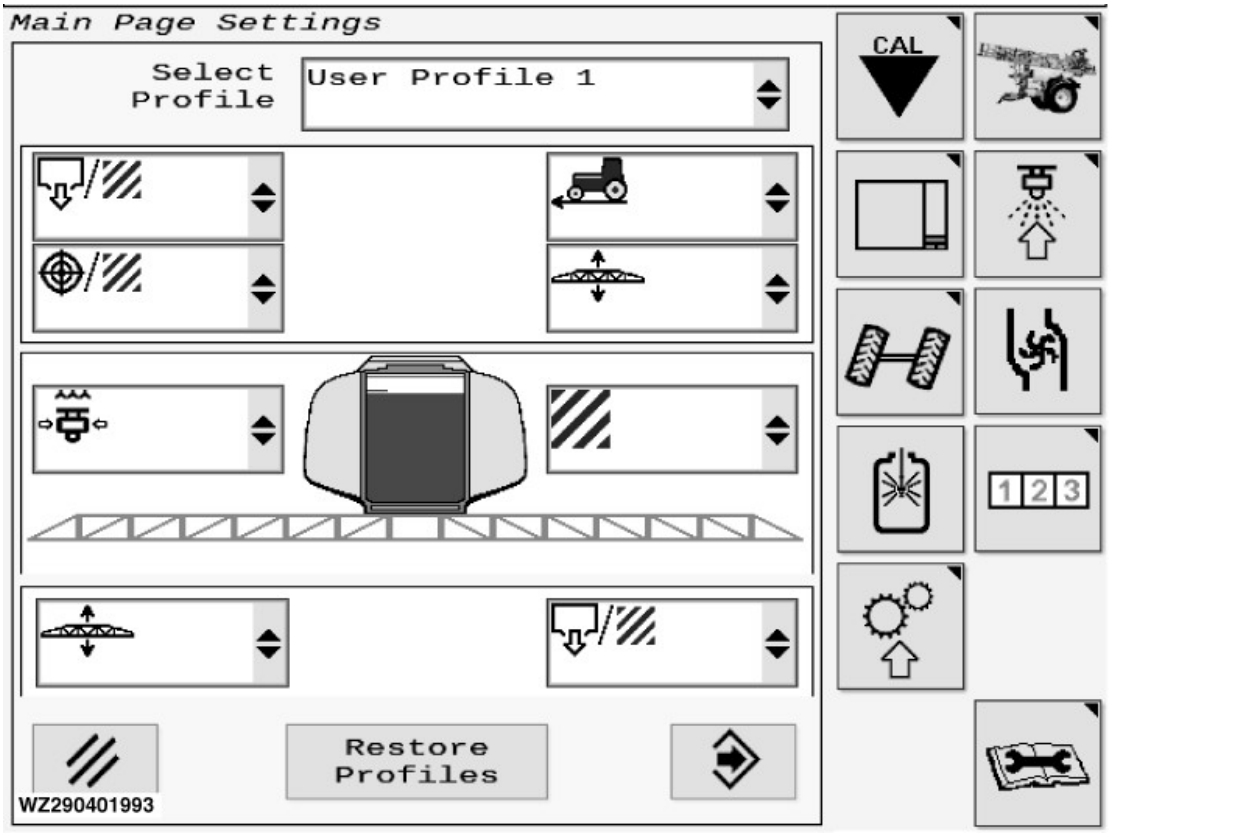
Valve Calibration - Step 3

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.

KWPZAG2,00007A5-19-13AUG21

Main Page Layout



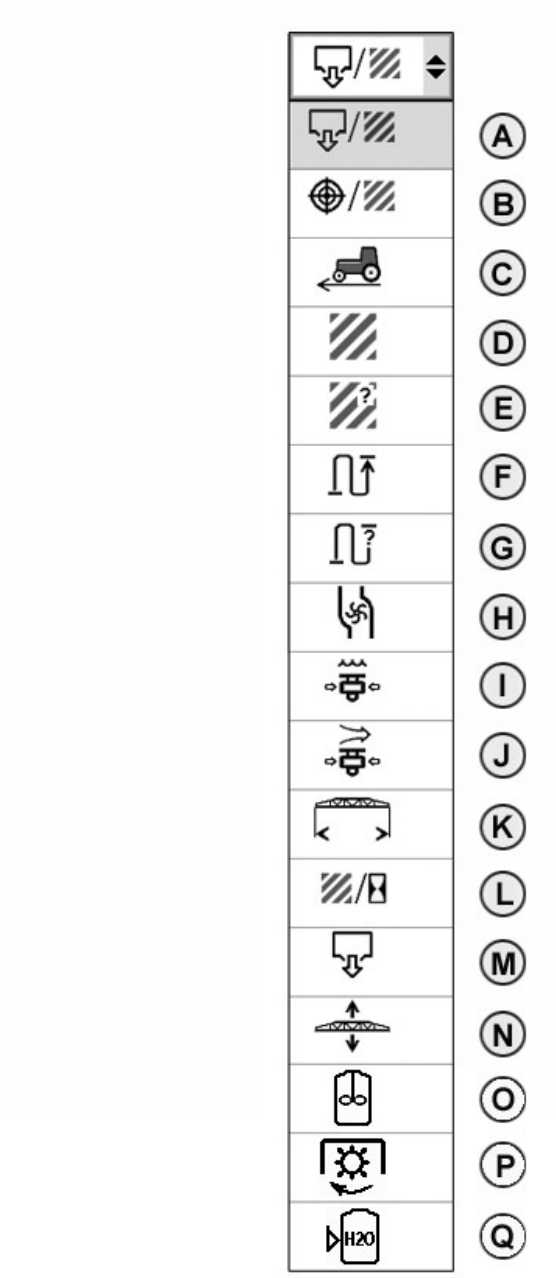
WZ290401993—UN—02JUL20

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 (Not used on R900i)
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].

*NOTE: For R900i PowrSpray, 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 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 travelled 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 on R900i.

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. Not used on the R900i PowrSpay.

P — **Pump Speed**: displays the pump shaft rotation speed in revolutions per minute.

Q — **Rinse Water Tank Contents**: shows the contents in litres.

KWPZAG2,00007A6-19-13AUG21

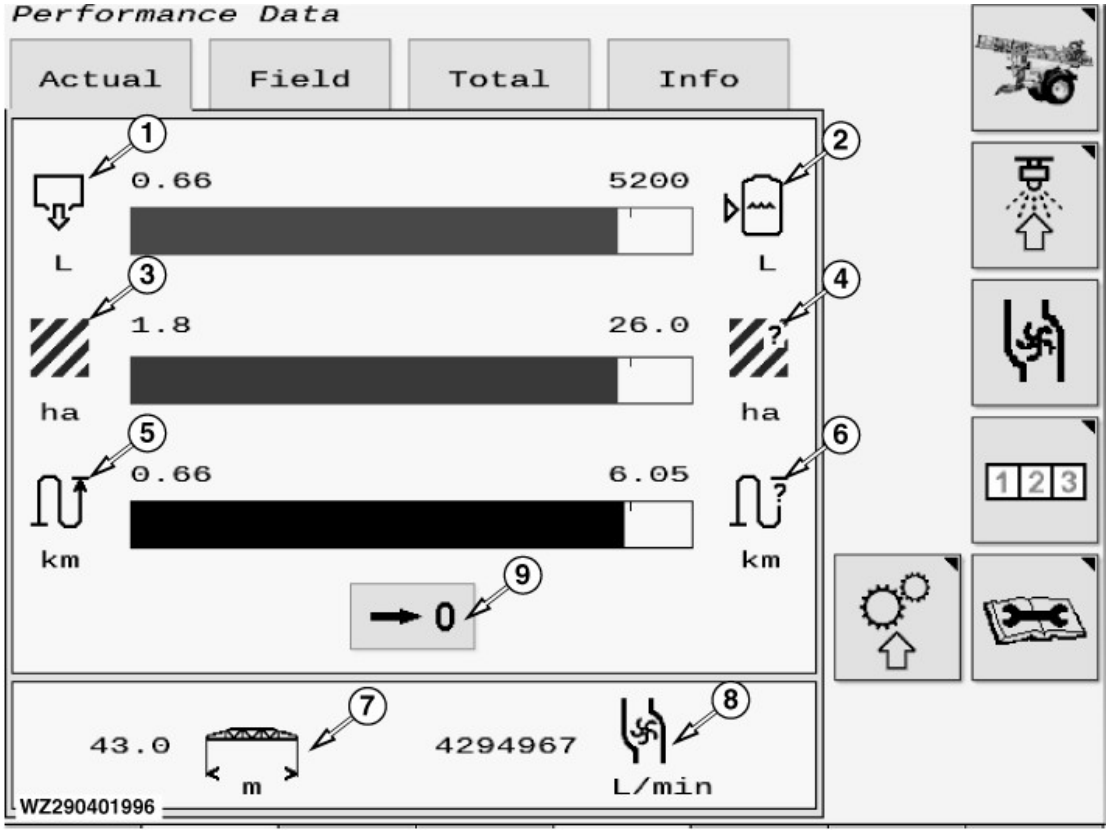
Performance Data

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.

KWPZAG2,00007A7-19-13AUG21

Actual



WZ290401996—UN—02JUL20

1—Sprayed volume
2—Remaining volume
3—Sprayed area
4—Remaining area
5—Sprayed distance
6—Remaining distance
7—Working width (actual)
8—Flow rate (actual)
9—Resets fields to zero

Actual performance data is found by selecting softkey [I] from the **Menu** field. It is the first tab to appear after activating the softkey.

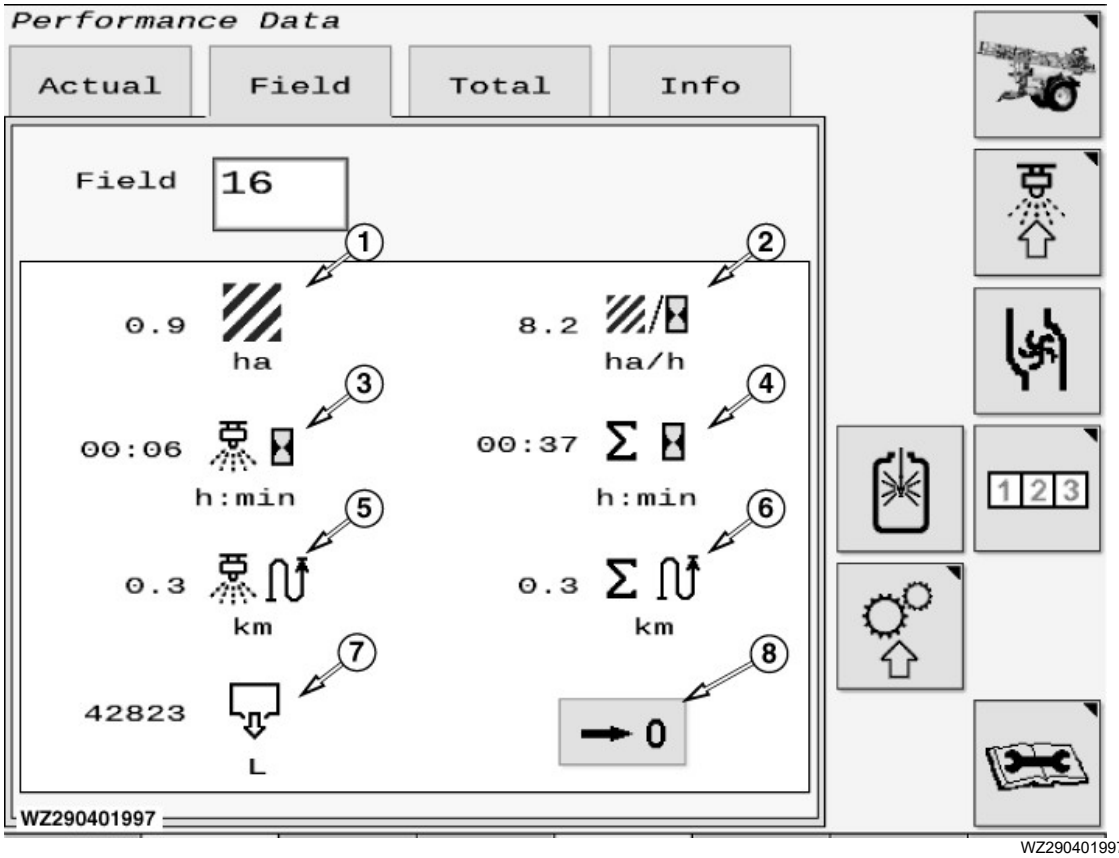
The horizontal bar charts represent an overview of performance with regard to ”What have I done” and ”What can I do”. The bars will recede to the left as spray work is carried out, and the totals will update showing the machine performance.

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.

KWPZAG2,00007A8-19-13AUG21

Field



WZ290401997—UN—02JUL20

Performance Data - Field

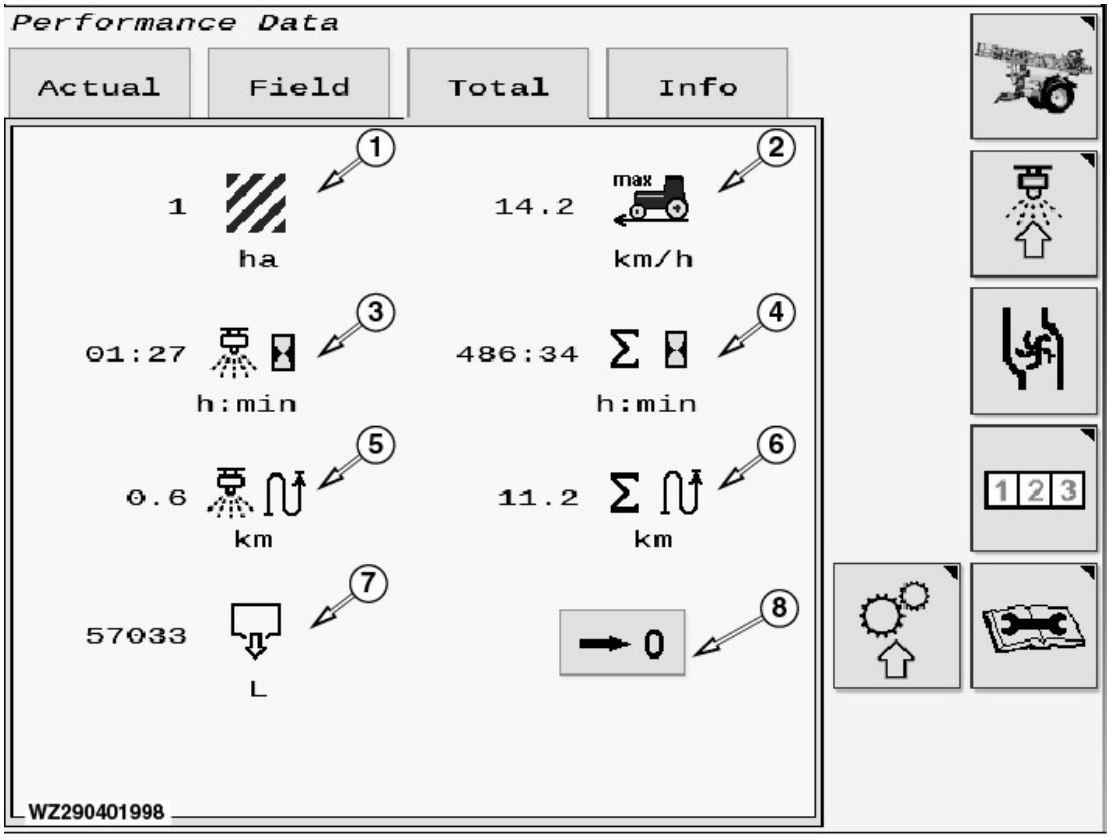
Field data can be found by selecting the (Field) tab in **Performance Data** (softkey [I]).

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.

1—Spray Area (ha): The number of hectares sprayed.
2—Current performance (Sprayed area) in ha/h.
3—Spray Time (h:min): The spraying time for the field.
4—Total Time (h:min): The total time the controller (sprayer) has run.
5—Spray Distance (km): The distance travelled during spraying.
6—Total Distance (km): The total distance travelled.
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.

KWPZAG2,00007A9-19-13AUG21

Total



WZ290401998—UN—08JUL20

Performance Data - Total

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.

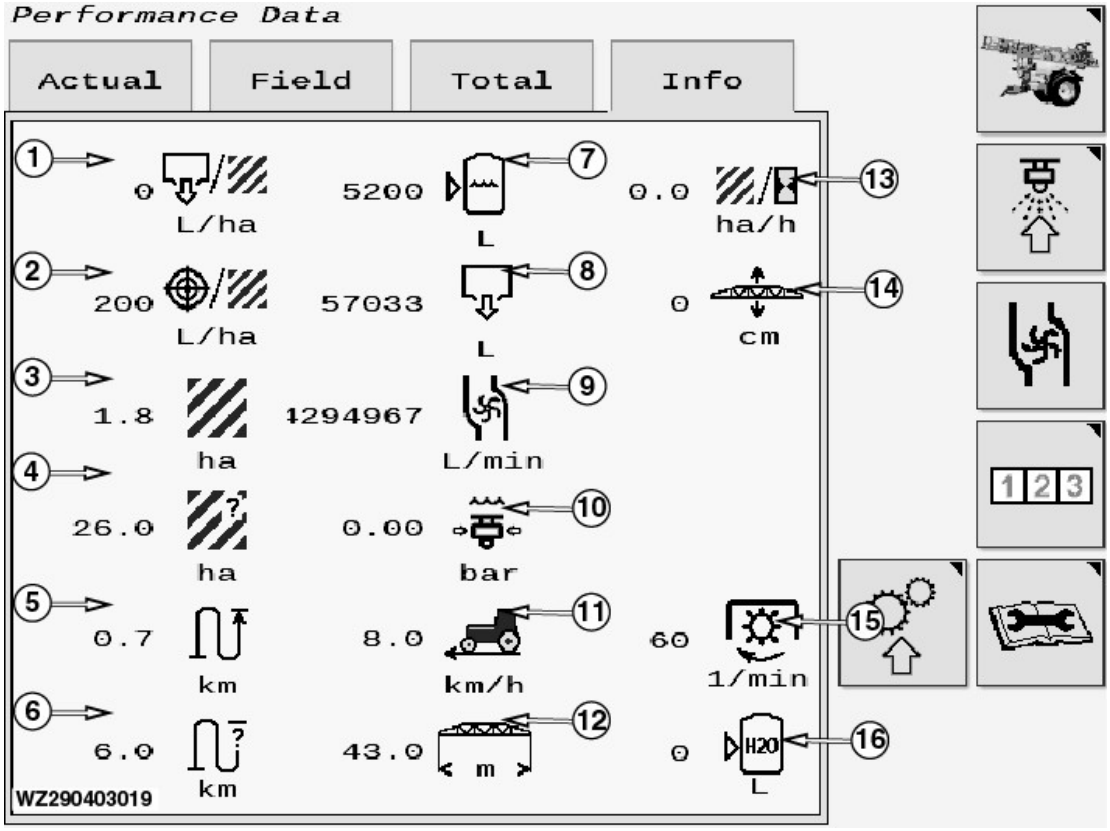
This page contains the following information stored in the memory:

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 travelled during spraying.
6—Total Distance (km): The total distance travelled.
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.

KWPZAG2,00007AA-19-13AUG21

Info



WZ290403019—UN—08JUL20

Performance Data - Info

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

KWPZAG2,00007AB-19-13AUG21

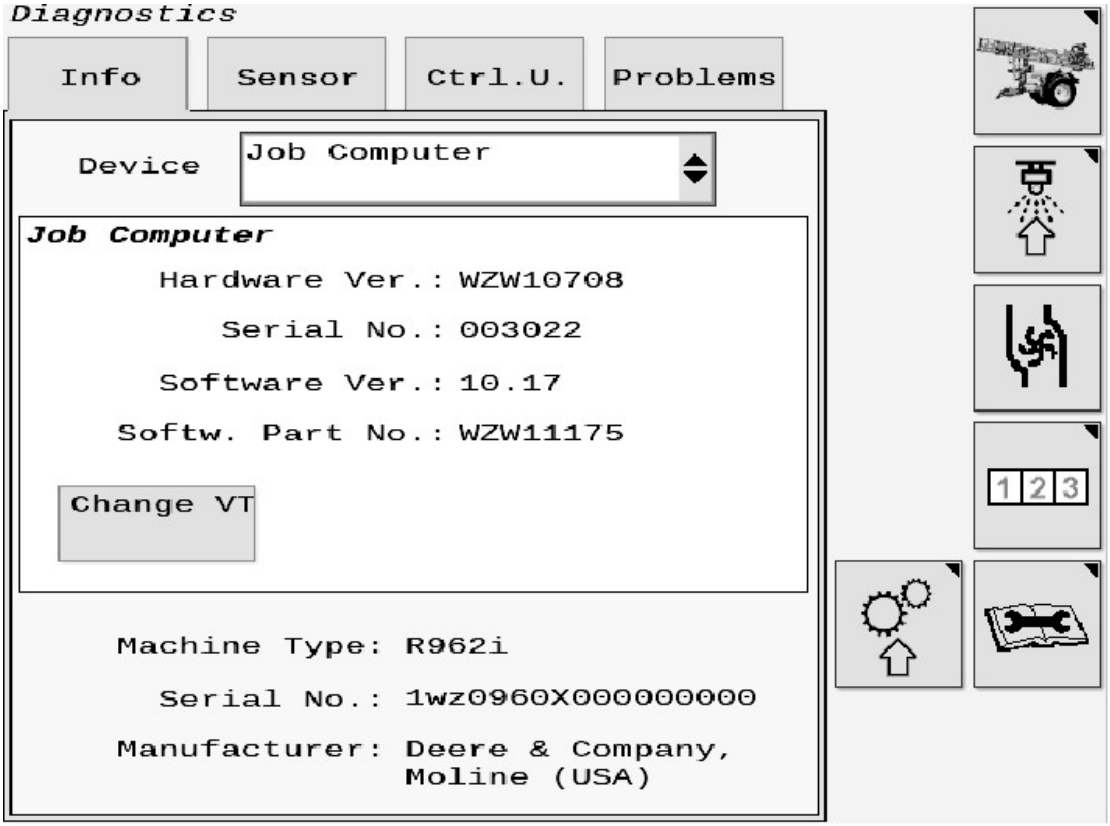
Diagnostics

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.

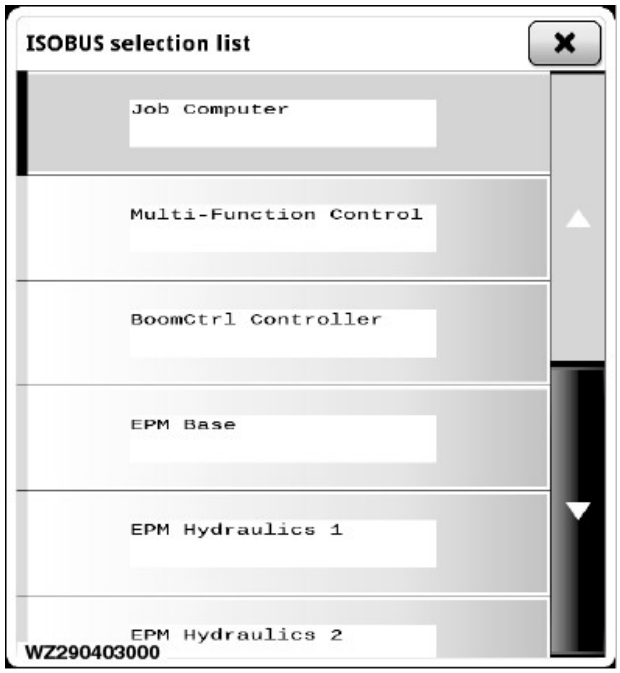
KWPZAG2,00007AC-19-13AUG21

Info Readings



WZ290402000—UN—20AUG20

Diagnostics - Info Readings



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**.

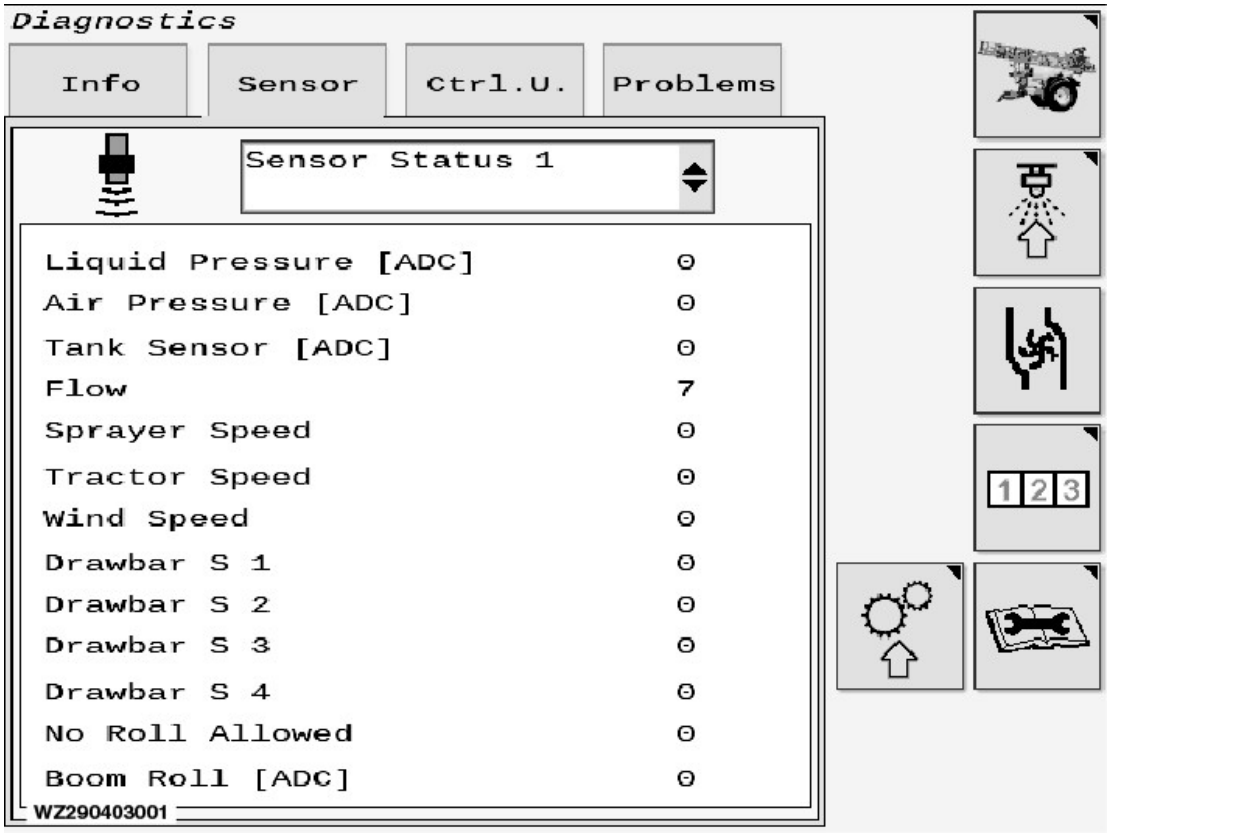
The devices which have been connected to the implement bus, will govern the contents of the drop down selection list.

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 a tractor 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 tractor.

Language button (middle right on the display) enables the operator to change the application displayed language.

KWPZAG2,00007AD-19-13AUG21

Sensor Status



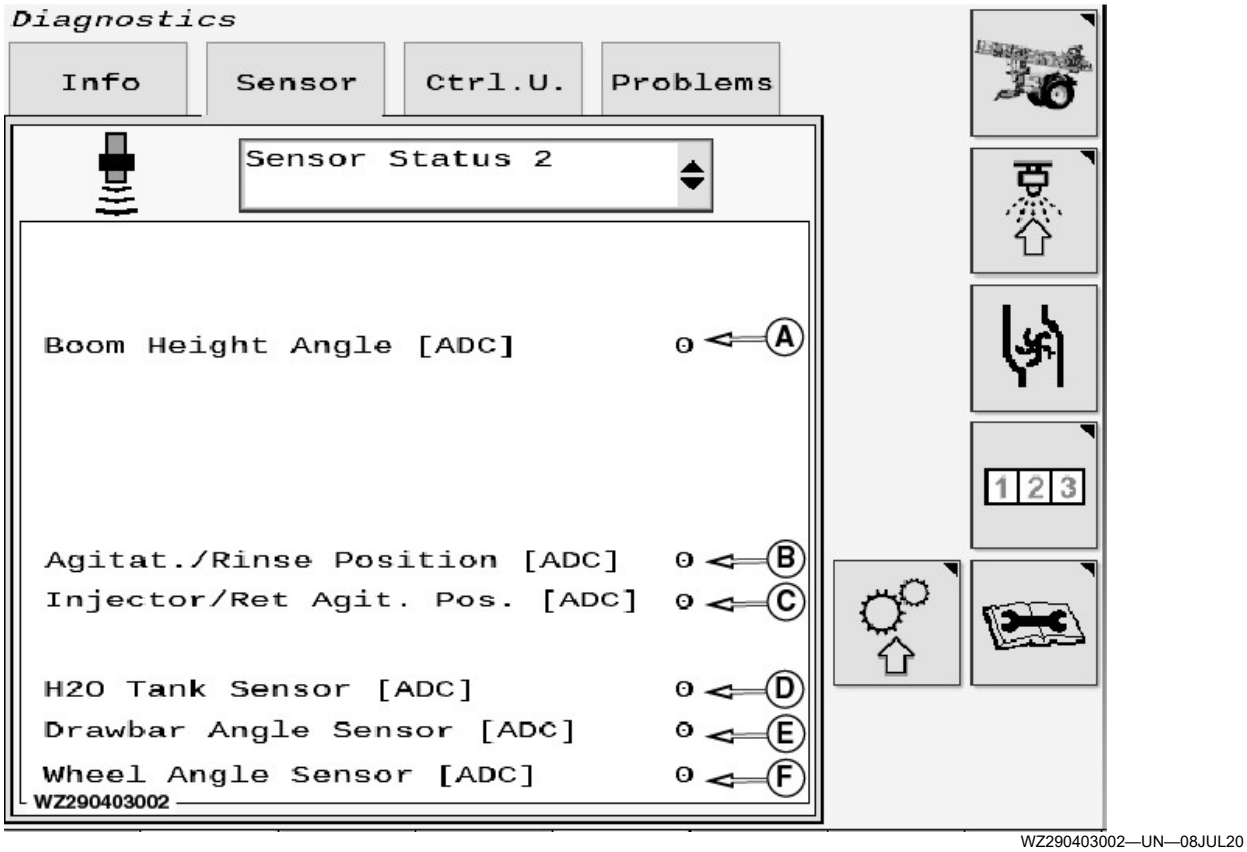
WZ290403001—UN—08JUL20

Diagnostic - Sensor Status 1

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

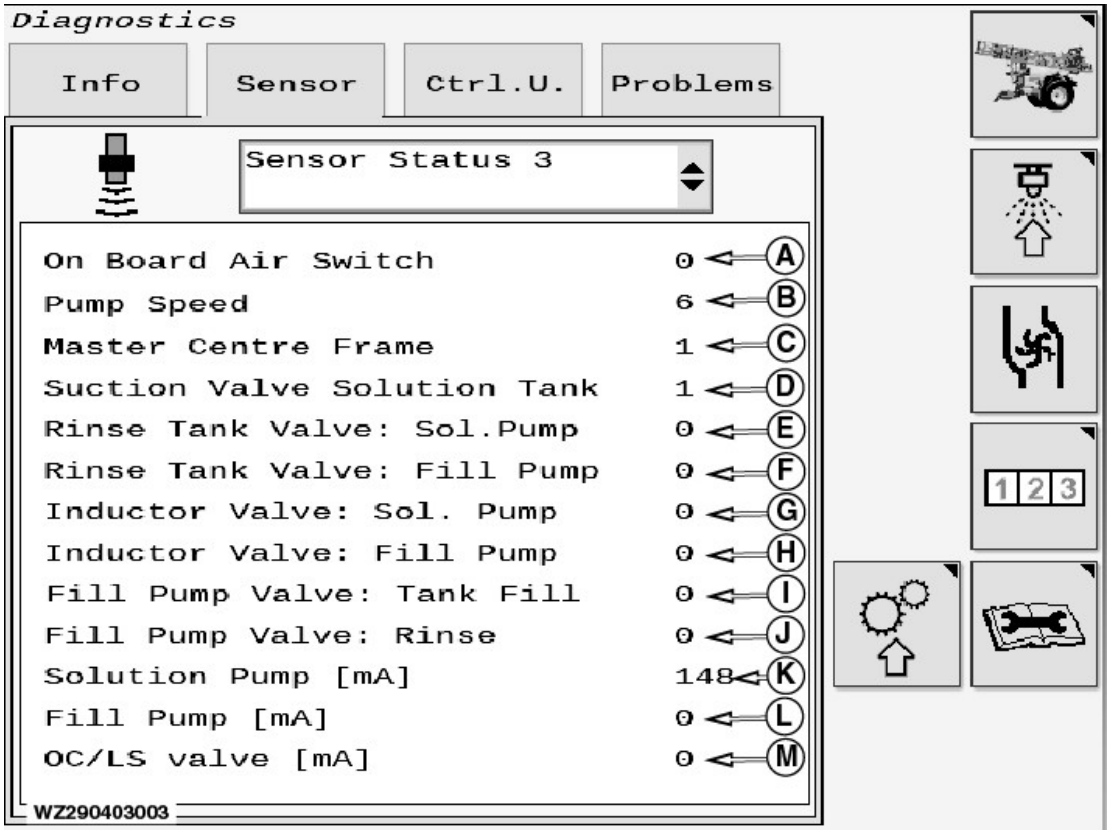


WZ290403002—UN—08JUL20

Diagnostic - Sensor Status 2

A—Boom Height Angle [ADC]
B—Agitat./Rinse Postion [ADC]
C—Injector/Ret Agit. Pos. [ADC]
D—H_2O Tank Sensor [ADC]
E—Drawbar Angle Sensor [ADC]
F—Wheel Angle Sensor [ADC]

Sensor Status 3

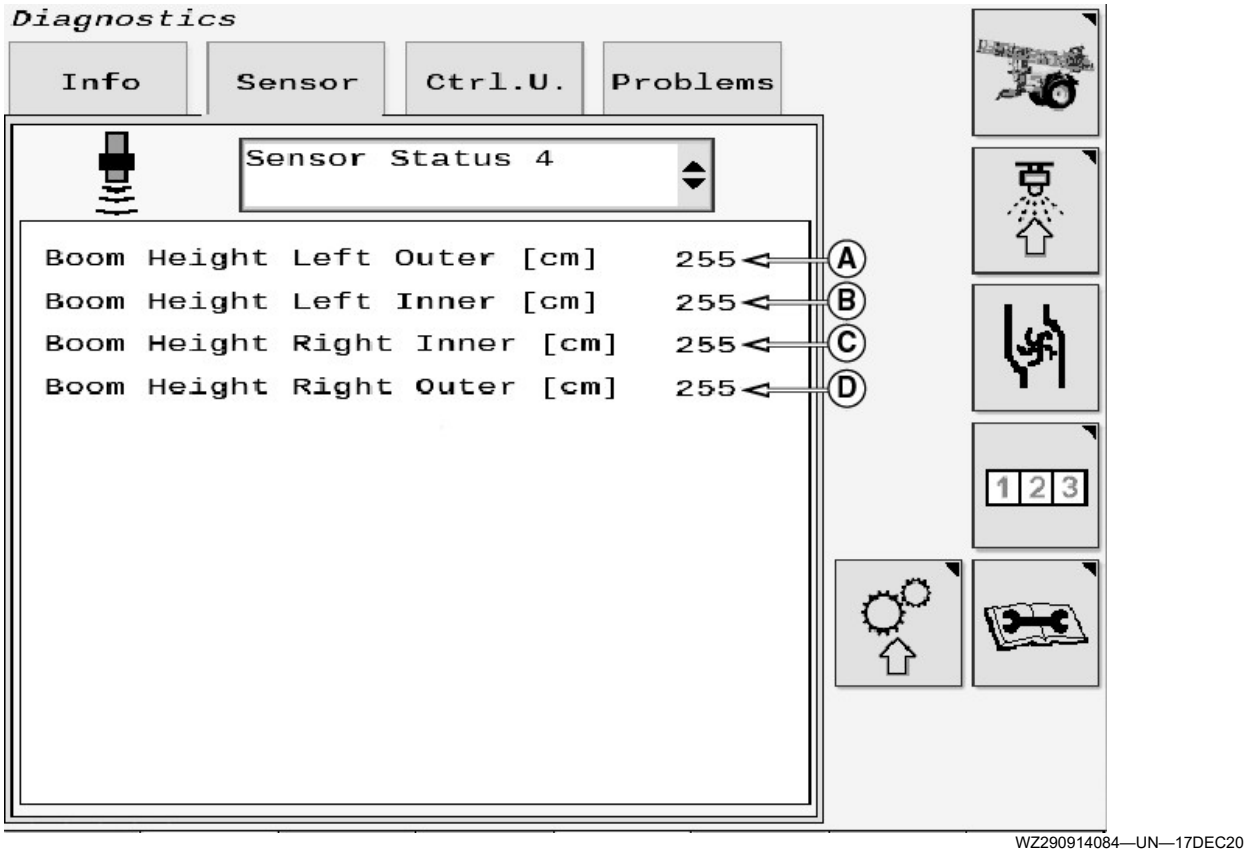


WZ290403003—UN—08JUL20

Diagnostic - Sensor Status 3

A—On Board Air Switch
B—Pump Speed
C—Master Centre 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



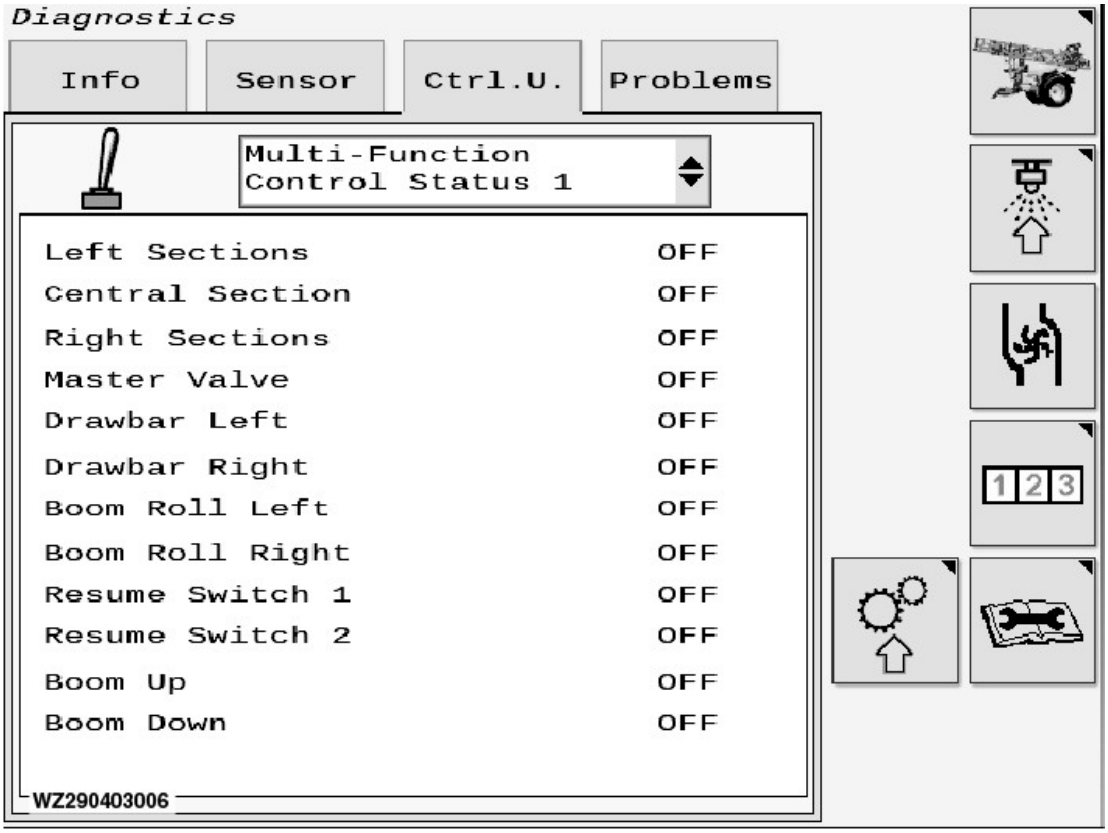
WZ290914084—UN—17DEC20

Diagnostic - 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]

KWPZAG2,00007AE-19-13AUG21

Ctrl. U. (Control Unit Status)



WZ290403006—UN—08JUL20

Diagnostics - Ctrl. U. (Control Unit Status)

Multi-Function Control Status (MFC) can be found by selecting the **Ctrl.U.** tab in **Diagnostics** (softkey [J]).

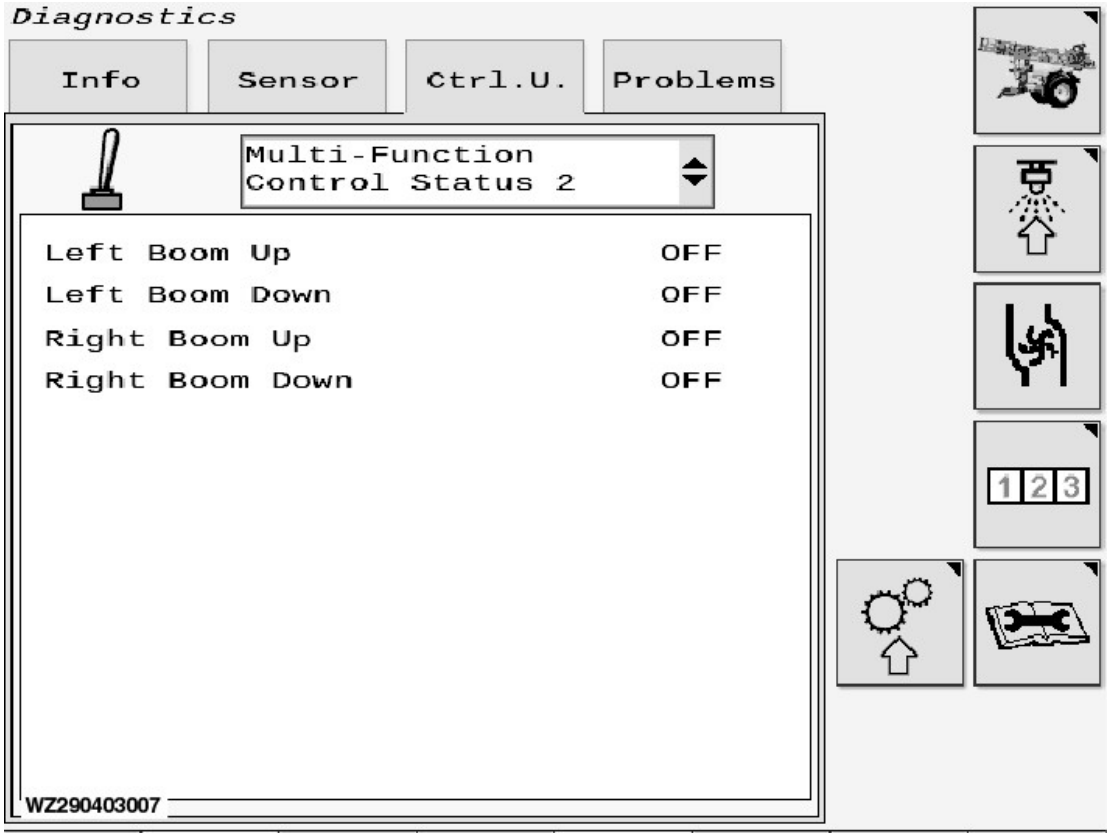
In these screens all switch functions can be monitored:

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 Centre Status
- Regulation Valve Test
- Solution Command Valve Test 1
- Solution Command Valve Test 2

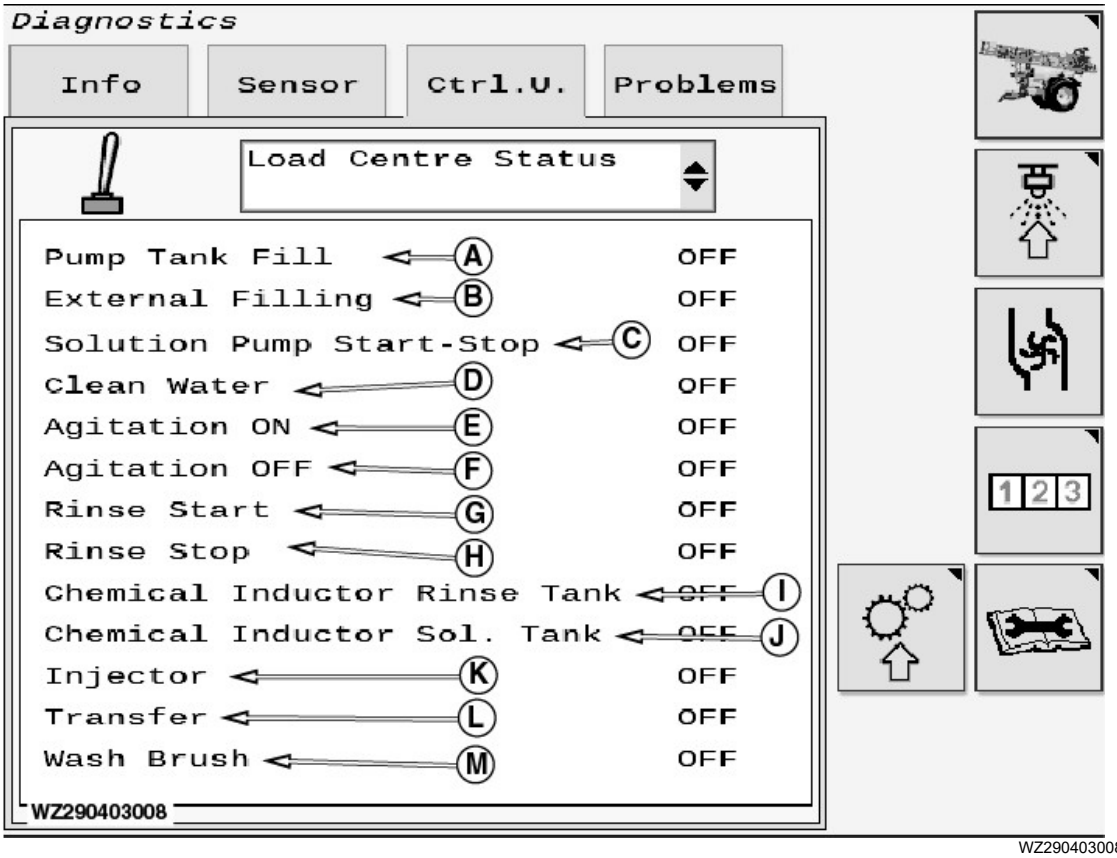
MFC Status (Joystick Status) Page 2



WZ290403007—UN—08JUL20

Diagnostics - Multi-Function Control Status 2

Load Centre Status

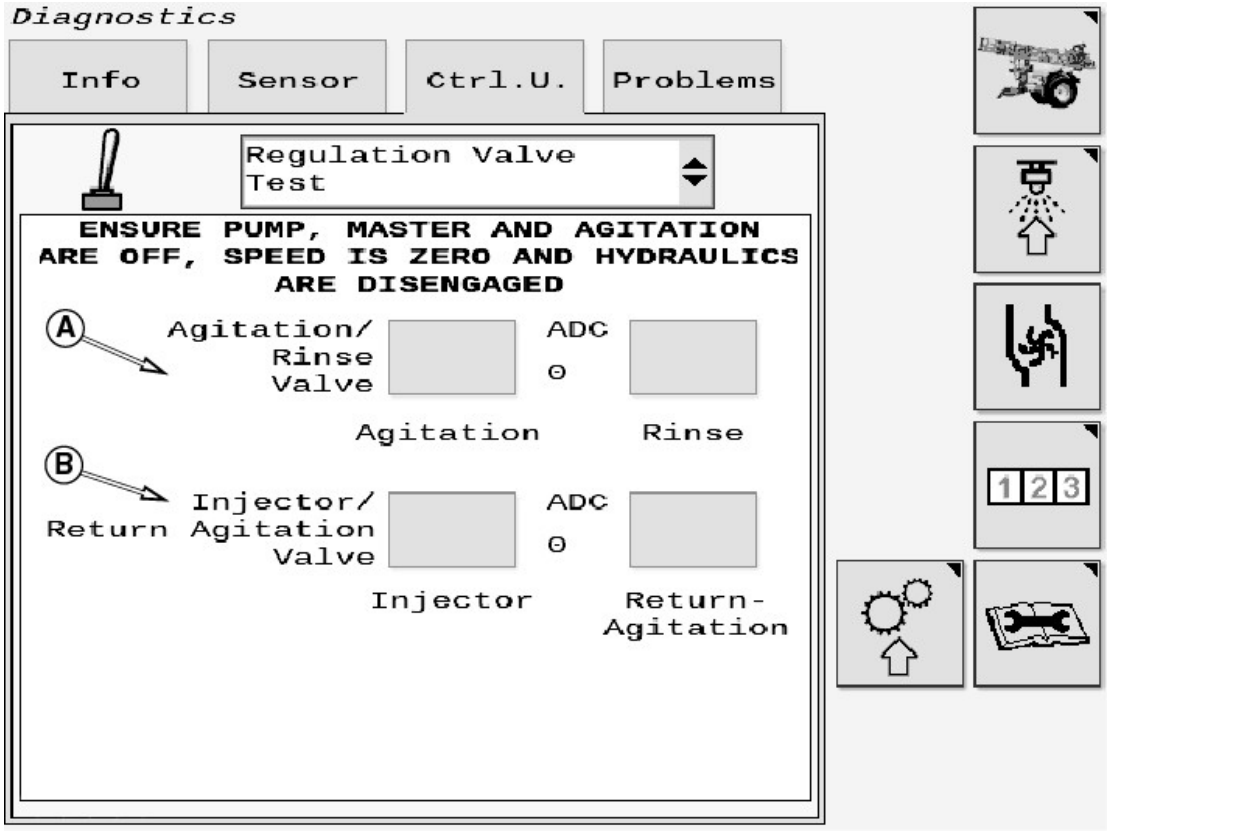


WZ290403008—UN—08JUL20

Crtl. U. - Load Centre 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



WZ290914086—UN—17DEC20

Crtl. U. - Regulation Valve Test

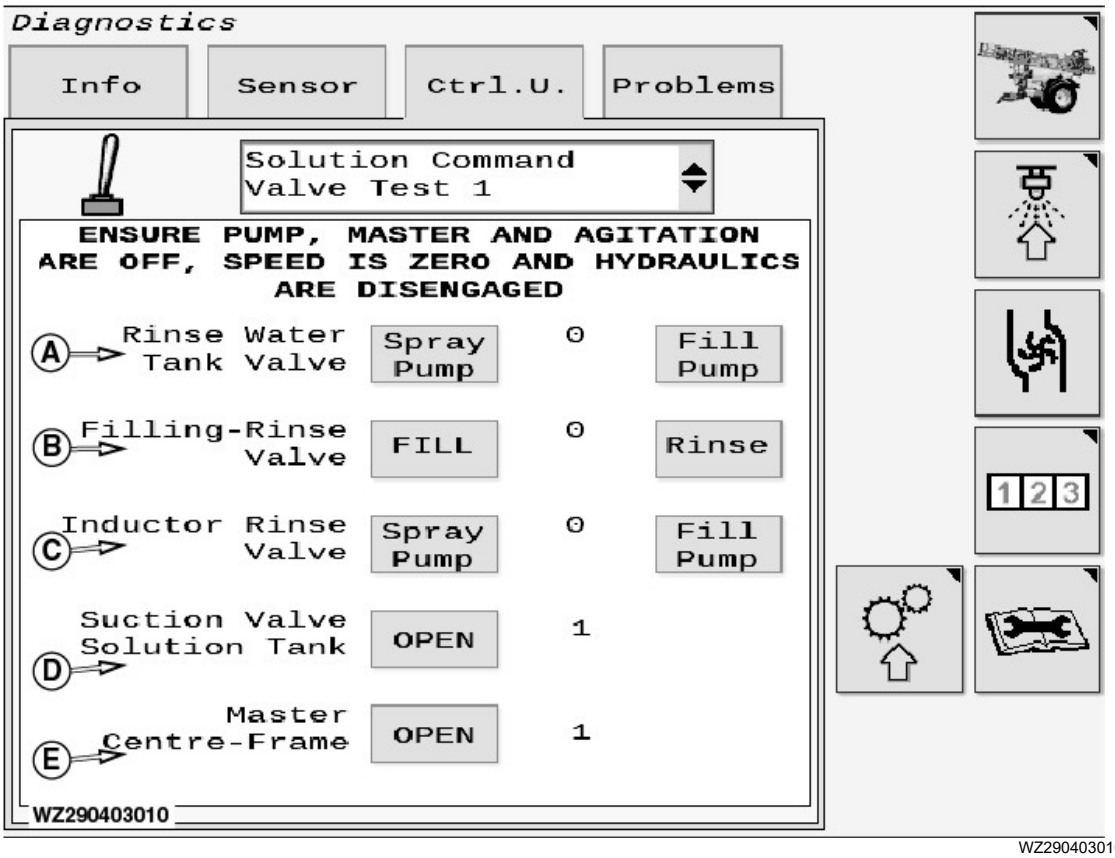
A—Agitation/Rinse Valve

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.

B—Injector/Return Agitation Valve

Solution Command Valve Test 1



WZ290403010—UN—08JUL20

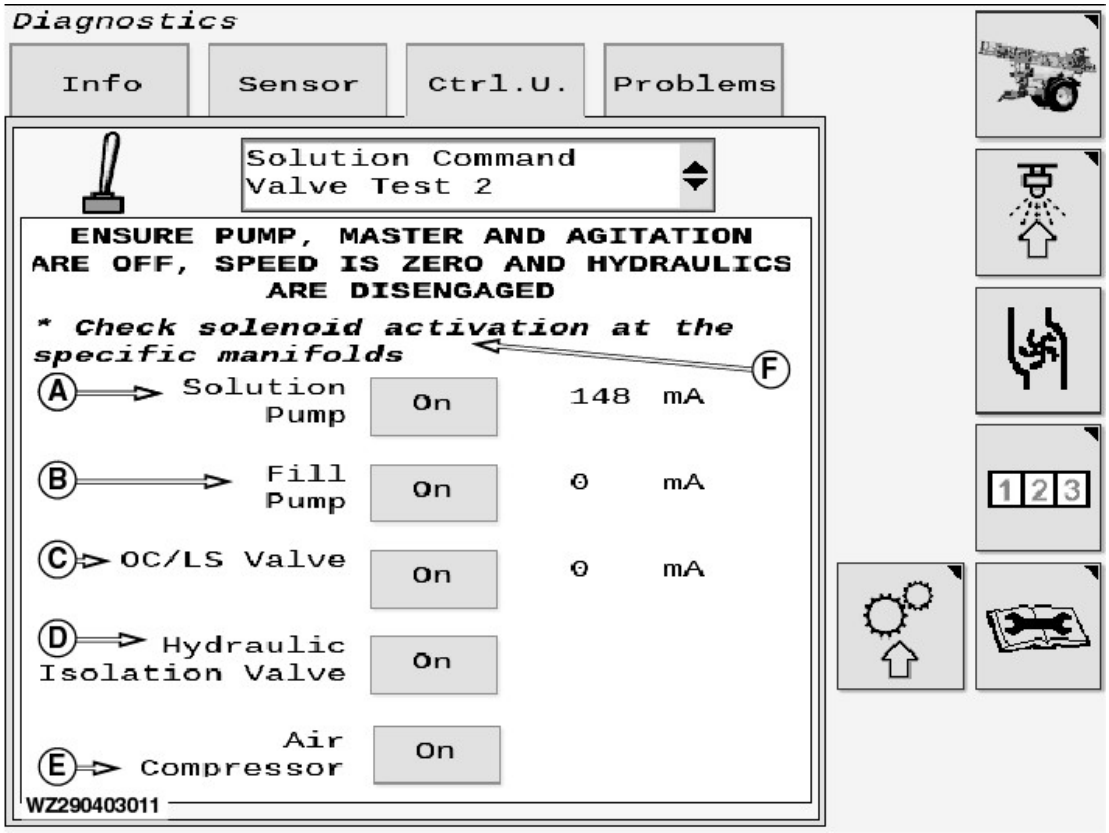
Crtl. U. - Solution Command Valve Test 1

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 Centre-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



WZ290403011—UN—08JUL20

Crtl. U. - Solution Command Valve Test 2

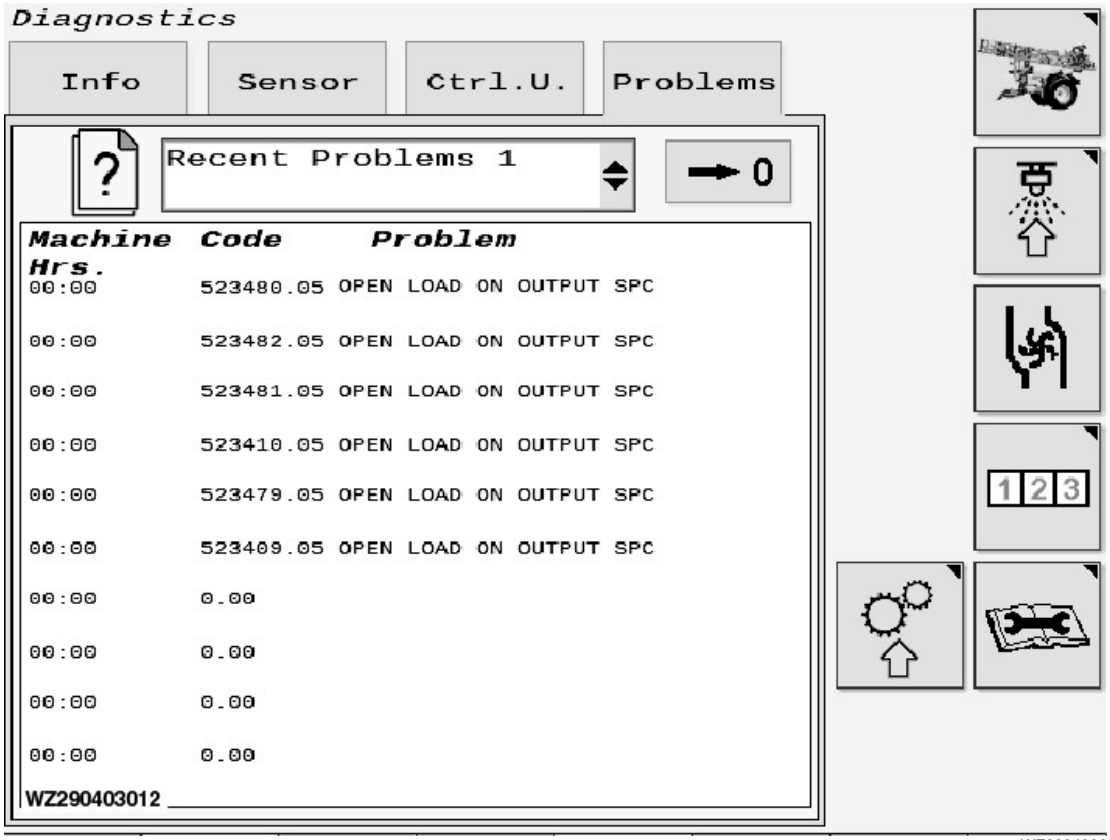
A—Solution Pump mA
B—Fill Pump mA
C—OC/LS Valve mA
D—Hydraulic Isolation Valve
E—Air Compressor
F—Check solenoid activation at the specific manifolds

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.

KWPZAG2,00007AF-19-13AUG21

Recent Problems



WZ290403012—UN—08JUL20

Diagnostics - Recent Problems

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.

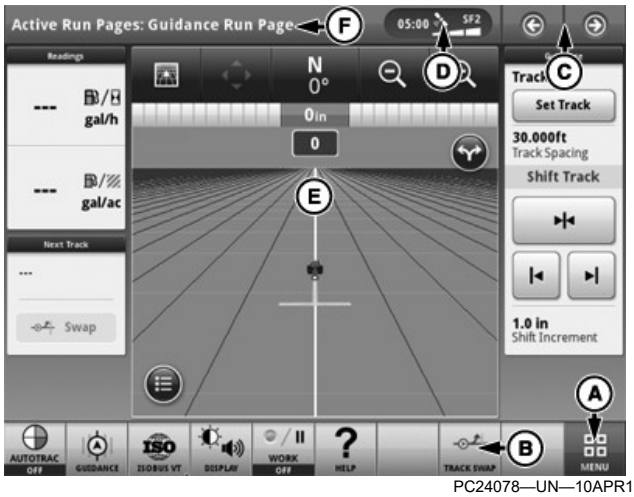
Clear Alarm Codes: to clear codes from the screen, select the **Reset** button located under **Recent Problems** tab.

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 massage 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.

KWPZAG2,00007B0-19-13AUG21

Display Run Page / Section Control (Option)



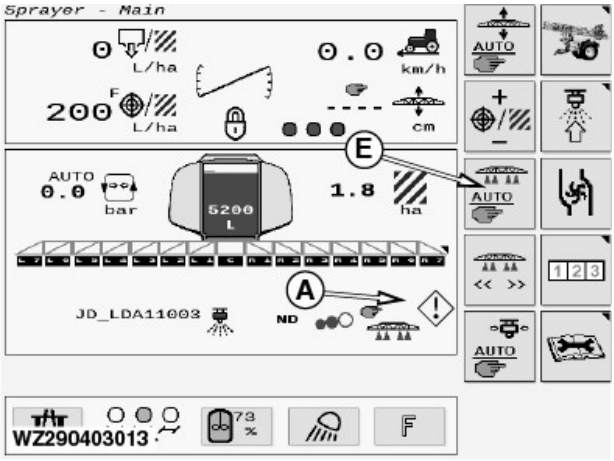
PC24078—UN—10APR17

Display Run Page on Gen4 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

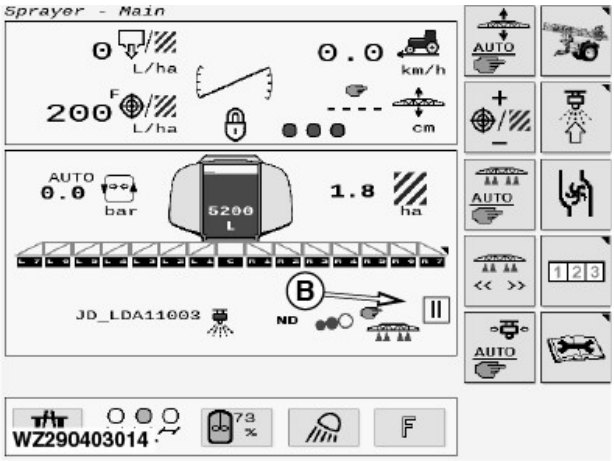
For the use and more explanation of the Run Page, refer to the John Deere Display manual.

Section Control Summary



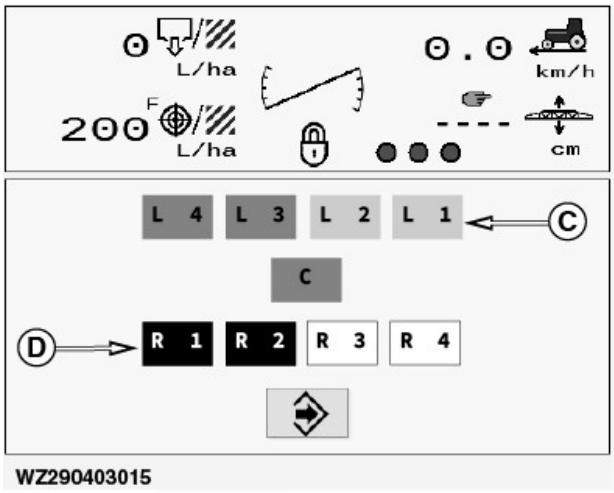
WZ290403013—UN—08JUL20

Caution Icon



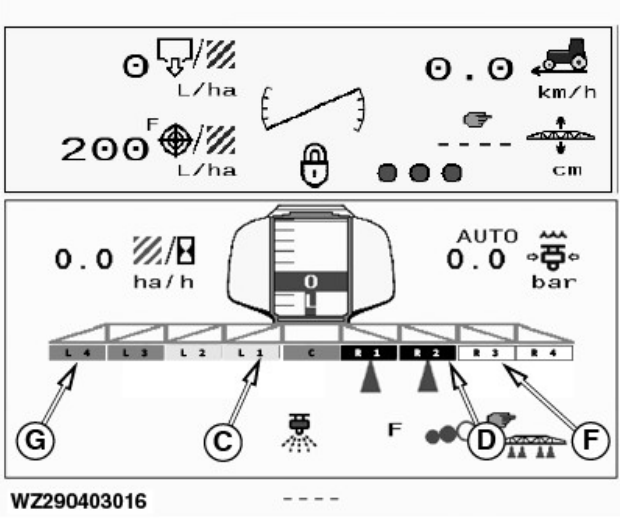
WZ290403014—UN—08JUL20

Pause Icon



WZ290403015—UN—08JUL20

Pop-Up Screen - Manually Disabled Section (RED) with Section Control Active



WZ290403016—UN—08JUL20

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

Summary of Application Features	
	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.

KWPZAG2,00007B1-19-13AUG21

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 - Contact the Dealer	
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	
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

SPN Number	FMI Number	Code Description	FMI Name
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
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

SPN Number	FMI Number	Code Description	FMI Name
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
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

SPN Number	FMI Number	Code Description	FMI Name
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
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

SPN Number	FMI Number	Code Description	FMI Name
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

KWPZAG2,00007B2-19-13AUG21

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.

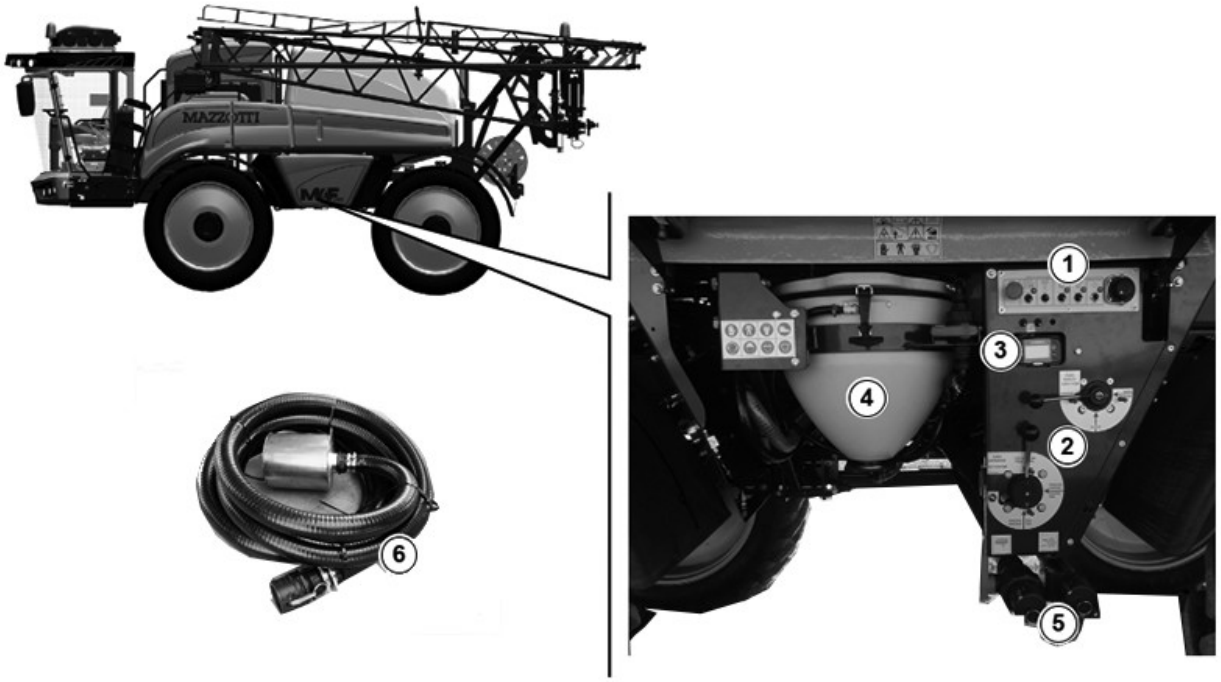
IMPORTANT: Filling procedure can be combined with the mixing of chemicals and the washing of their containers.

The system and its components do not allow the return of substances from the main tank to the intake device.

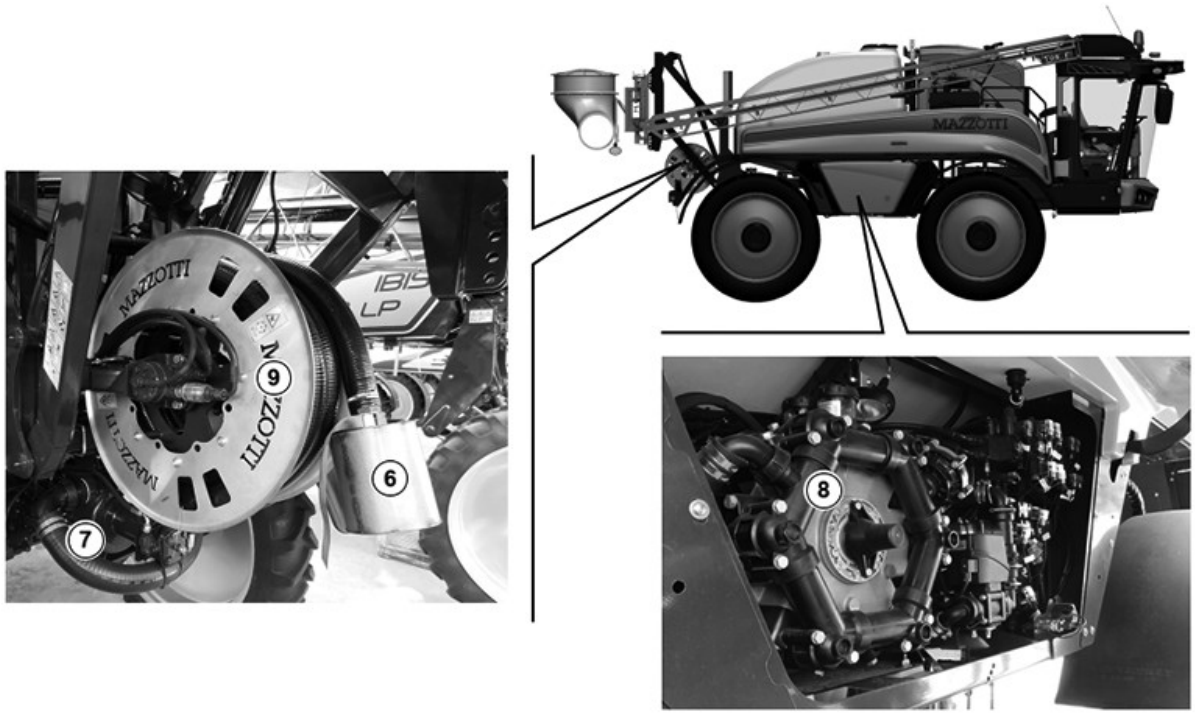
The filling system is self-priming, so it does not require the presence of liquids inside the pump or in the main tank.

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
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 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.

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:

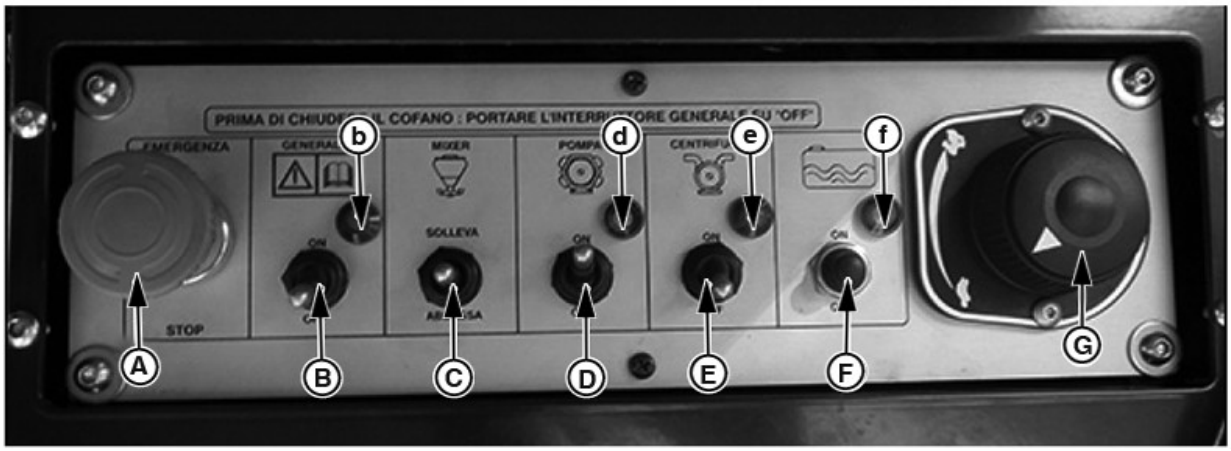
Reference	Description
1	Control Dashboard
2	Function Selectors of the Intake and Supply Pump
3	Visio Monitor
4	Eductor
5	Discharges and Couplings
6	Quick Coupler Syphon Pipe (membrane pump)
7	Centrifuge Pump (if equipped)
8	Membrane Pump (right hood for maintenance)
9	Hydraulic Hose Reel (if equipped)

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 Signalling 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	Not Applicable

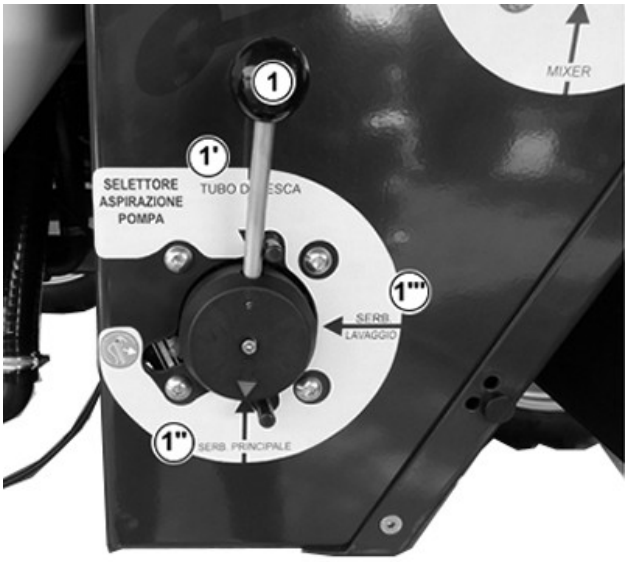
KWPZAG2,0000A51-19-03SEP21

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.

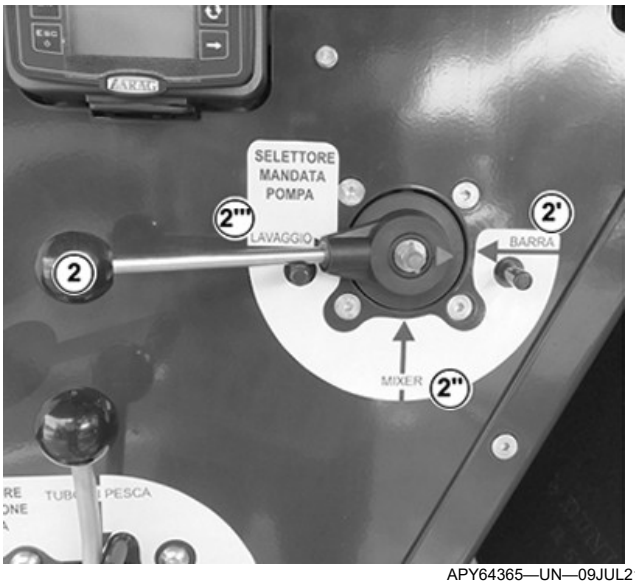


APY64385—UN—09JUL21

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.

APY64386—UN—09JUL21

3. Turn on the spraying computer X (Bravo 400s, Delta80 or virtual terminal) to enable the visio monitor to switch on, under the left bonnet of the machine.

APY64387—UN—09JUL21

K—Stirring Valve Switch

H—Recirculation Switch

4. To mix the chemical, turn on the stirring valve switch (K) which activates the stirring valve.

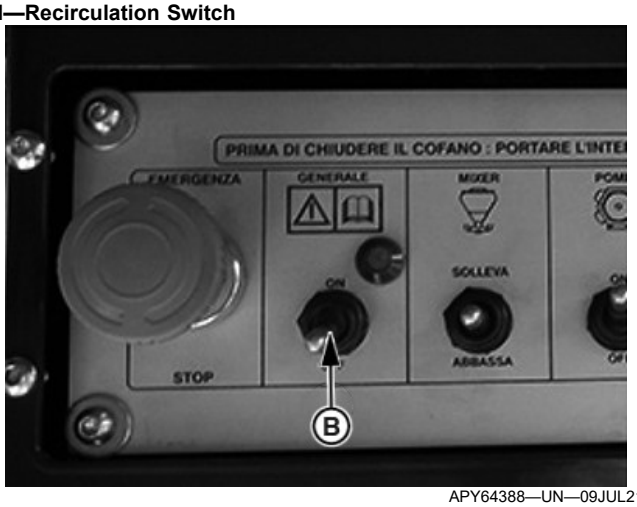
CAUTION: In order to obtain a uniform mixture, it is essential to keep the agitation function active inside the main tank, during and after the mixing phase. If the product used generates a lot of foam, it is recommended to use a special product that prevents the formation of foam. It is advisable to switch it off when the last few liters of the product are present in the main tank to avoid the formation of foam.

5. Make sure the function that closes recirculation using the recirculation switch (H) is OFF(light off).
6. 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.

KWPZAG2,0000A53-19-03SEP21

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.

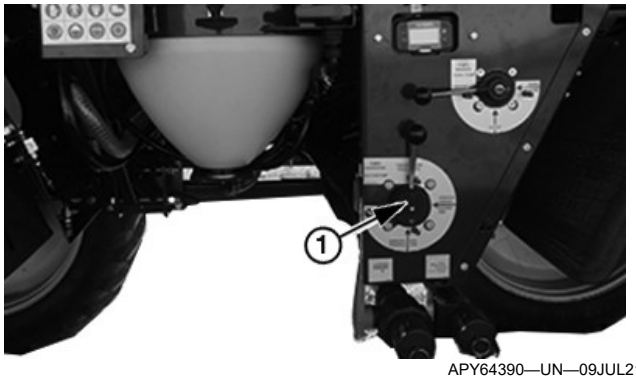
APY64389—UN—09JUL21

A—OK Key
B—ESC Key
C—Navigation Key
D—Navigation 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 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

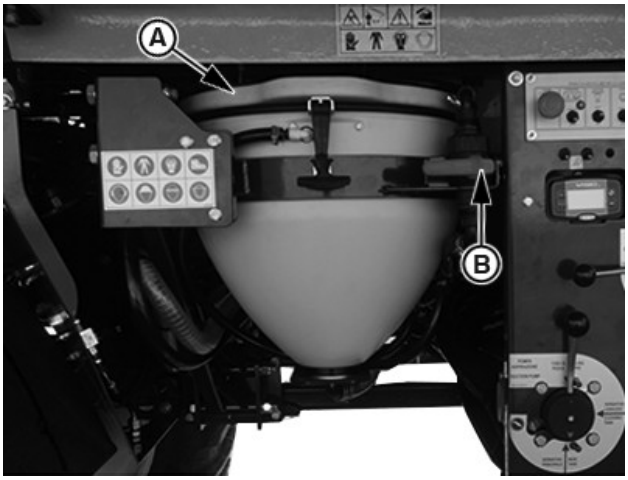
1. Choose a water loading system with water loading system selector (1).
2. Press the navigation key (D), which corresponds to the word Filling on the display.
3. Press the navigation key (D) again when the word Quantity appears.
4. Press navigation key (C) and navigation key (D) to set the desired quantity 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.

KWPZAG2,0000A54-19-03SEP21

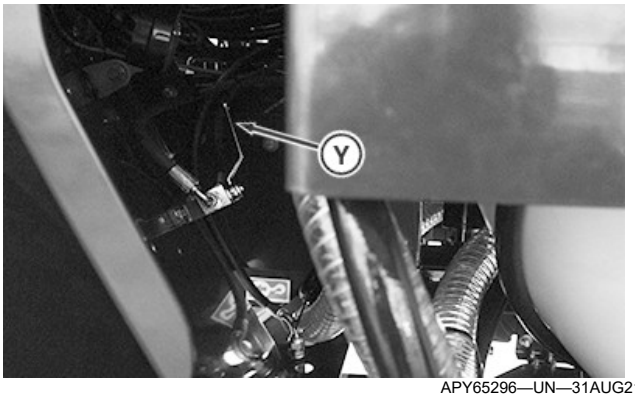
Eductor

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

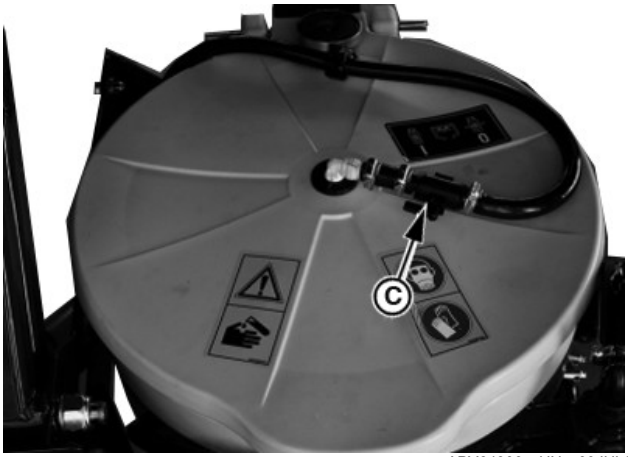


APY64392—UN—09JUL21

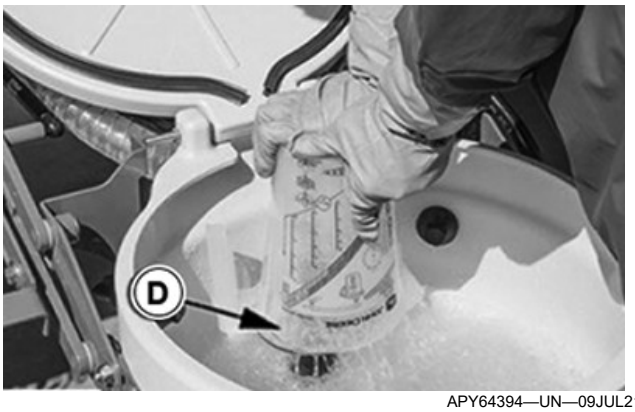


APY65296—UN—31AUG21

Y—Level



APY64393—UN—09JUL21



APY64394—UN—09JUL21

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).

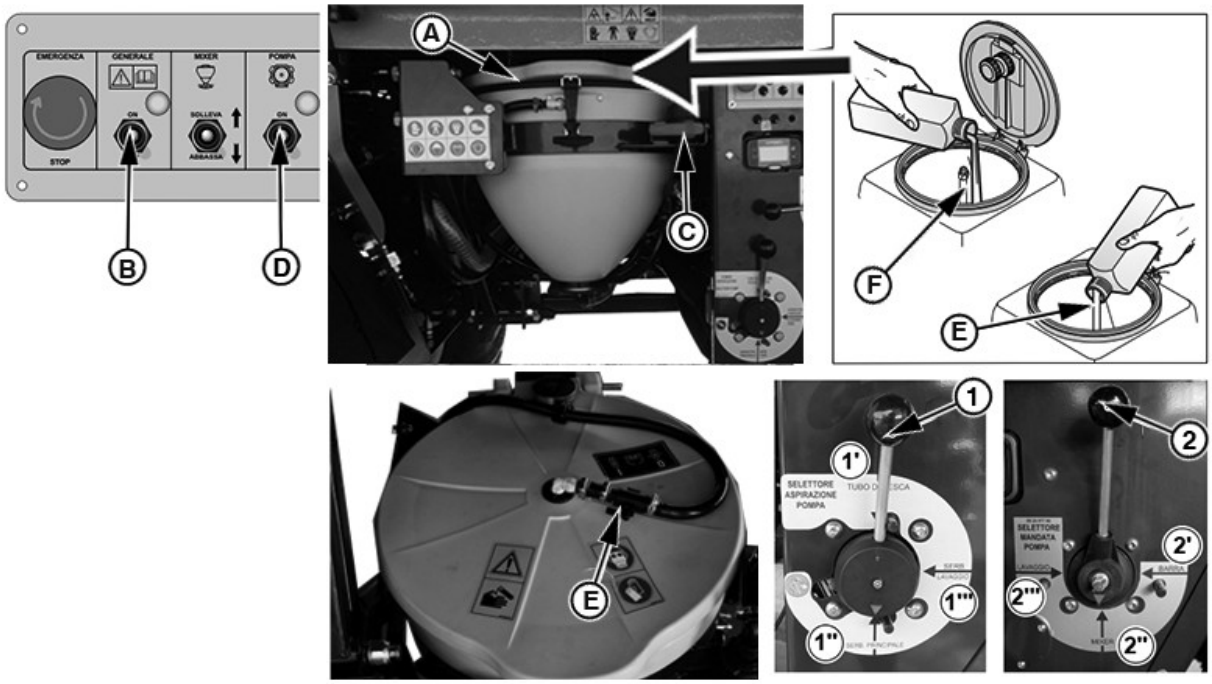
Reference	Description	Action
A	Cover	Opening: Unscrew Anti-Clockwise Closing: Screw Clockwise
B	Red Lever	Opens and closes the water flow in the eductor from the source selected with selector.
C	Black Valve	Operate the central bottle washer or washer-eductor nozzle (D).
D	Washer-Eductor Nozzle	Washer Eductor/Bottle Washer

Liquid Mixing/Microgranules 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.



APY64395—UN—09JUL21

A—Cover
B—Main Control Switch
C—Agitation Valve
D—Pump
E—Black Valve
F—Washing Device
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)

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.

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.

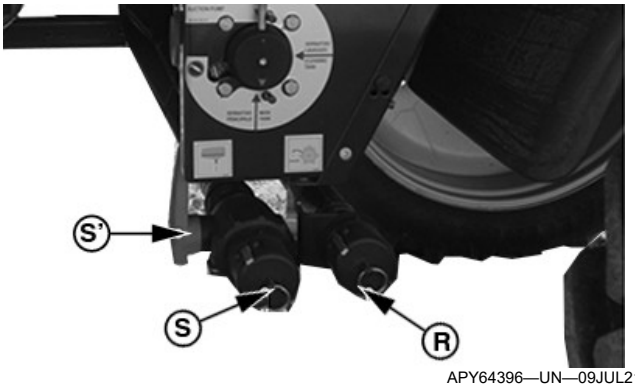
10. If necessary, rinse the product container using the gun or the central nozzle of the eductor, which can be operated using the specific black lever.
11. Close the black cover of the eductor by turning it clockwise until it clicks into place.
12. Close the red water loading lever, after mixing has 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.

KWPZAG2,0000A55-19-03SEP21

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

S—Tap
S'—Cap of the Main Tank
R—Syphon Pipe Connection
P—Coupling

APY64397—UN—09JUL21

Reference	Description
R	Coupling (P) syphon 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 syphon 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 syphon 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 syphon pipe brings water into the tank following this path:

source of water
▼
filter
▼
diaphragm pump
▼
[booms/mixer/washing (according to the selector position)]
▼
main tank

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 syphon pipe to the load connection by tightening the two hooks.
4. Rotate the intake selector into the position relative to the syphon 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 syphon 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

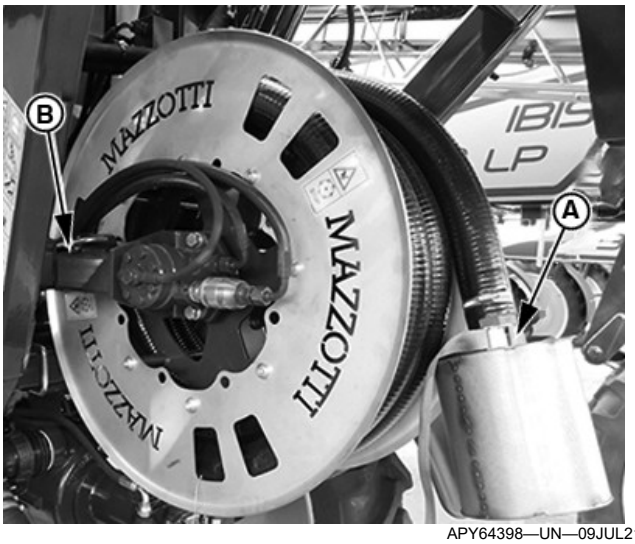
To load clean water into the washing tank located inside the main tank, it is necessary to draw from a source fitted with an external pump, through a tube or a suitable hose.

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.

KWPZAG2,0000A56-19-03SEP21

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 syphon 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.

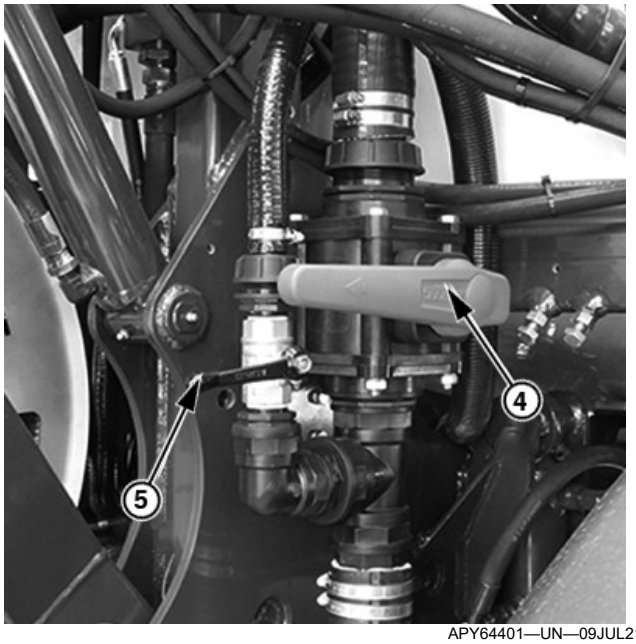
0	Rotation locked
LIBERO/FREE	Rotation of the hose reel is released and free to turn.
AVVOLGE/ ROLL	Holding the switch lever up, the coil will wind the tube. Always wind it a little at a time, accompanying it with one hand. If the hose reel does not work, make sure that the mechanical block (B) is not inserted.

NOTE: Periodically, as maintenance operation, it may be useful to grease the extension and the points indicated with the appropriate stickers.

KWPZAG2,0000A57-19-03SEP21

Centrifugal Pump

APY64400—UN—09JUL21



APY64401—UN—09JUL21

1—Centrifugal Pump
4—Tap
5—Tap

The centrifugal pump (1) sucks the water with the syphon 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.

KWPZAG2,0000A58-19-03SEP21

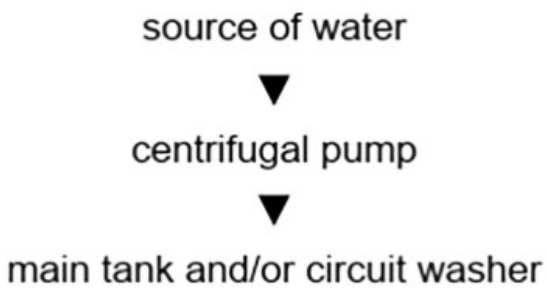
Water Loading with Centrifugal Pump—Intake Side

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 syphon pipe mounted on the hose reel.

The loading of the water in intake by means of a syphon 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.
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.

KWPZAG2,0000A59-19-03SEP21

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.

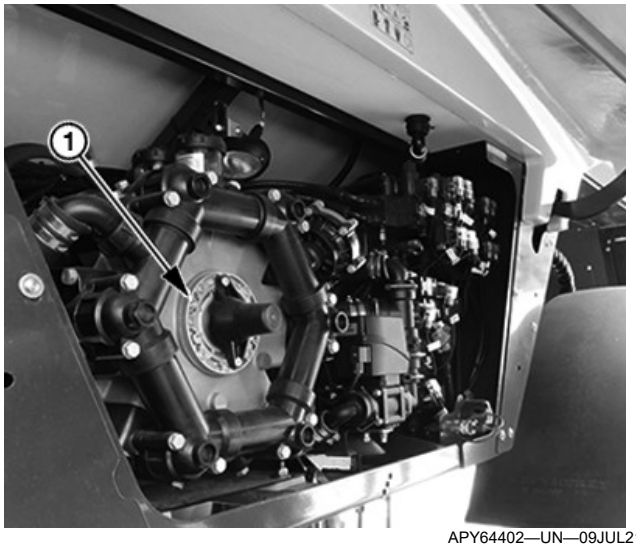
The spraying pump (1) generates the pressure necessary to feed the flow of crop protection solutions into the circuits.

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.

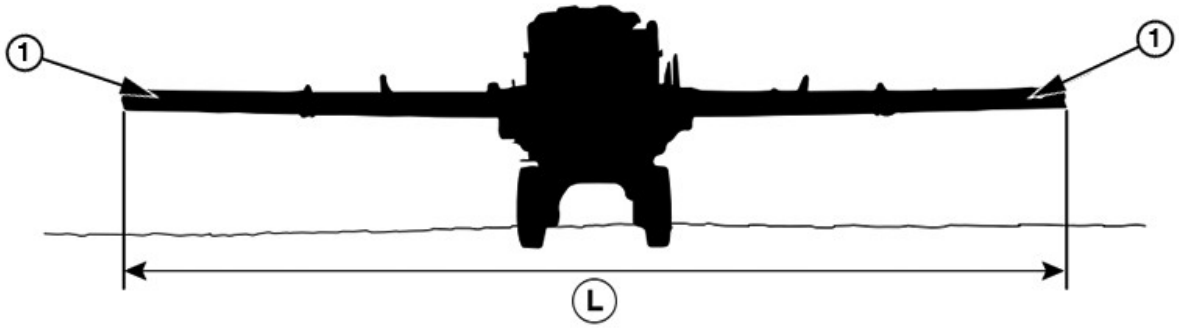
The system is protected by a maximum pressure valve (set at the maximum pressure indicated on the identification plate).

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

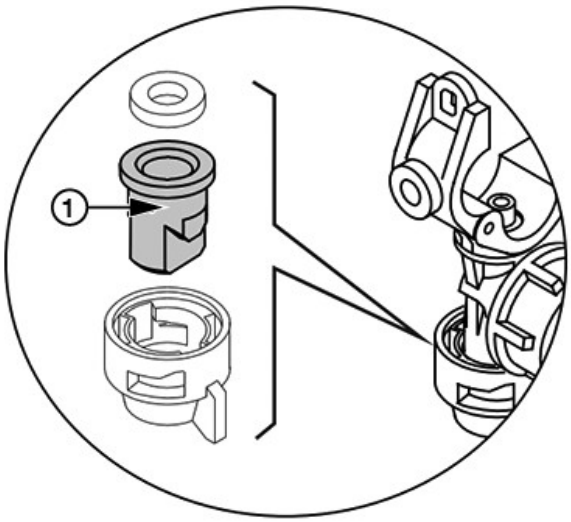
Nozzles

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



APY64405—UN—09JUL21

1—Nozzle

The nozzles (1) are the terminals that differentiate the type of diffusion of the treated product.

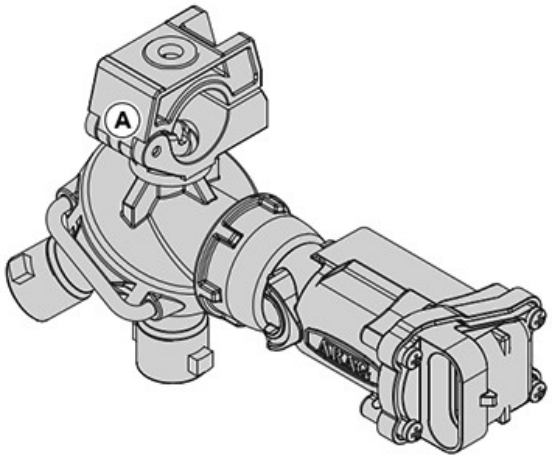
They can be replaced according to requirement or the type of chemical to be sprayed.

Consult the tables of flow rates per hectare at the end of the Specifications section.

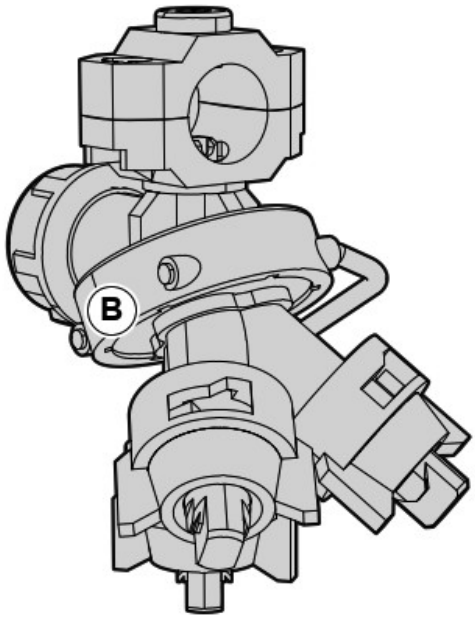
Poor maintenance or excessive wear of the nozzles causes insufficient distribution quality.

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:

	ø Fan	Max Absorption
Air Sleeve 620	620 mm	15 hp
Air Sleeve 820	820 mm	35 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.

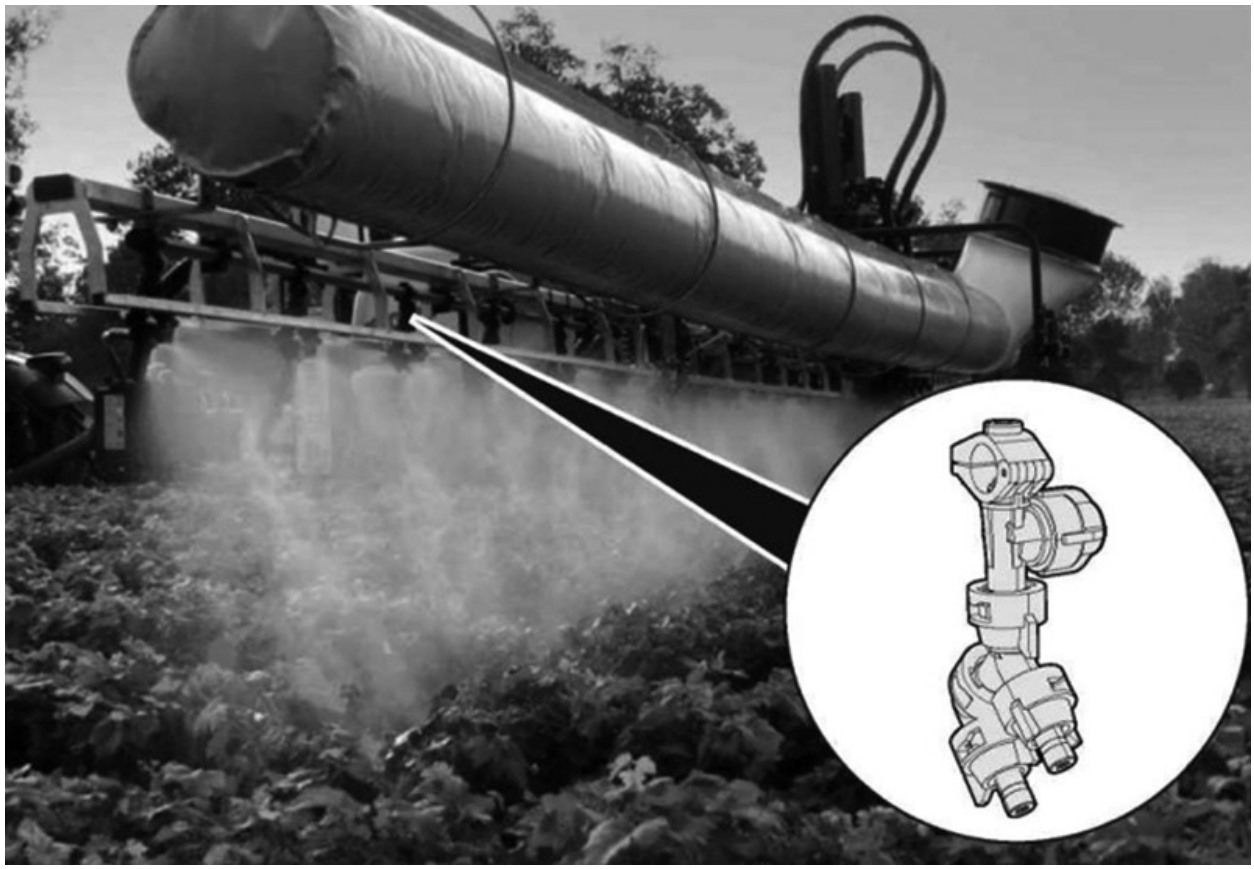
The high quantities distributed with traditional sprayers, causing washing away of the vegetation, disperse most of the active ingredient used on the ground.

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.

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.

KWPZAG2,0000A5E-19-03SEP21

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 anticryptogamic 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: UPPER X VOL/TANK = FILL (consider only the whole number without decimals).**
- **Final filling quantity calculation: (UPPER X VOL) - (TANK x FILL) = FINAL (the result are liters).**
- **Calculation quantity of plant protection product for complete filling: DOSE x (TANK/ VOL) = 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: DOSE X FINAL = 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.

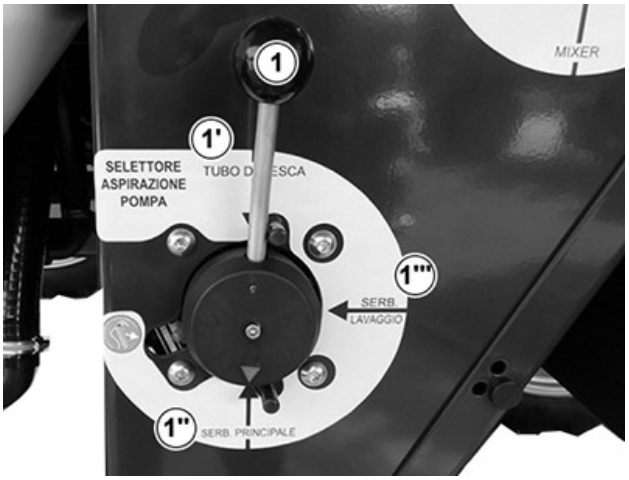
The design of the system and the installation of the components do not allow the return of substances from the main tank to the intake device.

The filling system is self-priming so it does not require the presence of liquids inside the pump or in the main tank.

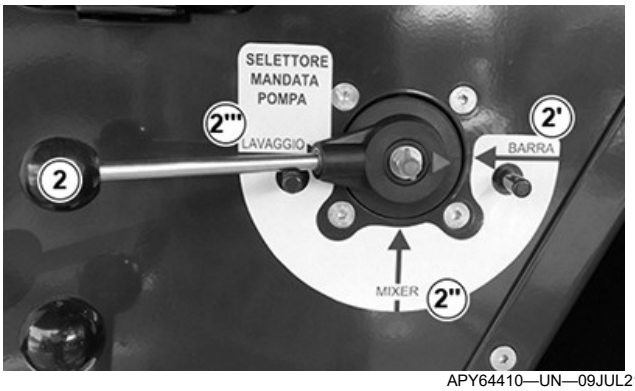
Distribution of Agrochemical Mixtures

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.



APY64409—UN—09JUL21



APY64410—UN—09JUL21

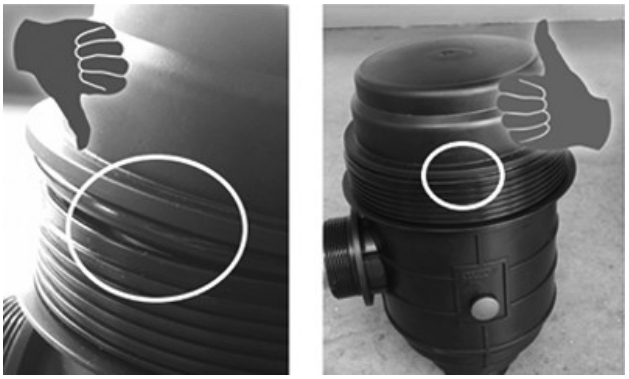
1—Pump Operation Selector
1'—Quick Coupling Suction Hose for Membrane Pump
1''—Main Tank
1'''—Clean Water Tank for Washing
2—Pump Supply Selector
2'—Spraying Boom
2''—Chemical Product Eductor (mixer)
2'''—Inner Walls of the Main Tank (washing)

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” (1II) 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

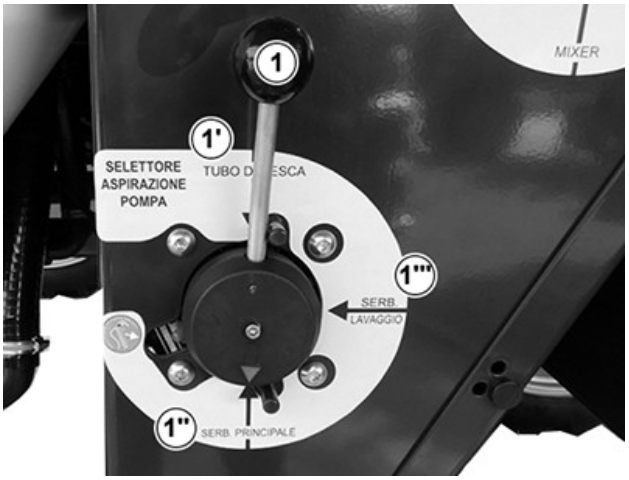
IMPORTANT: If the filter and the O-ring gasket are not properly refitted, the pump will lose power and will not work properly.



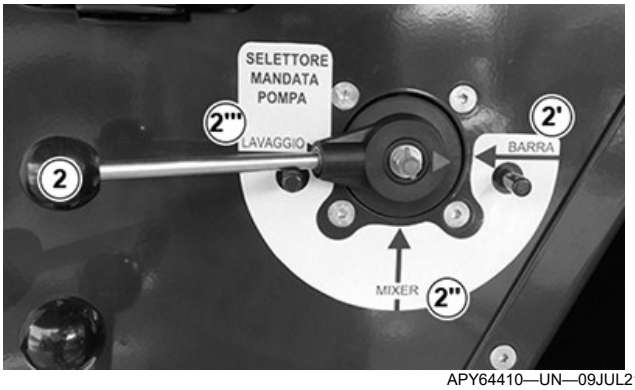
APY64415—UN—09JUL21

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:



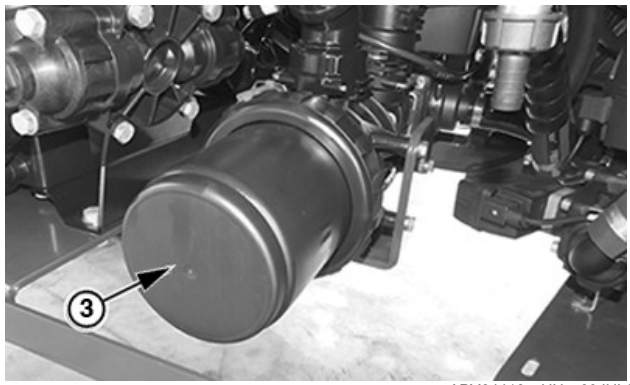
APY64409—UN—09JUL21



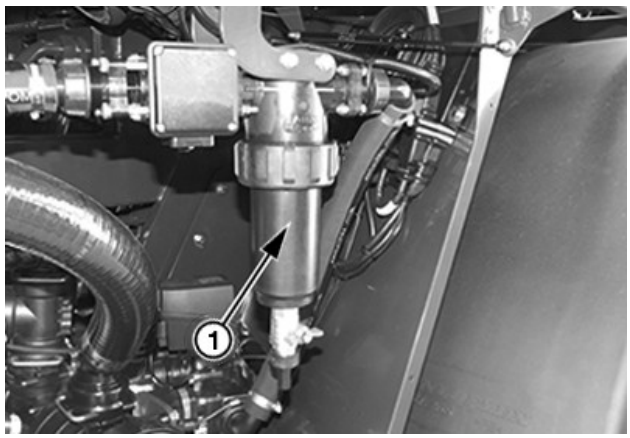
APY64410—UN—09JUL21

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)

1. Stop the pump and engage the parking brake.
2. Turn the pump operation selector (1) and pump supply selector (2) to neutral position: Quick coupler suction hose for membrane pump (1') and inner walls of the main tank (washing) (2''').



APY64413—UN—09JUL21



APY64414—UN—09JUL21

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').

KWPZAG2,0000A60-19-03SEP21

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.

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.

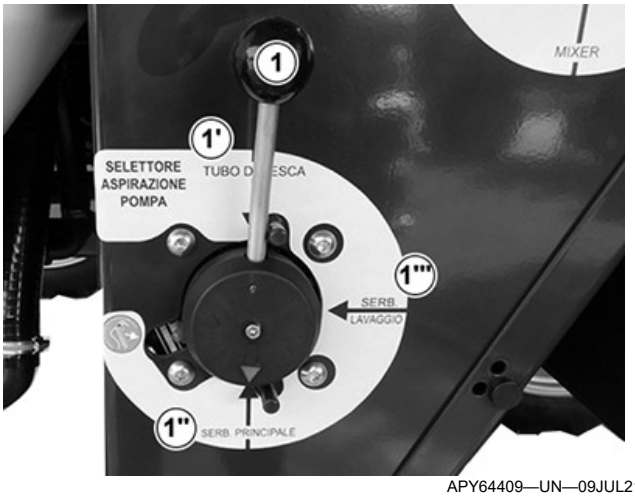
There are two types of residuals:

1. Dead residue (i.e. non-recoverable): It can only come out of the nozzles. It can be disposed of by pulverisation 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 pupulverization procedure or by an emptying procedure.

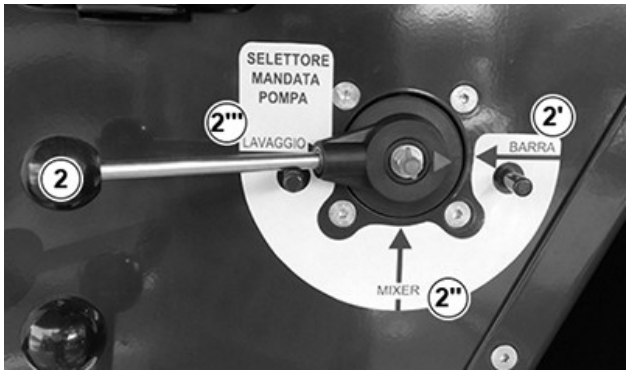
To minimize the residual quantity present in the tank, when 100-150 l of mixture remain, set the selectors to the main tank (1") - spraying boom (2'), configuration, taking care to disable the stirring, until the main tank is completely empty.

Two different washing procedures can be distinguished:

1. Spraying boom washing
2. Complete washing



APY64409—UN—09JUL21



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)

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 syphon/ 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

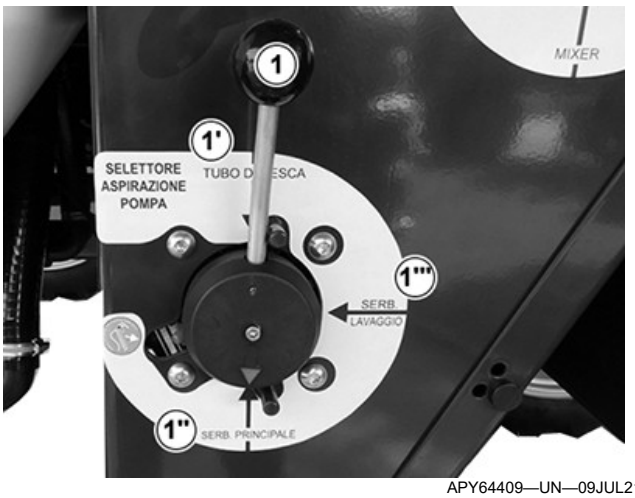
Once the distribution of the mixture has been completed, and after tank has been emptied, proceed as follows:

1. Perform the basic procedure.
2. Switch on membrane pump.

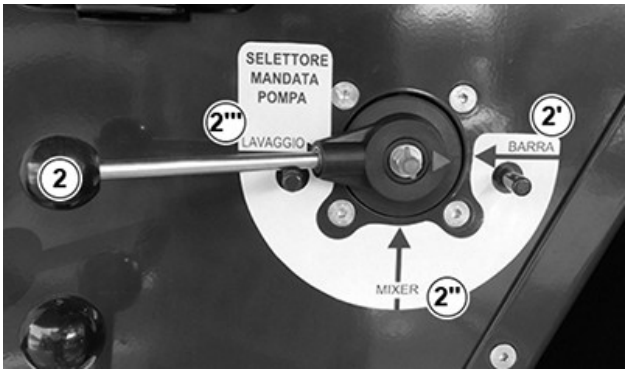
APY64420—UN—09JUL21

H—Button

3. Activate agitation by pressing the button (H).



APY64409—UN—09JUL21



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.

KWPZAG2,0000A61-19-03SEP21

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.

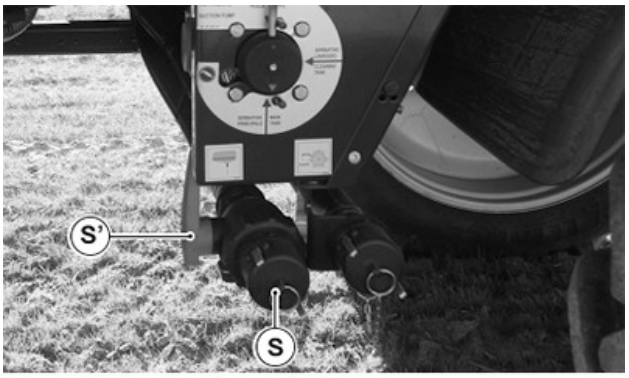
KWPZAG2,0000A62-19-03SEP21

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

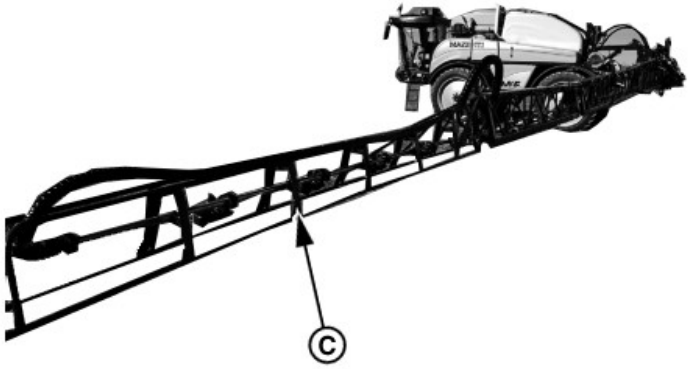
S—Cap
S'—Valve

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).

KWPZAG2,0000A63-19-03SEP21

Spray Boom

APY64424—UN—20JUL21



APY64425—UN—20JUL21

A—Spray Boom
B—Breakaway Boom Section

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).

C—Protection for Nozzles

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
32 m	HSS Big	28 m	30 m
33 m	HSS Big	28 m	30.5 m
34 m	HSS Big	28 m	31 m
36 m	HSS Big	28 m	32 m

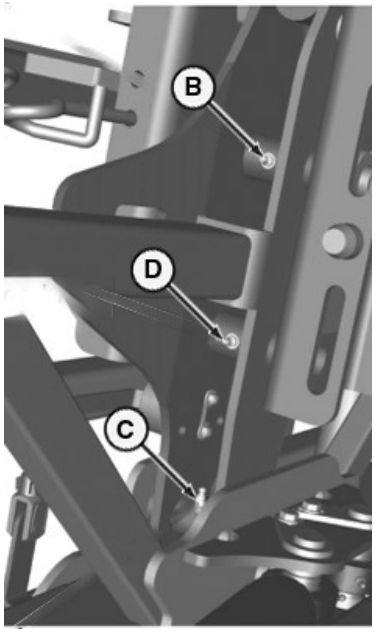
KWPZAG2,0000B46-19-07SEP21

24—30 m HC Spray Boom

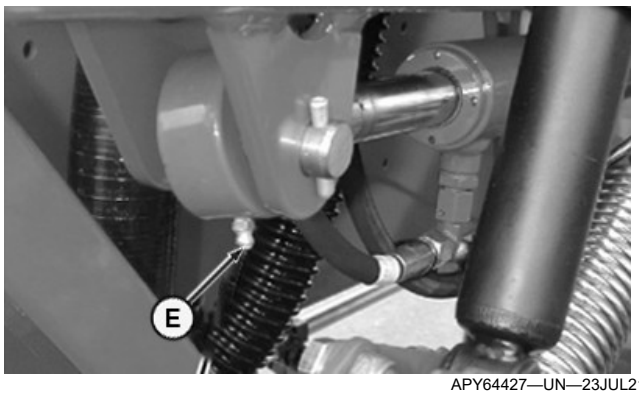
Maintenance

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.

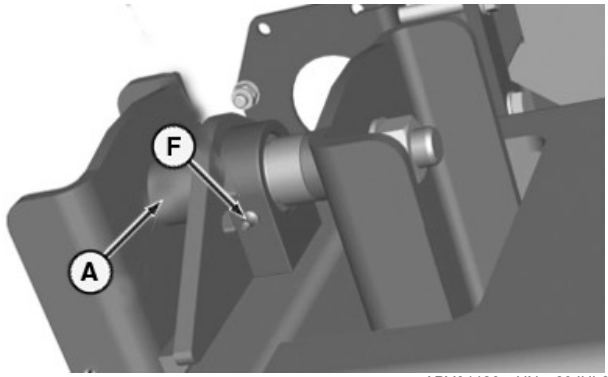


APY64426—UN—23JUL21



APY64427—UN—23JUL21

APY64429—UN—23JUL21



APY64428—UN—23JUL21

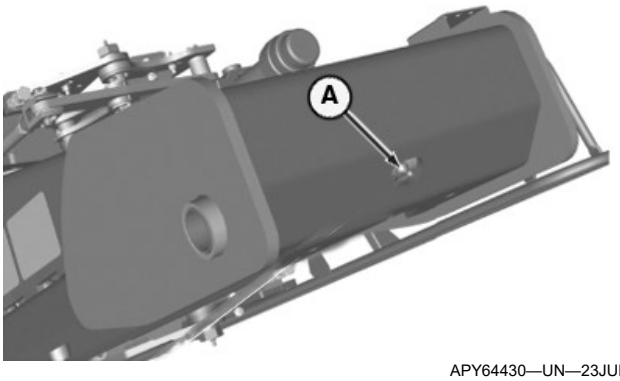
A—Highest Pin Joint
B—Centre-Most Pin Joint
C—Lowest Pin Joint
D—Locking Point
E—Hydraulic Slope Correction
F—Grease Nipple
G—Folding Cylinder Pin Joint
H—Pin Joint Balancing

- 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.

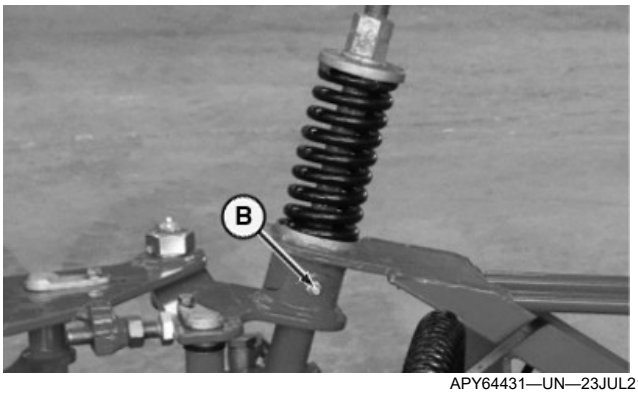
- At the attachment points of the buffer cylinders.
- At the pin joint of the middle of spray boom.
- With the upper and lower hinge points of the spray boom parts.
- At the lowest bearing of the impact protection.

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.

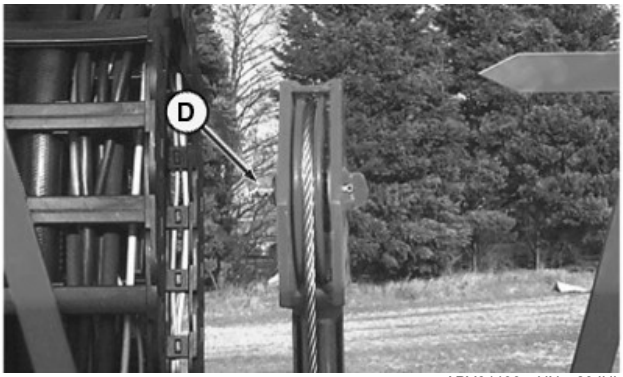


APY64430—UN—23JUL21

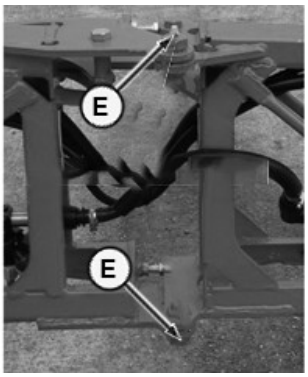


APY64431—UN—23JUL21

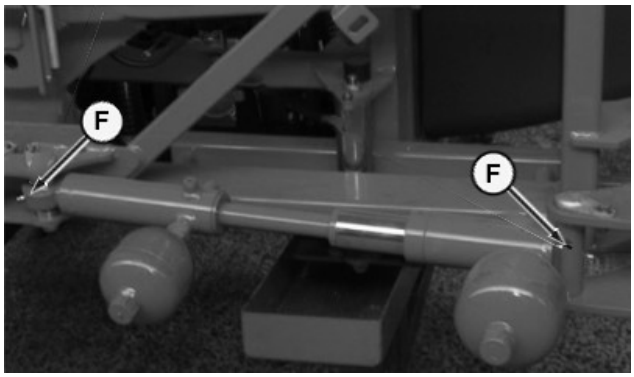
APY64432—UN—23JUL21



APY64433—UN—23JUL21



APY64434—UN—23JUL21



APY64435—UN—23JUL21

A—Lowest Attachment Point
B—Safety Tip End
C—Guide
D—Grease Nipple Cable Roller
E—Pin Joint of Spray Boom Section
F—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:

- **The wet system should be rinsed thoroughly with clean water.**
- **The exterior of the machine should be cleaned thoroughly.**

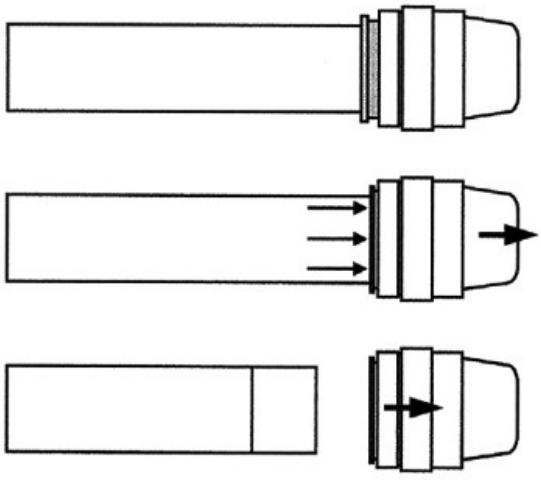
- **Switch the tractor off and remove the key from the ignition.**
- **Engage the park brake of the tractor.**
- **Release the pressure in the wet system by opening the stop valves and placing them respectively to the filling setting.**
- **Carefully follow the instructions given. In the event of injury or in case of contact with materials:**

  - **Clean the point of contact with a lot of water.**
  - **Consult a physician immediately.**

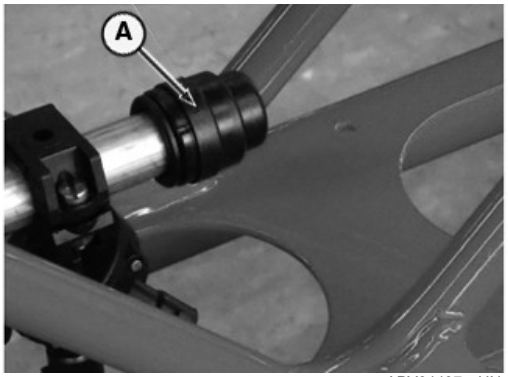
NOTE: If the machine is being put away for a short or longer period of time, it is recommended to lubricate and clean it first. If it is lubricated first prevents dirt, agents, fertiliser, and water from entering the bearings.

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.

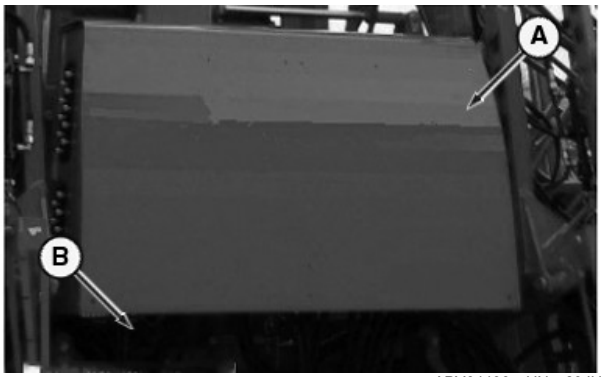
Adjustment (Throttle Valves)

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.



APY64438—UN—23JUL21

A—Protective Cover
B—Hydraulic Block

NOTE: Functions that belong to solenoid valves on the hydraulic blocks (B) are located on the sticker in the SHC box.

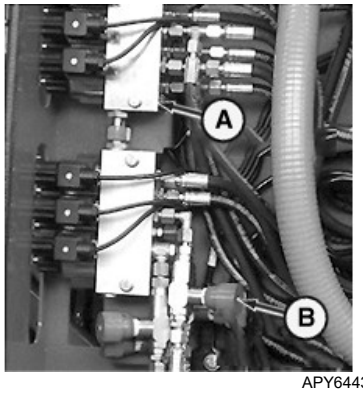
The throttle valves are set in such a manner by the

manufacturer that acceptable hydraulic pressure and oil flow are achieved in actual application with appropriate speed. In exceptional cases, e.g., if the tractor 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 tractor off and remove the keys from the ignition.
4. Engage the parking brake of the tractor and place wheel chocks before the wheels of a drawn machine.



APY64439—UN—31JUL21

A—Hydraulic Block
B—Throttle Valve

5. Remove the protective cover of the hydraulic block (A) for throttle valves (B).

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.

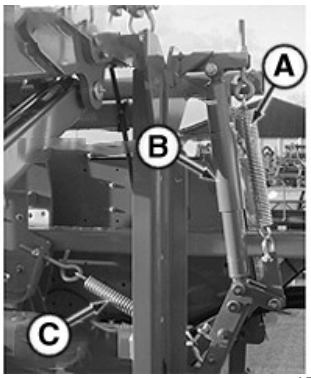
Directions

- 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.

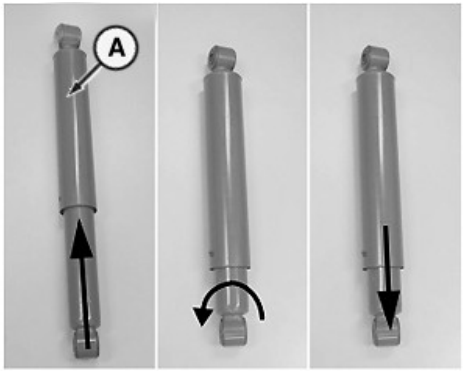
1. Fold the spray boom out completely.
2. Let the spray boom down on proper supports or close the stop valve on the hydraulic lift cylinder.
3. Take the pressure off the hydraulic system.
4. Switch the tractor off and remove the keys from the ignition.
5. Engage the parking brake of the tractor and place wheel chocks before the wheels of a drawn machine.
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

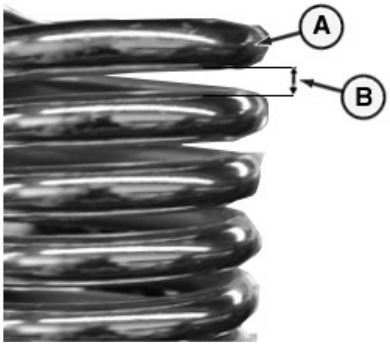


APY64442—UN—31JUL21

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 the 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

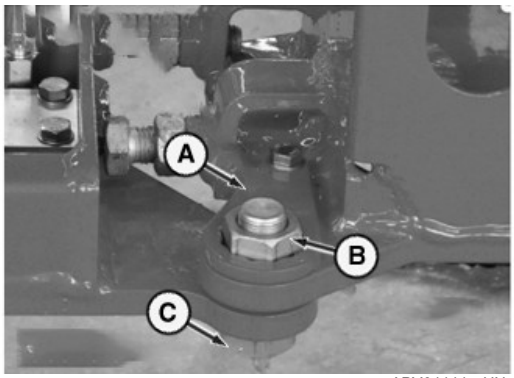
After unfolding the spray boom, the lower profile must be properly positioned horizontally and vertically. If one or more spray boom parts not aligned, they can be adjusted.

- Park the tractor and sprayer on a firm, horizontal base.
- Fold the spray boom out completely and lock the pendulum lock.
- Depressurize the hydraulic system.
- Switch the tractor 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

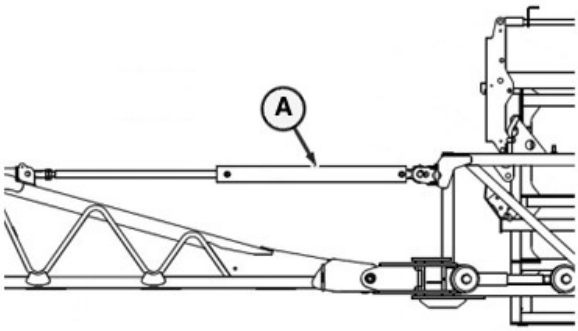
A—Safety Plate
B—Check Nut
C—Eccentric Bolt

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.

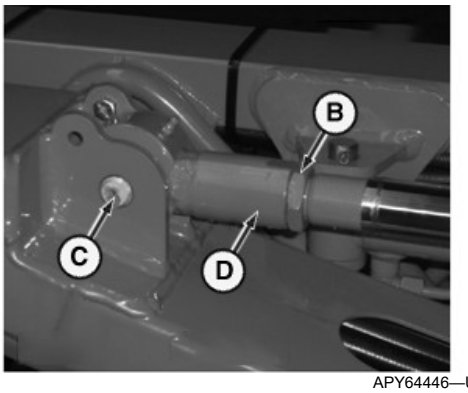
Middle Section

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

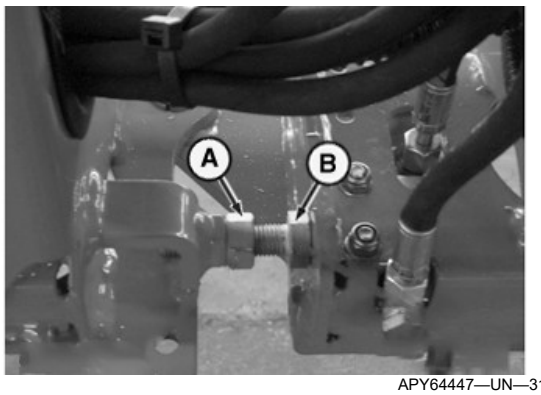
The length of the hydraulic cylinders (A) is adjusted in such a way in the factory that the spray boom valves are horizontally level and aligned with the middle section, when the hydraulic cylinders (A) are fully extended. Only change the angle upwards. In order to set the spray boom valves from the horizontal position also downwards.

- Unfold the spray boom and place it on firm supports.
- Depressurize the hydraulic system.
- Switch the tractor off and remove the keys from the ignition.
- Engage the parking brake of the tractor and place wheel chocks before the wheels of a drawn machine.
- 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.

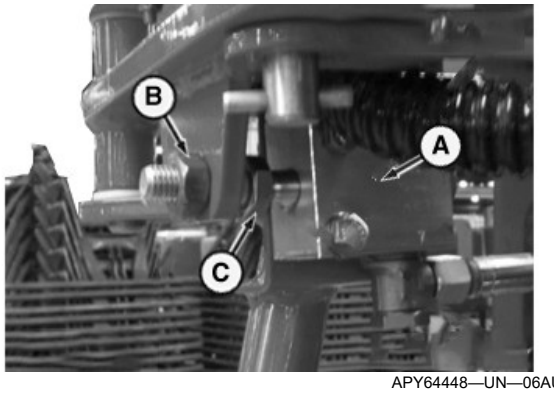
The boom can be adjusted vertically with the adjusting bolts in the subprofile.



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, the adjusting (C) bolt 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.
	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 authorised person attend to the problem.
	Error in the electric drive of the hydraulic blocks	Use the emergency control to fold the spray boom in. Contact John Deere authorized dealer attend to the problem.

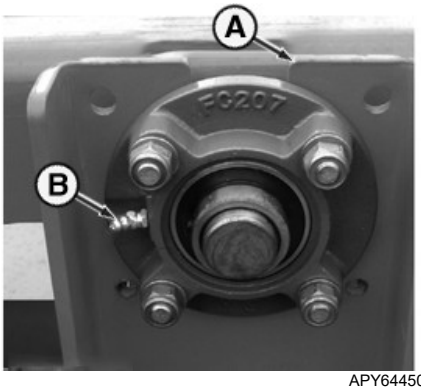
KWPZAG2,0000B47-19-07SEP21

24—36 m HSA-HSS Spray Boom

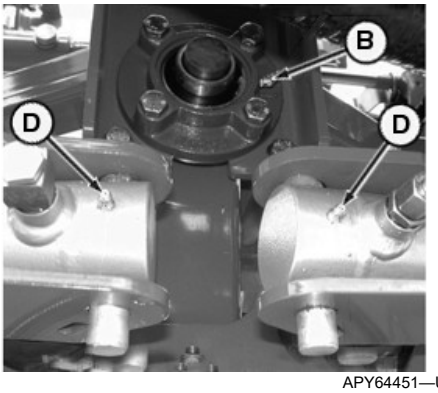
Maintenance

Lubricating Points

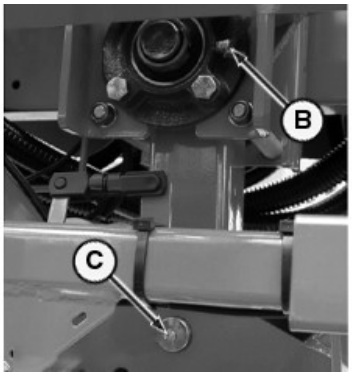
All grease nipples can be filled with a quality brand universal grease type. Use a mechanical grease pump. Two injections per grease nipple are sufficient.



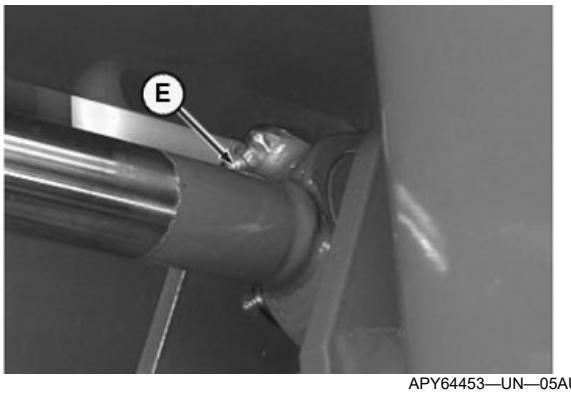
APY64450—UN—31JUL21



APY64451—UN—05AUG21



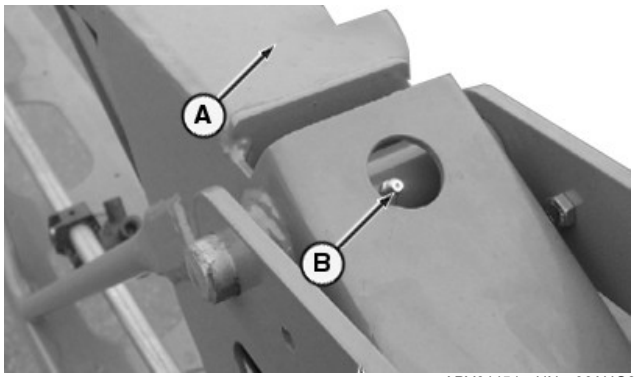
APY64452—UN—05AUG21



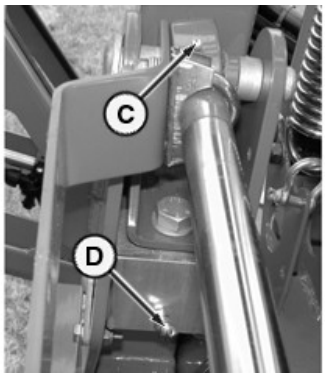
APY64453—UN—05AUG21

A—Highest Pin Joint
B—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



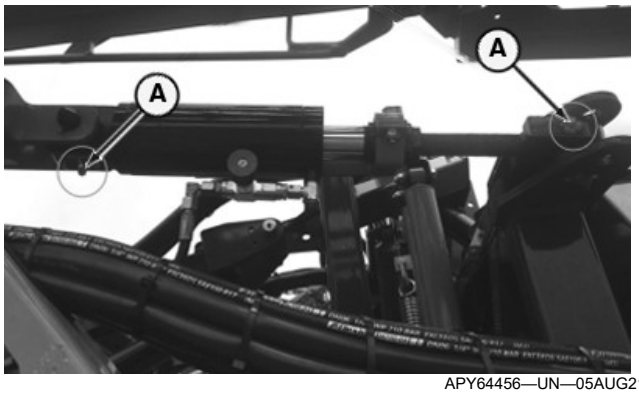
APY64455—UN—05AUG21

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).

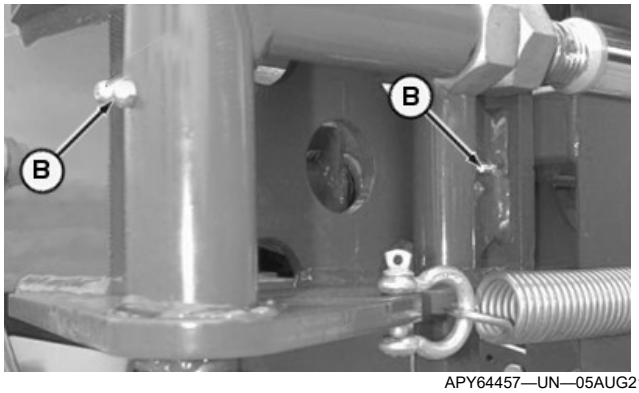
HSS Spray Boom



APY64456—UN—05AUG21

A—Cylinder's Independent Slope Correction

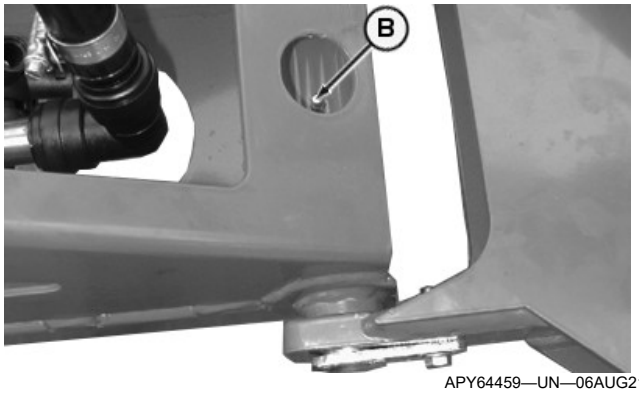
- At the cylinder's independent slope correction (A).



APY64457—UN—05AUG21

B—Horizontal Pin Joint

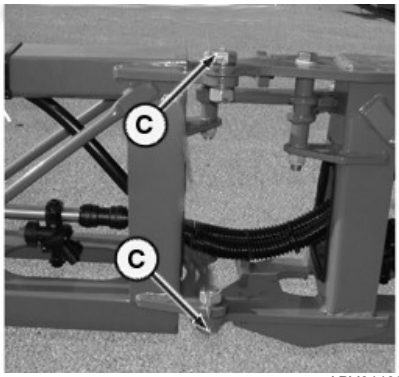
- At the horizontal pin joint (B) in the middle of spray boom.



APY64459—UN—06AUG21

B—Vertical Pin Joint

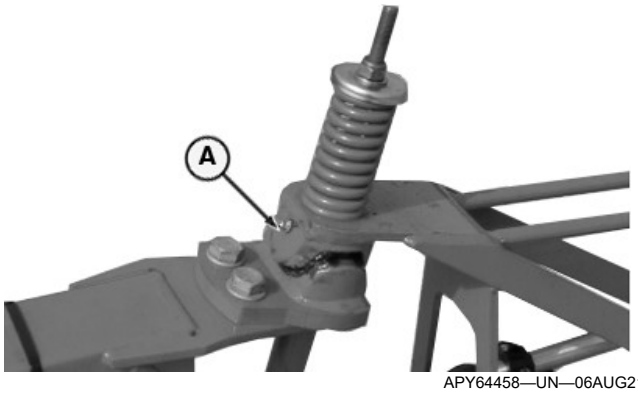
- At the vertical pin joint (B) of the spray boom halves.



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).



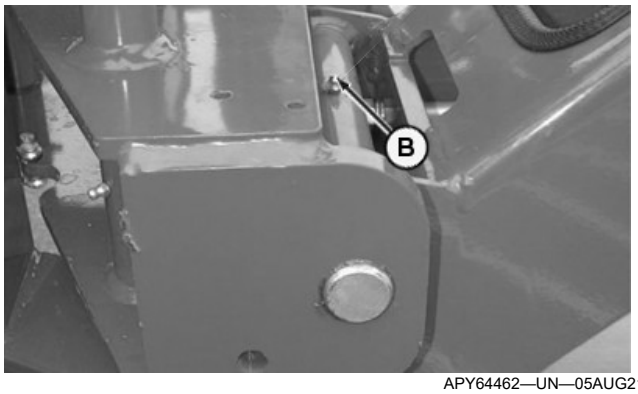
APY64458—UN—06AUG21

A—Impact Protection

- At the lowest bearing of the impact protection (A).

NOTE: Grease the guides of the middle section and the lifting frame.

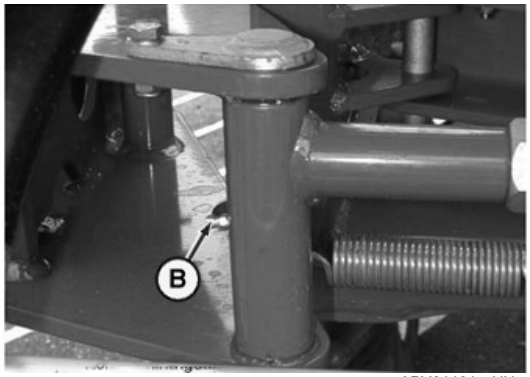
HSA Spray Boom



APY64462—UN—05AUG21

B—Vertical Hinge Shaft

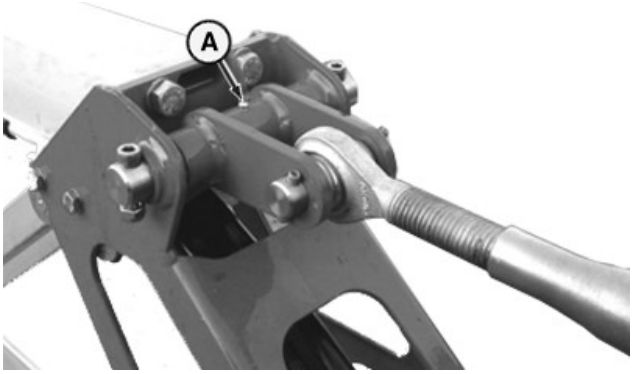
- Vertical hinge shaft (B) of boom parts.



APY64464—UN—02AUG21

B—Horizontal Hinge Shaft

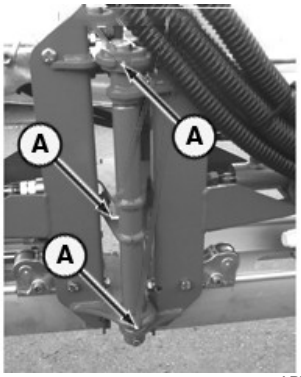
- Horizontal hinge shaft (B) of boom parts.



APY64463—UN—06AUG21

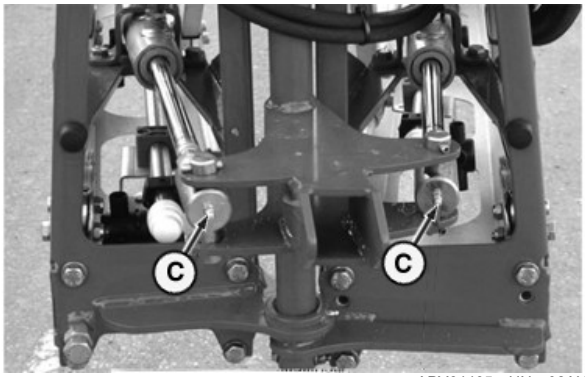
A—Coupling Point of the Boom Parts

- Coupling point of the boom parts (A).
- Folding cylinder hydraulic coupling points.
- Axle between innermost and outermost side plate.



APY64461—UN—05AUG21

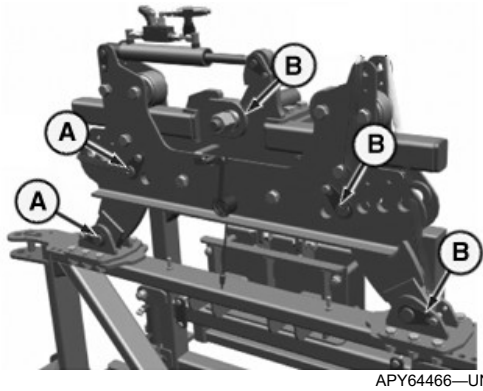
A—Hinge Point of Outermost Spray Boom Part



APY64465—UN—02AUG21

C—Folding the Coupling Point of the Boom Parts

Flat Land Balancing



APY64466—UN—02AUG21

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 tractor off and remove the key from the ignition.**
- **Engage the park brake of the tractor.**
- **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, fertiliser, and water from entering the bearings.

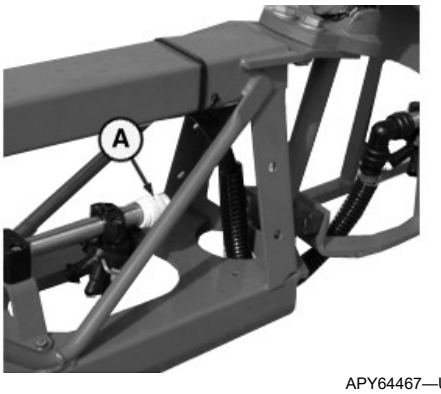
Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.

NOTE: Coat blank parts such as piston rods of hydraulic cylinders with preserving grease.

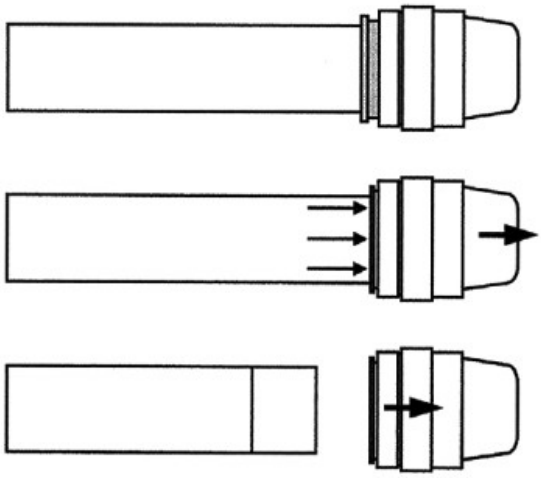
Draining Spray Lines

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

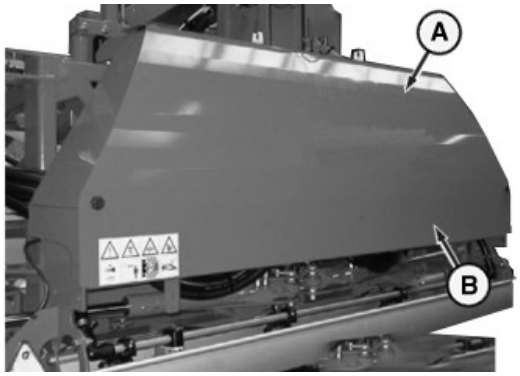
Adjustment

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 (B). The hydraulic block is located under the protective cover (A).



APY64469—UN—06AUG21

A—Protective Cover
B—Hydraulic Block

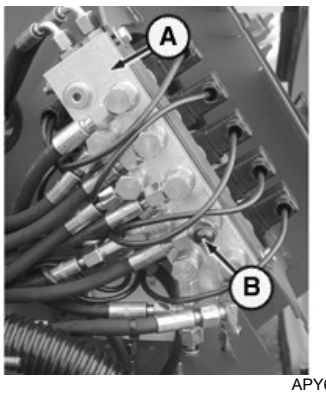
NOTE: Functions that belong to solenoid valves on the hydraulic blocks (B) are located on the sticker in the SHC box.

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 tractor 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 tractor off and remove the keys from the ignition.
- Engage the parking brake of the tractor and place wheel chocks before the wheels of a drawn machine
- Remove the protective cover (A) for throttle valves on the hydraulic block (B).
- Remove the small protective cover (A) and loosen the lock nut on the set screw a few torques.



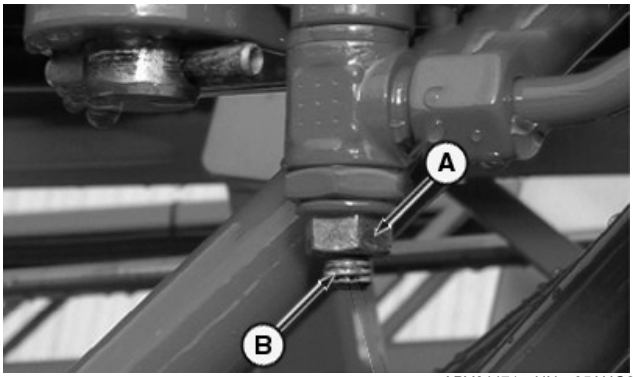
APY64470—UN—02AUG21

A—Hydraulic Block
B—Protective Cover

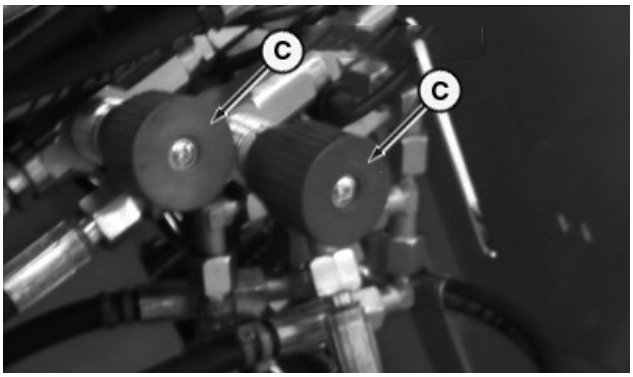
- Set the throttle valve by turning the set screw, a ¼ revolution could provide a significant change.
- Fasten the lock nut on the set screw again and put the small protective cover (B) back in place.
- Put the protective cover (B) of the hydraulic block (A) back in place.
- Test the new settings of 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.

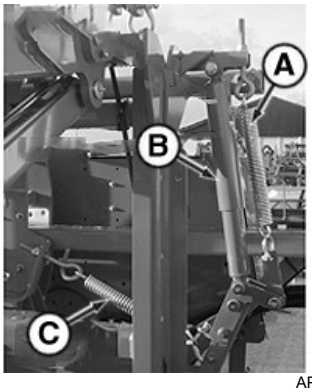
NOTE: The furthest position can be seen on the ring markings on the set screw. The throttle valve is completely open in this case.

- 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)

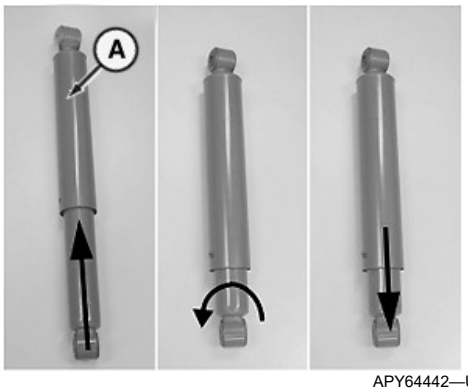
A few springs and dampers (B) have been mounted to prevent unexpected movement of spray boom. They have to be readjusted if the balance has been altered or after a spring or damper (B) has been replaced.

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 tractor off and remove the keys from the ignition.
5. Engage the parking brake of the tractor and place wheel chocks before the wheels of a drawn machine.
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

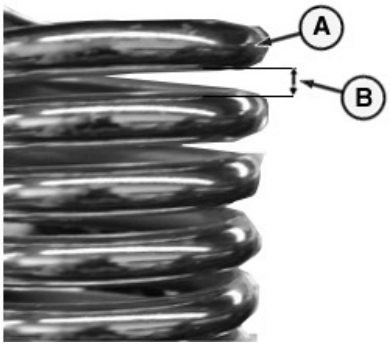


APY64442—UN—31JUL21

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 the 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

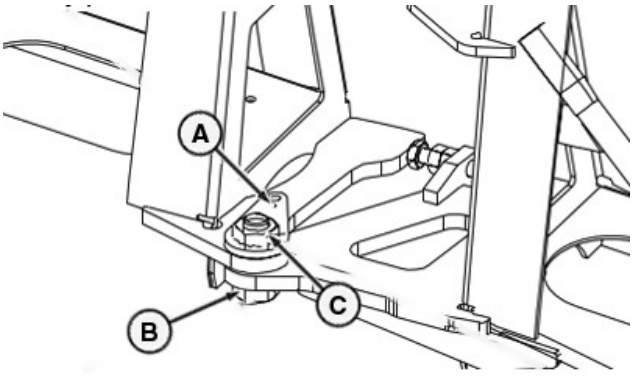
After unfolding the spray boom, the lower profile must be properly positioned horizontally and vertically. If one or more spray boom parts not aligned, they can be adjusted.

- Park the tractor and sprayer on a firm, horizontal base.
- Fold the spray boom out completely and lock the pendulum lock.
- Depressurize the hydraulic system.
- Switch the tractor 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.



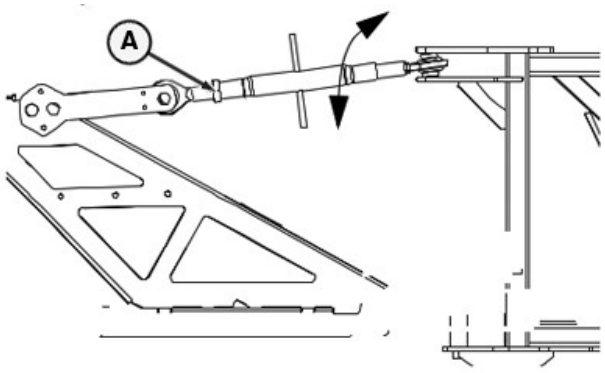
APY64476—UN—05AUG21

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

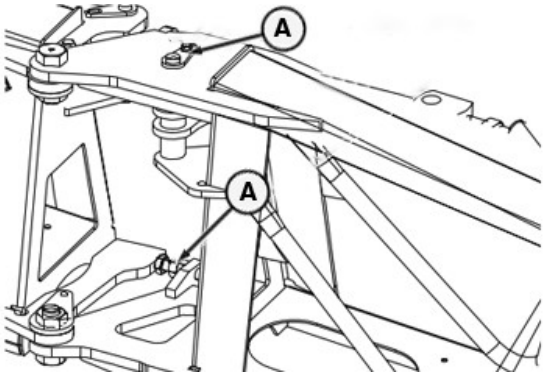
- Loosen the lock nut (A) by a few turns.
- Adjust the top link until the boom is horizontal.
- Tighten the lock nut (A) again.

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.

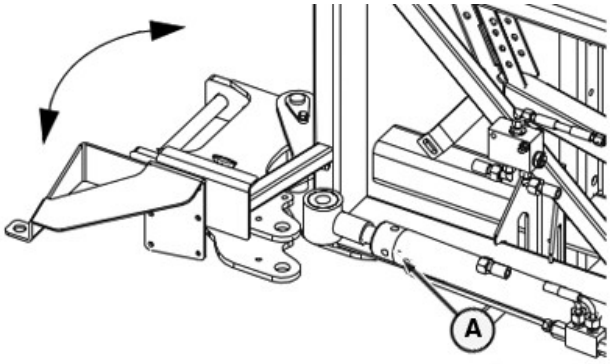


APY64478—UN—04AUG21

A—Adjusting Bolt

- Fasten the first lock nut again, without changing the length of the stop bolts.

Middle Section

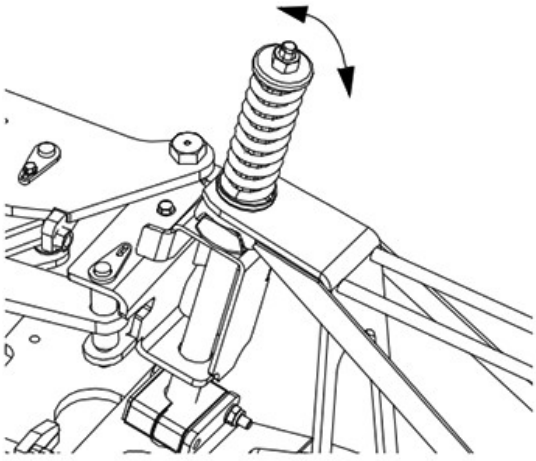


APY64479—UN—05AUG21

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



APY64480—UN—20JUL21

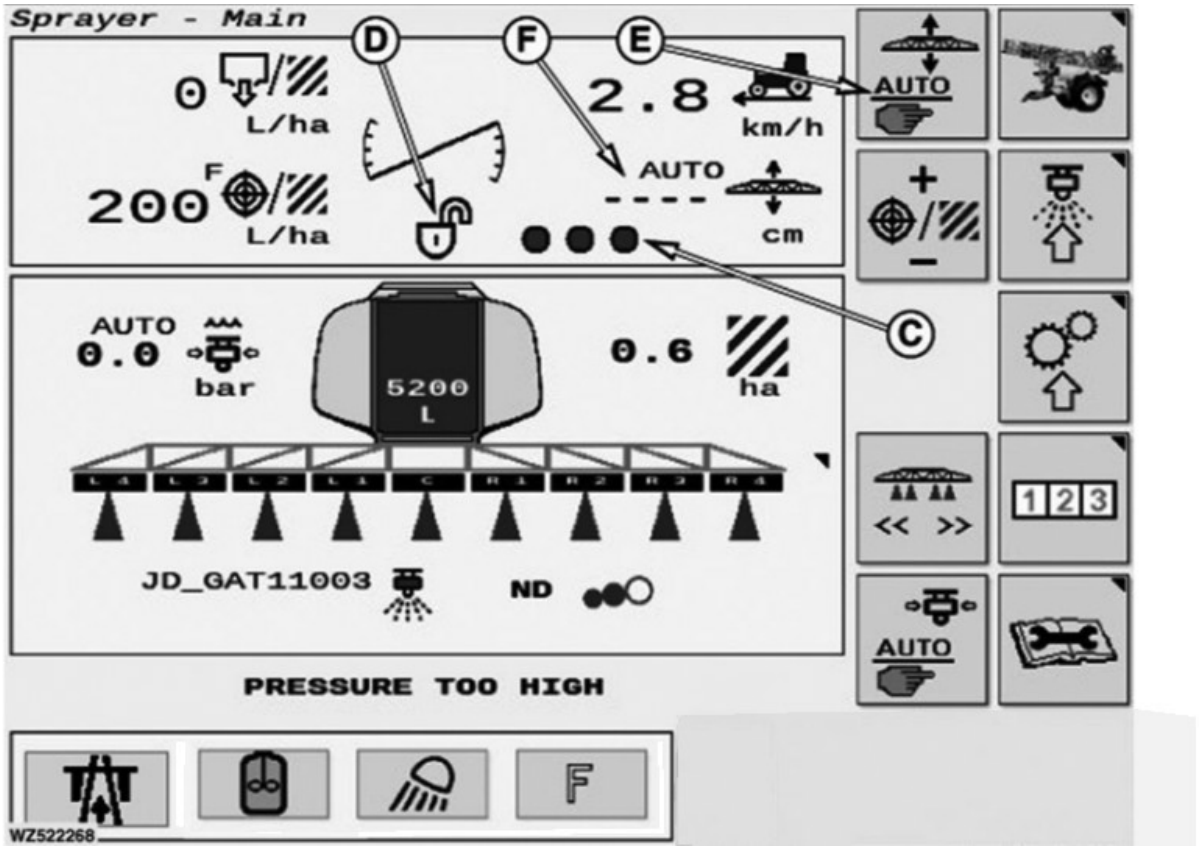
The safety tip end can be adjusted if it breaks out too quickly, e.g., while driving on the field, or if it does not break out fast enough. The safety tip end can be adjusted with the tension adjusting nut above the spring. Increasing the spring pressure will slow down the breaking out of the safety 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.
	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 authorised person attend to the problem.
	Error in the electric drive of the hydraulic blocks	Use the emergency control to fold the spray boom in. Contact John Deere authorized dealer attend to the problem.

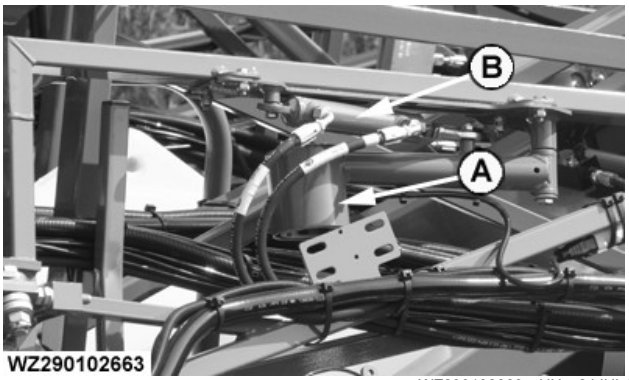
KWPZAG2,0000B48-19-07SEP21

John Deere TerrainCommand™ Pro - Automatic Boom Height, Roll, & Variable Geometry Control System



TG558611—UN—24FEB23

Sprayer Main Page with John Deere TerrainCommand™ Pro



WZ290102663—UN—24JUL18

John Deere TerrainCommand™ Pro Sensor - Folded Position

A—Sensor
B—Sensor - Hydraulic Positioning and Folding (Triple Folding Boom)
C—Spray Boom Control Status (Green is Automatic, Red is Manual, & Yellow is Headland Mode)
D—Boom Pendulum - Unlocked
E—John Deere TerrainCommand ™ Pro Softkey - Automatic or Manual
F—Spray Boom Height in cm. Shows whether John Deere TerrainCommand™ Pro is in Automatic or Manual Mode

John Deere TerrainCommand™ Pro is a system which controls the height, variable geometry, and roll of the boom to the ground or crop. One or two sensors (A) are placed on each boom and one close to the center frame (left or right inner boom as desired). Place the center frame sensor on the side that has the most even crop or the least tram lines. The sensors measure the height of the boom spray nozzles above the target (Crop, Ground, or a Hybrid). When the slope of the field changes, the boom control system corrects the boom roll, variable geometry, and boom height when in Automatic Mode.

Select the nozzle for the spray application in **Job Settings**, set the spray height in the **Target Height [cm]** field in the **Job 2** tab. The spray height is used by the control system when the **Automatic Mode** is selected with softkey (E). On the **Sprayer - Main** page the actual boom height above the target can be monitored (F) as

John Deere TerrainCommand is a trademark of Deere & Company

well as the operation mode (Automatic or Manual). The **Spray Boom Control Status** icons (C) indicate when the section is in Automatic Mode (Green) or in Manual Mode (Red). The icons turn yellow when the boom control has **BoomCtrl HMS** enabled on the headland turn. The total system uses either three or five sensors. The left and right **Spray Boom Control Status** icons work with either one or two sensors.

A five sensor system automatically reverts to a three sensor when working with a reduced boom working width. The system detects the reduced boom by timing the unfolding of the outer booms.

TG558610—UN—24FEB23

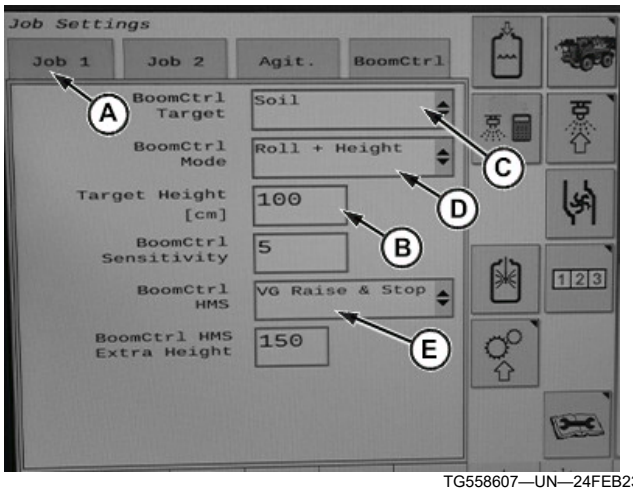
G—Boom Raise/Lower
H—Left Boom Variable Geometry Raise and Lower
I—Right Boom Variable Geometry Raise and Lower
J—AutoTrac™ Resume Button
K—John Deere TerrainCommand™ Pro Resume Switch—If Equipped
L—Boom Roll Switch

*NOTE: The Multi-Function Control boom switches can change the **Spray Boom Control Status** (C).*

*When the **Left or Right Variable Geometry** (H) & (I) switch is operated, the Automatic Mode of the operated segment is now turned off. The segment status changes to red showing that it is now in Manual Mode. The rest of the system stays in Automatic Mode (F). Two short presses of the same switch for DOWN engages the operated segment again into Automatic Mode (green).The function is enabled on the screen for John Deere TerrainCommand™ Pro application. The Automatic Mode is automatically engaged again when changing to Headland or when leaving Headland Mode.*

*When the **Boom Raise/Lower** (G) or the **Boom Roll** switch (J) is operated, the Automatic Mode goes to Manual Mode (all red). Manual Mode is also shown in the selectable field for Spray Boom Height (F). Push softkey (E) on the display returns boom control to Automatic Mode.*

Boom Working Mode and Headland Management System



TG558607—UN—24FEB23

Job Settings 1

A—Job 1 Tab
B—Boom Height [cm]
C—Boom Control Target
D—Boom Control Mode
E—Boom Control Headland Management System

Target Height: field (B) sets the nozzle working height above the target (Crop, Ground, or Hybrid) when John Deere TerrainCommand™ Pro is in Automatic Mode.

BoomCtrl Target: (C) select the type of target for the work required, Crop, Ground, or Hybrid.

NOTE: Hybrid mode is the most widely used of all the modes.

BoomCtrl Target Modes	
Crop	Used mainly for dense crop. The crop level is the target for the boom height, roll and VG.
Ground	Ideal for pre-emerging spraying applications (bare soil). The ground level is the target for the boom height, roll and VG.
	Post-emerge spraying with small plants. The ground level is the target for the boom height, roll and VG.
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 will track the ground and determine a continuous “virtual” crop as an operator would expect in these crop conditions.

BoomCtrl Mode: (D) The drop-down menu gives access to two different settings how the **John Deere TerrainCommand™ Pro** controls and adjusts the spray boom.

- **ROLL**: In this mode, the boom roll and variable geometry (VG) is controlled and adjusted.

*NOTE: **For the ROLL Mode the following are recommendations for use:***

- ROLL is used for example when spraying in tall crops and the crop between the tram line tracks is lower than the rest of the field. Selecting ROLL prevents the center frame lowering and the boom wings raising resulting in a V-shape of the boom
- Spraying tall, upright crops without complete soil coverage (for example rapeseed in flower)
- Spraying plants with large variation of crop density
- Spraying potato plants at early growth stage before the crop is closed. Use BoomCtrl Target - Hybrid Mode with BoomCtrl Mode - Roll and Height as an alternative

- **ROLL + HEIGHT**: In this mode, the boom roll, variable geometry (VG), center frame height are controlled and adjusted.

NOTE: ROLL + HEIGHT is typical used for field work with John Deere TerrainCommand™ Pro

*NOTE: **For the ROLL + HEIGHT Mode the following are recommendations for use:***

- Pre-emerge spraying applications (bare soil)
- Post-emerge spraying with small plants
- Post-emerge spraying of mature plants with a fully closed crop

BoomCtrl HMS: (E) Has five different headland management settings in a drop-down menu. When the master valve is closed at the headland, John Deere TerrainCommand™ Pro switches to one of the following selected modes:

- **Off**: The automatic boom roll, variable geometry, center frame height control are functional at the headland provided John Deere TerrainCommand™ Pro is in Automatic Mode. The boom does not raise the extra height at the headland.
- **Raise & Stop**: The boom is raised to a higher position at the headland when the master valve is switched Off. The boom roll and variable geometry control is switched Off.
- **Raise & Control**: The boom is raised at the headland when the master valve is switched Off. The boom roll and variable geometry remains active. Once the boom has raised to the **BoomCtrl HMS Extra Height** the center frame height control is switched Off. Roll and variable geometry remain active. When the master valve is switched On again after the headland turn, **John Deere TerrainCommand™ Pro** becomes active again and adjusts the boom height to the spray height.
- **VG Raise & Stop**: The boom variable geometry is raised to the **BoomCtrl HMS Extra Height** at the headland when the master valve is switched Off. The center frame height control is switched Off at the spray height and the variable geometry control is switched Off once target height has been achieved.

*NOTE: To operate the machine select **VG Raise & Stop** option.*

- **VG Raise & Control**: The boom variable geometry is raised to the **BoomCtrl HMS Extra Height** at the headland when the master valve is switched Off. The center frame height control is switched Off at the spray height and the variable geometry control remains active.

*NOTE: If the value in **BoomCtrl Settings** for **BoomCtrl HMS Extra Height** is set to **0**, the boom does not raise at the headland.*

With John Deere TerrainCommand™ Pro active, and when the boom is adjusted manually via the Multi-Function Control (MFC) switches, the system changes to Manual Mode.

*NOTE: The Multi-Function Control boom switches can change the **Spray Boom Control Status**.*

*When the **Left or Right Variable Geometry** switch is operated, the Automatic Mode of the operated segment is now turned off. The segment status changes to red showing that it is now in Manual Mode. The rest of the system stays in Automatic Mode. Two short presses of the same switch for DOWN engages the operated segment again into Automatic Mode (green).The function is enabled on the screen for John Deere TerrainCommand™ Pro application. The Automatic Mode is automatically engaged again when changing to Headland or when leaving Headland Mode.*

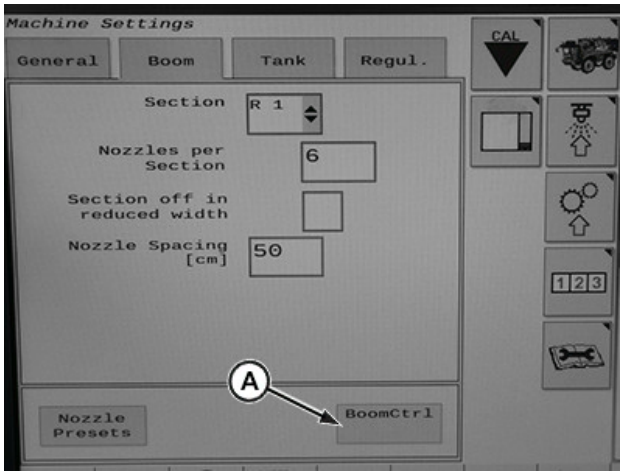
*When the **Boom Raise/Lower** or the **Boom Roll** switch is operated, the Automatic Mode goes to Manual Mode (all red). Manual Mode is also shown in the selectable field for Spray Boom Height. Press softkey (E) on the display returns boom control to Automatic Mode.*

When the master valve is opened after the headland turn, **John Deere TerrainCommand™ Pro** adjusts the boom to the correct attitude for the terrain at the set target height.

BoomCtrl Settings is found in **Machine Settings** in the lower right corner of the **Boom** Tab. Press **BoomCtrl** button and the settings screen appears. Select **Actual Height** to accept the current height as new target height or select **Default Height** (which is set in **Job Settings**) to return to the previous spray height. Changes made in split screen mode are not accepted by the system.

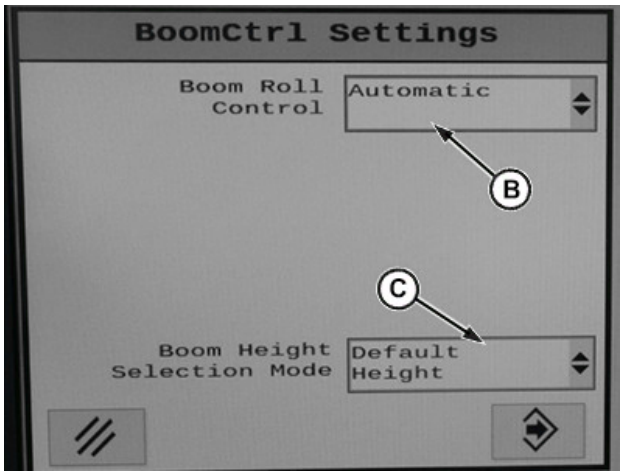
John Deere TerrainCommand is a trademark of Deere & Company

BoomCtrl Settings



TG558608—UN—24FEB23

Machine Settings - Boom Control Settings



TG558609—UN—24FEB23

Boom Control Settings

A—Boom Control Settings Button
B—Boom Roll Control
C—Boom Height Selection Mode

To access **BoomCtrl Settings** screen, select the **BoomCtrl** button (A) on **Boom** tab in **Machine Settings**. Select **Actual Height** to accept the current height as new target height or select **Default Height** (which is set in **Job Settings**) to return to the previous spray height. Changes made in split screen mode are not accepted by the system.

Refer to the supplied vendor manual for the **John Deere TerrainCommand™ Pro** option for further information.

byhneba,1678699797609-19-13MAR23

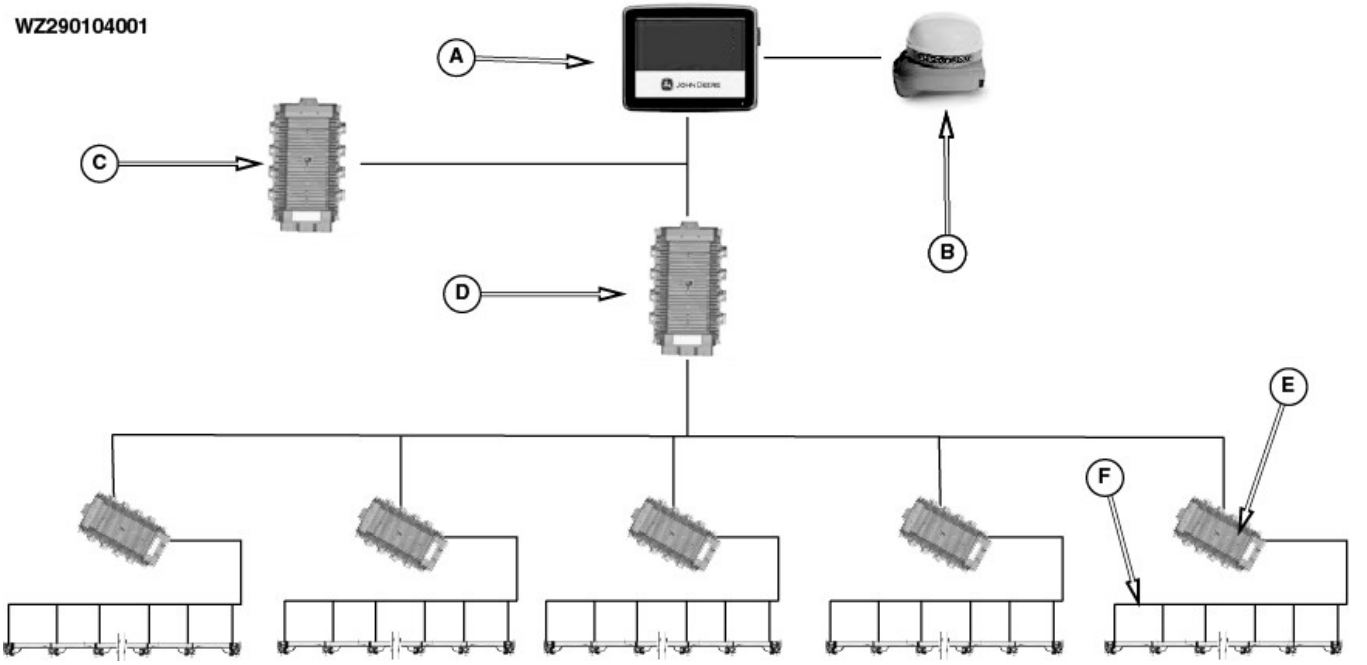
Individual Nozzle Control (INC)

Individual Nozzle Control Overview

The individual nozzle control (INC) 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.

Prescription or map-based applications are also possible using active nozzle settings. If manual section control is used, virtual sections are turned ON or OFF, minimizing the amount of overlap.



WZ290104002—UN—25AUG20

A—Gen4 Display
B—StarFire™ GPS receiver
C—Spray Rate Control Unit (SPC)
D—Master Nozzle Control Unit (MNC)
E—Nozzle Command Control Unit (NCC)
F—Individual Nozzle Bodies

NOTE: The group of nozzles connected to an NCC does not represent a virtual section. Boom virtual sections are created using the software.

KWPZAG2,00009F0-19-13JAN22

Preconditions for INC:

- Starfire™ GPS receiver (A) for active nozzle switching
- Pressure recirculation system (PRS)
- Section control
- ISOBUS

The Starfire™ GPS receiver (B), Gen4 display (A), spray rate controller (SPC) (C), and master nozzle control unit (MNC) (D) are connected to the machine ISOBUS. The nozzle command control (NCC) (E) is connected to the MNC with a separate ISOBUS. The number of used NCC and individual nozzles depends on the boom configuration. The individual nozzle bodies (F) are connected to the NCC with electrical wires. Maximum of seven individual nozzle bodies can be connected to one NCC.

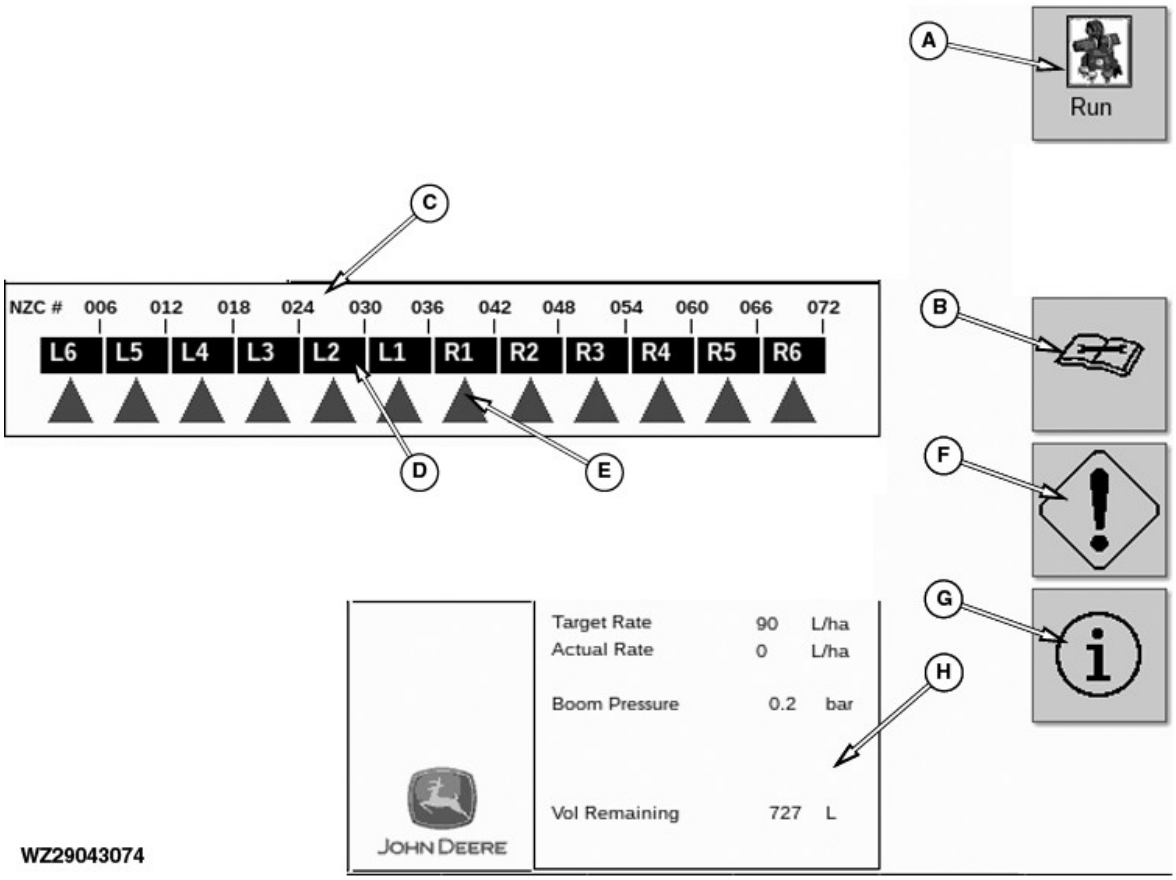
Use with Aftermarket Equipment

IMPORTANT: Machine strainer sizes must not be modified when the nozzle command control INC is installed on the machine. Pressure strainers installed on the machine must have mesh size of at least 80 or higher to reduce spray tip and solenoid plugging.

KWPZAG2,00009F1-19-27AUG21

StarFire is a trademark of Deere & Company

Individual Nozzle Control Run Page



WZ290403074—UN—26AUG20

A—Run Softkey
B—Diagnostic Softkey
C—Nozzle Count
D—Virtual Section
E—Blue Cone
F—Fault Summary Softkey
G—System Information Softkey
H—Solution System Information

The **Individual Nozzle Control (INC)**: Run page displays information about the individual nozzle control. Solution system information is also displayed for operator's reference.

Run Softkey (A)—Select to access run page.

Diagnostic Softkey (B)—Select to access diagnostic pages.

Nozzle Count (C)—Displays the number of nozzles on the right-hand side of the section. Nozzles are numbered left to right across the booms. The number of nozzles depends on the boom configuration.

Virtual Section (D)—Displays the status of virtual spray section.

- Red block with black text—Virtual section manually disabled; displayed on sprayer run page only.
- Black block with white text—Virtual section enabled; blue cone (E) displayed below the section indicates that at least one nozzle.
- White block with back text—Virtual section disabled.
- Gray block with black text—Virtual section disabled with boom section indexing (IBS).

Nozzles are active when spraying until the last nozzle of that section is closed, then the blue cone is taken away.

NOTE: Spray sections are customized to the operator's preference.

It is not possible to turn off individual nozzles manually.

Fault Summary Softkey (F)—Select to view system faults that have occurred.

System Information Softkey (G)—Select to view system hardware and software information.

Solution System Information (H)—Displays the readings from the solution system.

KWPZAG2,00009F2-19-13JAN22

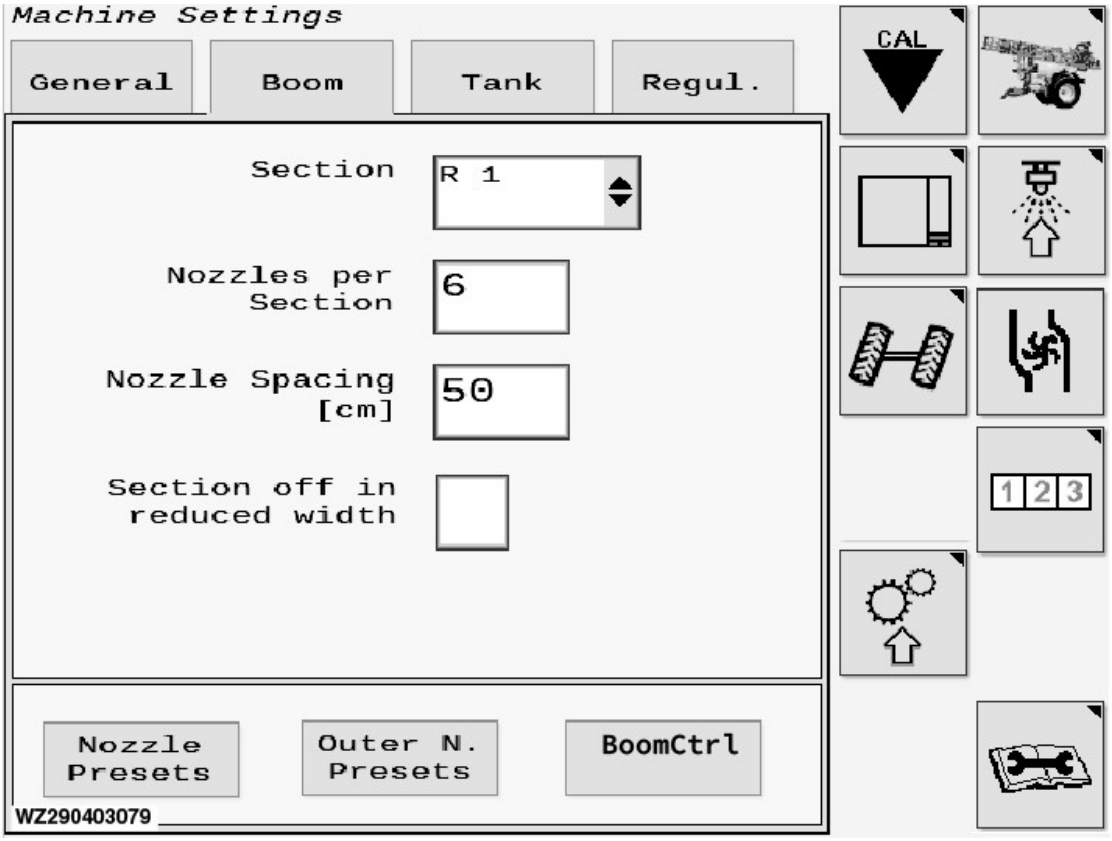
Spray Section Setup

IMPORTANT: Sections cannot be set up for band spraying.

Do NOT turn nozzle bodies to an OFF position to obtain wider nozzle spacing (if individual nozzle control is equipped).

The nozzle command control does not apply an accurate rate when nozzles have been turned off manually.

Spray sections can be customized to include various numbers of nozzles. Sections can contain only one or several nozzles. All machines can be set up with 12 sections regardless of section width or factory configuration. Set up the number of sections and nozzles per section for optimal performance.



WZ290403079—UN—28AUG20

Section: Select to access drop-down menu for various boom sections (e.g. L1-L2-L3-L4-R4-R3-R2-R1-C for booms with 9 sections), highlight and press your selection.

NOTE: All sections must be programmed.

Nozzles per Section: Select to enter the number of nozzles per section.

NOTE: It must be repeated.

Nozzle Spacing: Select to enter the distance between the nozzles.

NOTE: Default spacing for INC nozzles is 50 cm.

IMPORTANT: The total number of nozzles in all sections must equal to the total installed number of INC nozzles.

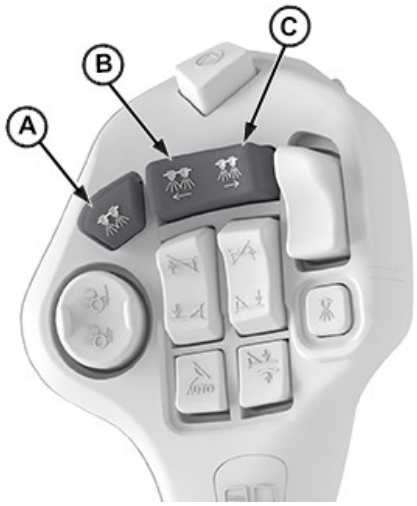
Section off in reduced width : If checked, the section is always enabled. If unchecked, the section is disabled when working with reduced width.

KWPZAG2,00009F3-19-27AUG21

Operate Indexed Boom Sections (IBS)

This machine is equipped with indexed boom section (IBS) switching. This gives the operator another way to shut off virtual sections sequence without removing your hand from the multi-function lever. An audible beep sounds when the buttons are pressed. This function is useful when working with point rows and waterways.

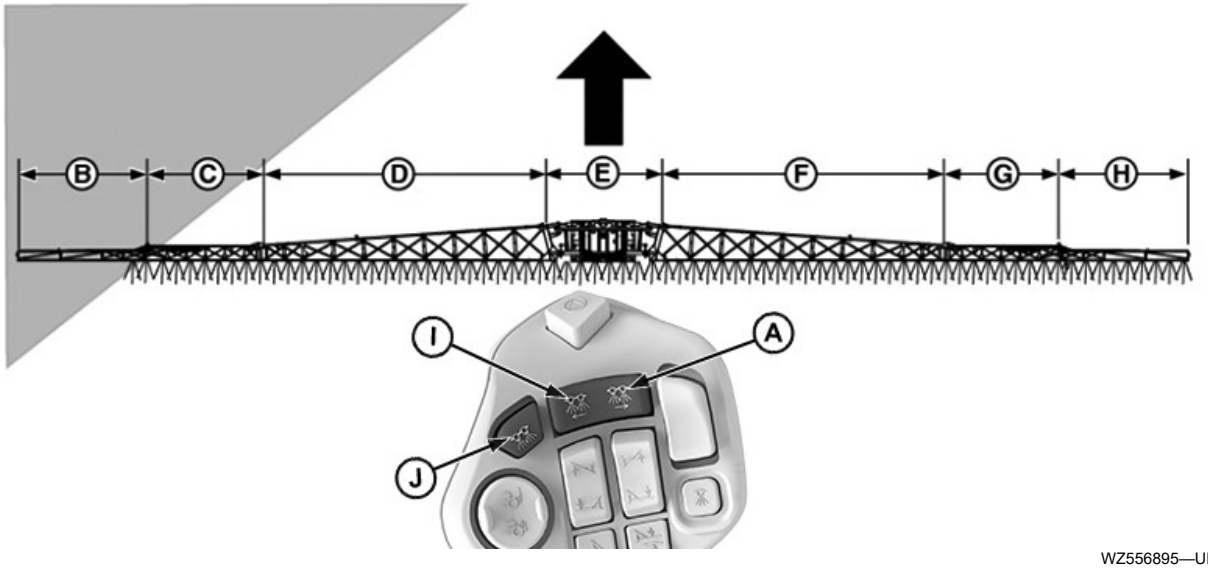
Indexed boom sections (IBS) can be operated using the following three buttons:



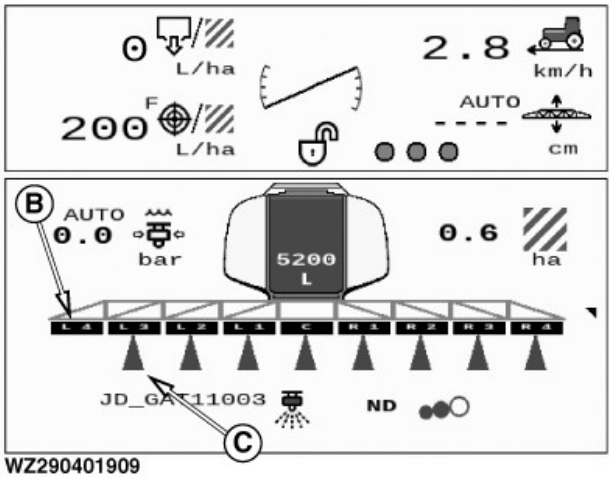
WZ556893—UN—09DEC22

A—IBS Reset Button
B—IBS Left-Hand Button
C—IBS Right-Hand Button

- **IBS reset button (A)**: Use to resume all to enabled sections that have been shut off.
- **IBS left-hand button (B)**: Use to sequentially shut off virtual sections starting at right-hand end of boom moving to left.
- **IBS right-hand button (C)**: Use to sequentially shutoff virtual sections starting at left-hand end of boom and moving to the right.



WZ556895—UN—09DEC22



WZ290401909—UN—16JUN20

A—IBS Right-Hand Button
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—IBS Left-Hand Button
J—IBS All Virtual Sections ON Button

Example: If the operator is coming upon an angled boundary and would like to shutoff virtual sections in sequence from left to right:

1. **IBS right-hand button (A)**: Push and release once to shutoff virtual sections of left-hand boom nozzles (L4 on display) (B).

NOTE: Continue to push and release IBS right-hand button (A) to shutoff remaining virtual sections across the entire boom.

2. **IBS right-hand button (A)**: Push and release again to shutoff virtual sections of left-hand boom nozzles (L3 on display) (C).

NOTE: Turn virtual sections all ON at once using IBS all virtual sections ON button (J).

3. **IBS left-hand button (I)**: Push and release to turn ON virtual sections of left-hand boom nozzles (L3 on display) (C); virtual sections can be shutoff from the right-to-left using the opposite buttons, first the IBS left-hand button (I) to shutoff, and the IBS left-hand button (I) to turn on again.
4. **IBS left-hand button (I)**: Push and release to turn ON virtual sections of left-hand boom nozzles (L4 on display) (B).

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

byhneba,1671455399201-19-19DEC22

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.

NOTE: Operate remote control from behind the boom for best 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

1. **Left-hand section ON button (A)**: Press to turn spray sections ON, progressing in sequence from outermost right-hand section of the boom to the left hand-side.
2. **Right-hand section ON button (B)**: Press to turn spray sections ON, progressing in sequence from outermost left-hand section of the boom to the right hand-side.
3. **Left-Hand Nozzle ON button (C)**: Press to turn on the next available nozzle, progressing in sequence from the right-hand side of the boom to the left-hand side.
4. **Right-Hand Nozzle ON button (D)**: Press to turn on the next available nozzle, progressing in sequence from the left-hand side of the boom to the right-hand side.
5. **Start button (E)**: Press twice to enable. Spray from the entire boom width by holding the start button for 2 seconds.

NOTE: Machine horn honks twice and all nozzle lights flash twice when the system is enabled.

6. **Stop button (F)**: Press once to pause spraying. Hold for two seconds to end nozzle test.

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.

NOTE: Unfolding outer booms is not necessary.

NOTE: If any condition is not met during remote operation, the system is disabled.

Activate a section first, then a single nozzle:

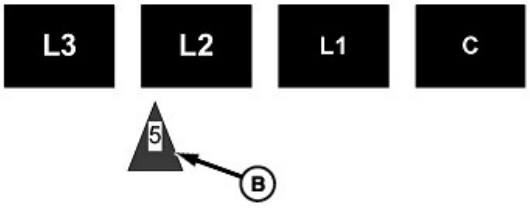
NOTE: Only enabled nozzles are controlled when using the remote control.

All examples start from the left-hand side of the machine. The procedure is similar for starting 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



N125210—UN—07SEP16

A—Left-Hand Section
B—Left-Hand Nozzle

2. Press right-hand section ON button, turning ON the left-hand section (A) on the boom.
3. Press right-hand nozzle ON button, turning ON the left-hand nozzle (B) on the next available section.
4. Press the stop button to pause spraying.

Activate single nozzle and then a section:

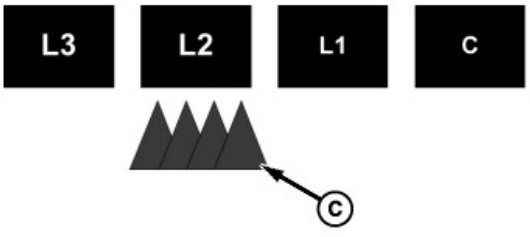
NOTE: Only enabled nozzles are controlled when using the remote control.

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—Nozzle
C—Spray Section

2. Press right-hand nozzle ON button, turning ON the left-hand 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 spray section (C).

5. Press the stop button to pause spraying.

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 1 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 2 seconds, the test with the remote control stops.

KWPZAG2,00009F5-19-27AUG21

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 remote controls is activated and they are allows to control the system. If a different remote is to be used, then the key power must be cycled to OFF and then back to 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 diagnostic address 142.

NOTE: "999999999" is displayed if a serial number has not been entered during the current power cycle.

N130599—UN—22MAY17

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 1.

NOTE: The system allows the operator up to 2 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 status 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 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.

N130599—UN—22MAY17

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 2.

NOTE: The system allows the operator up to 2 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 status 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.

KWPZAG2,00009F6-19-27AUG21

NCC Boom Configuration

Boom 24/12 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

Boom 28/14 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

Boom 27/15 m									
Nozzle	**1 - 3**	**4 - 10**	**11 - 17**	**18 - 24**	**25 - 30**	**31 - 37**	**38 - 44**	**45 - 51**	**52 - 54**
NCC	M505L	M504L	M503L	M502L	M501L	M502R	M503R	M504R	M505R

Boom 30/15 m									
Nozzle	**1 - 6**	**7 - 13**	**14 - 20**	**21 - 27**	**28 - 32**	**33 - 40**	**41- 47**	**48 - 54**	**55 - 60**
NCC	M505L	M504L	M503L	M502L	M501L	M502R	M503R	M504R	M505R

Boom 27/21 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

Boom 30/21 m									
Nozzle	**1 - 6**	**7 - 13**	**14 - 20**	**21 - 28**	**29 - 32**	**33 - 40**	**41- 47**	**48 - 54**	**55 - 60**
NCC	M505L	M504L	M503L	M502L	M501L	M502R	M503R	M504R	M505R

Boom 32/21 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

Boom 36/24 m											
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

Boom 39/27 m												
Nozzle	**1 - 6**	**7 - 12**	**13 - 19**	**20 - 25**	**26 - 32**	**33 - 39**	**40 - 46**	**47 - 53**	**54 - 59**	**60 - 66**	**67 - 72**	**73 - 78**
NCC	M506L	M505L	M504L	M503L	M502L	M501L	M501R	M502R	M503R	M504R	M505R	M506R

Boom 40/27 m												
Nozzle	**1 - 7**	**8 - 13**	**14 - 20**	**21 - 26**	**27 - 33**	**34 - 40**	**41 - 47**	**48 - 54**	**55 - 60**	**61 - 67**	**68 - 74**	**75 - 80**
NCC	M506L	M505L	M504L	M503L	M502L	M501L	M501R	M502R	M503R	M504R	M505R	M506R

KWPZAG2,00009F7-19-27AUG21

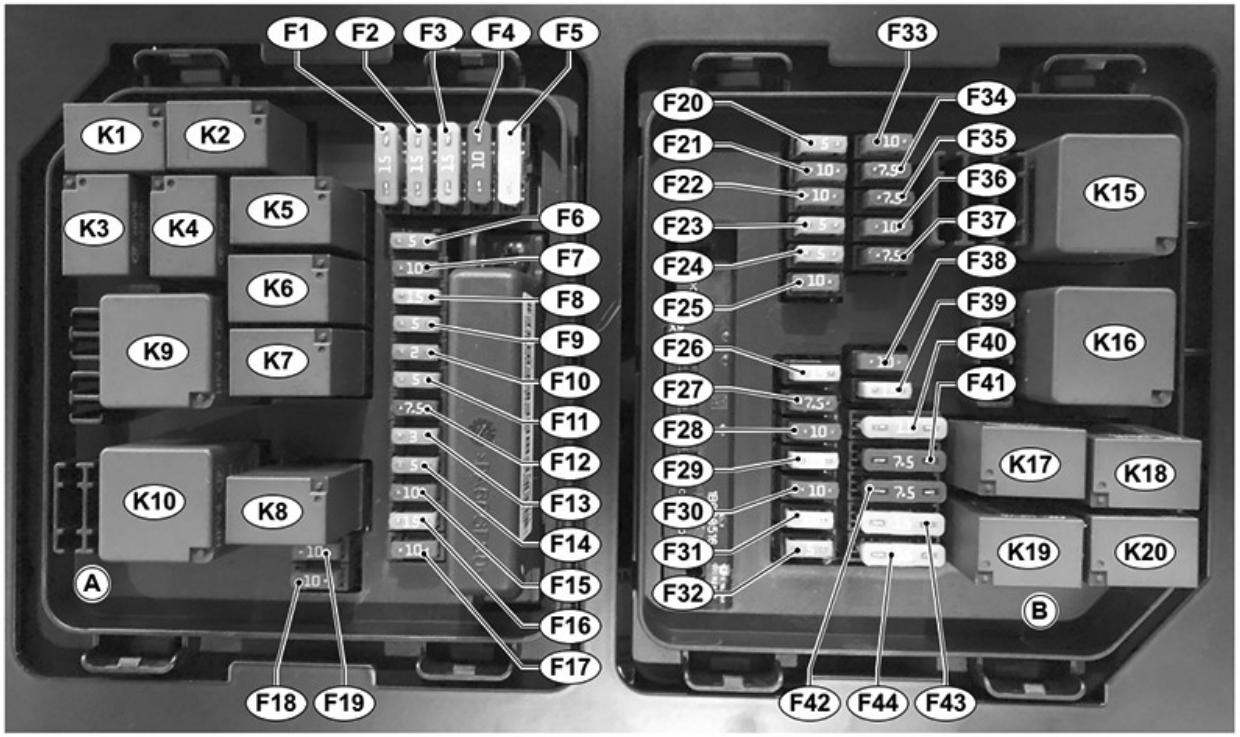
Replace Fuses and Relays

APY65221—UN—20JUL21

A—QPL-S Fuse Box (inside the cab)
B—QPL-M Fuse Box (inside the cab)
C—JD 1 Cab Fuse Box (inside the cab)
D—JD 2 Cab Fuse Box (inside the cab)
E—JD Engine Fuse Box (behind the cab)

APY65222—UN—20JUL21

QPL-S and QPL-M Fuse Box



APY65223—UN—20JUL21

A—QPL-S Fuse Box **B—QPL-N Fuse Box**

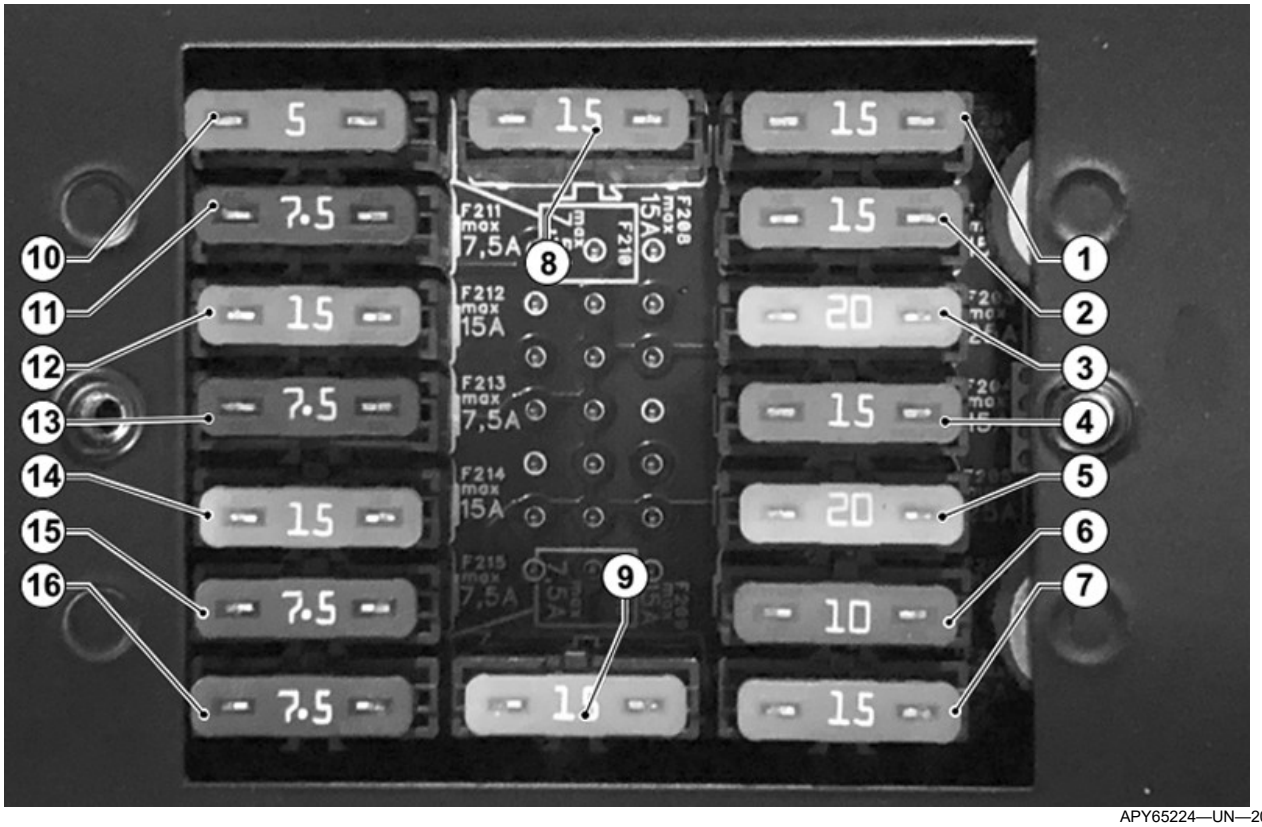
QPL-S Fuse Layout		
Fuse	**Rating**	**Function**
F1	15 A	Boom Working Lights
F2	15 A	Internal Driving Lights
F3	15 A	+30 Connector Opt X140
F4	10 A	Road Light (left/right)
F5	20 A	Fan AC CAT IV
F6	5 A	Not Used
F7	10 A	Working Lights (cab)
F8	15 A	+30 Diagnostics
F9	5 A	Not Used
F10	2 A	Not Used
F11	5 A	Differential/Door Sensor
F12	7.5 A	+15 Diagnostics
F13	3 A	Position Lights Front Right and Left Rear
F14	5 A	Position Lights Front Left and Rear Right
F15	10 A	Air Conditioning
F16	15 A	Front Wipers
F17	10 A	Right Rear View Mirror
F18	10 A	Position Lights
F19	10 A	Left Rear View Mirror

QPL-S Relay Layout	
Relay	**Function**
K1	Road Light Right/Left
K2	Internal Driving Light
K3	Working Lights (engine)
K4	Position Lights
K5	Working Lights (boom)
K6	Working Lights (cab)
K7	Indicator Light Left
K8	Indicator Light Right
K9	Front Wiper
K10	Parking Brake

QPL-M Fuse Layout		
Fuse	**Rating**	**Function**
F20	5 A	Not Used
F21	10 A	Emergency Button
F22	10 A	+15 VE
F23	5 A	+15 Switch Key
F24	5 A	+15 VE Poclain
F25	10 A	Not Used
F26	15 A	+15 Connector Opt X141
F27	7.5 A	+15 4 Warning Light
F28	10 A	+15 ECU Danfoss (S-2C)
F29	15 A	+15 Connector Opt X140
F30	10 A	Working Lights (engine)
F31	15 A	Lateral Lights
F32	5 A	Operator Seat Sensor ATI
F33	10 A	+15 Connector Opt X279
F34	7.5 A	Agitation and Recirculation
F35	7.5 A	+30 TERA and Intouch
F36	10 A	+30 Display Control Altek Valve
F37	7.5 A	Braking Lights
F38	10 A	Not Used
F39	15 A	Beacon Lights
F40	15 A	External Driving Lights
F41	7.5 A	+30 Warning Lights
F42	7.5 A	Beeping Sound Reverse Way
F43	15 A	Working Lights (cab)
F44	15 A	+30 Connector Opt X141

QPL-M Relay Layout	
Relay	**Function**
K15	Air Conditioning Compressor
K16	Fan Filter CAT IV System
K17	Starting Signal
K18	External Beam Lights
K19	Cab Working Lights
K20	Reverse Gear Beeping Sound/Lights

Cab JD 1 Fuse Box

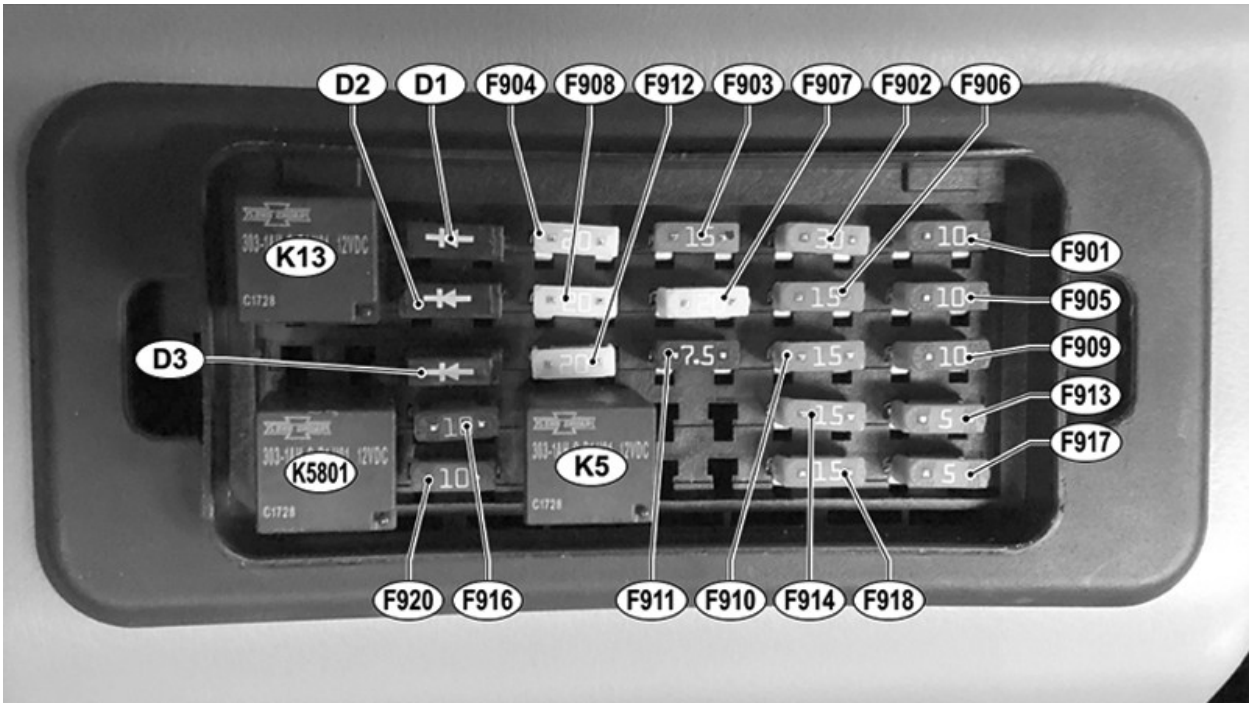


APY65224—UN—20JUL21

JD 1 Cab Fuse Layout		
Fuse	**Rating**	**Function**
F1	15 A	+15 Poclain
F2	15 A	+15 Poclain D3
F3	20 A	+15 Poclain D2
F4	15 A	Not Used
F5	20 A	+15 Poclain D1
F6	10 A	ISOBus System Functions (Joystick, AutoTrac™, Mspray, Norac)
F7	15 A	+15 Optional kV
F8	15 A	S-2C Steering System – MIDAC Power
F9	15 A	Not Used
F10	5 A	Chassis Power
F11	7.5 A	S-2C Steering System Electronic
F12	15 A	+15 S-2C Steering System CLS Controller
F13	7.5 A	Not Used
F14	15 A	Not Used
F15	7.5 A	CommandARM™ Functions
F16	7.5 A	Not Used

AutoTrac is a trademark of Deere & Company
CommandARM is a trademark of Deere & Company

Cab JD 2 Fuse Box



APY65225—UN—20JUL21

Cab JD 2 Fuse Layout		
Fuse	**Rating**	**Function**
F901	10A	GreenStar™ Power
F902	30 A	Front Beacon Power
F903	15 A	Dome Light
F904	20 A	Not Used
F905	10 A	Primary Display Unit (A88)
F906	15 A	Not Used
F907	20 A	Seat Power 1
F908	20 A	Not Used
F909	10 A	Not Used
F910	15 A	Steering Column Module Power
F911	7.5 A	Not Used
F912	20 A	Accessory Power
F913	5 A	Wake-up Power
F914	15 A	Front Wiper Power
F916	10 A	Refrigerator Power
F917	5 A	Not Used
F918	15 A	Not Used
F920	10 A	Not Used

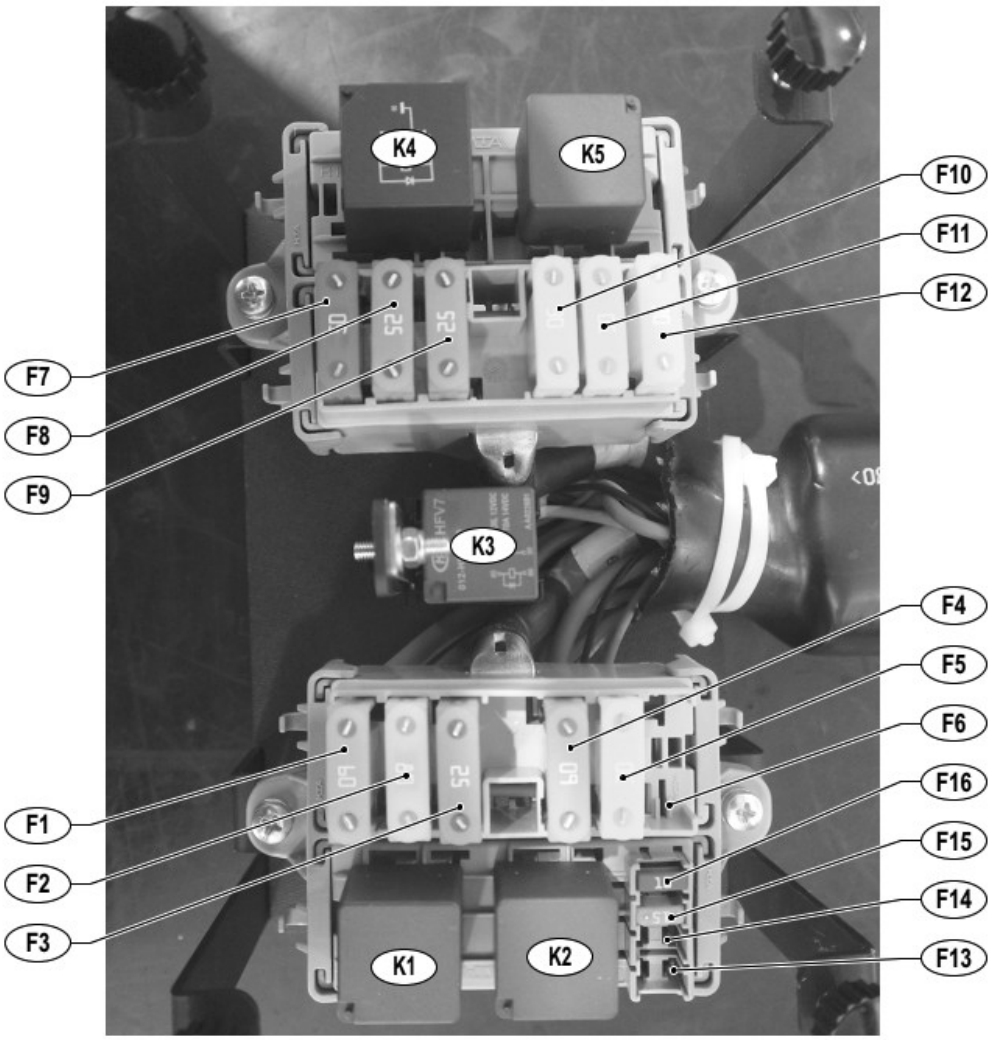
GreenStar is a trademark of Deere & Company

Cab JD 2 Fuse Layout	
Relay	**Function**
D1	Not Used
D2	Not Used
D3	System Wake-up Power Diode
K5	AUX Power Relay
K19	Front Beacon Relay

K5801	Not Used

KWPZAG2,00009E9-19-20MAR23

Engine JD Fuse Box



APY65226—UN—20JUL21

Engine JD - Fuse Layout		
Fuse	**Rating**	**Function**
F1	60 A	+30 General 1
F2	80 A	+30 General 2
F3	25 A	+30 Air Sleeve Boom Compressor
F4	60 A	+30 Starting Relay
F5	30 A	+30 rpm Management
F6	Not Applicable	Not Used
F7	50 A	+30 Cab
F8	25 A	+VP Cab Controller MC2M
F9	25 A	+VP Chassis Controller MC2M
F10	30 A	ECU 3

F11	30 A	ECU 2
F12	30 A	ECU 1
F13	Not Applicable	Not Used

Engine JD - Fuse Layout		
Fuse	**Rating**	**Function**
F14	Not Applicable	Not Used
F15	15 A	Not Used
F16	10 A	+30 Connector Option 279

Engine JD - Relay Layout	
Relay	**Function**
K1	+VP MC2M Cab
K2	+VP MC2M Chassis
K3	rpm Management
K4	Air Sleeve Boom Compressor
K5	+50 Starter Motor

KWPZAG2,00009EA-19-26AUG21

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.

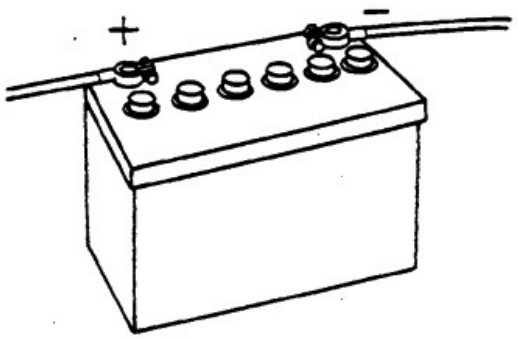
Servicing Batteries

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 contact your nearest John Deere dealer or other qualified dealers.

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
KWPZAG2,00009EC-19-27JAN22

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

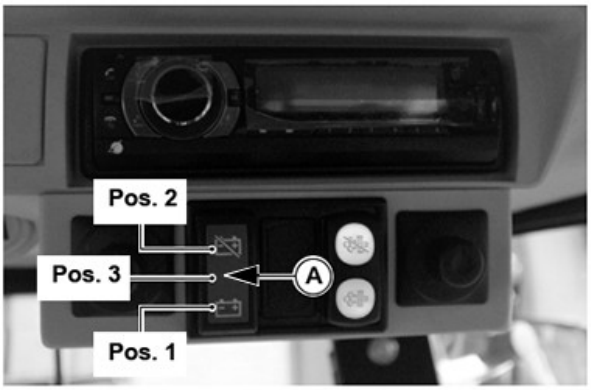
Prevent Battery Damage

- Be sure that alternator connections are correct before cables are connected to battery.
- 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

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.



APY65230—UN—28JUL21

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 position (Pos. 2). After the set 3 minutes have passed, cut-off switch interrupts the supply of current to the electrical system.

KWPZAG2,00009EF-19-26AUG21

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 must 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,FUEL1-19-01NOV22

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

[1] *See DX,ENOIL12,OEM, DX,ENOIL12,T2,STD, or DX,ENOIL12,T2, EXT for more information on Engine Oil and Filter Service Intervals.*

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 B20 (20% BioDiesel). Further increase in lubricity is limited for BioDiesel blends greater than B20.

DX,FUEL5-19-07FEB14

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. Contact your fuel supplier or John Deere dealer for recommendations.

DX,FUEL4-19-13JAN18

Supplemental Diesel Fuel Additives

Diesel fuel can be the source of performance or other 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

Testing Diesel Engine Coolant

Maintaining adequate concentrations of glycol and inhibiting additives in the coolant is critical to protect the engine and cooling system against freezing, corrosion, and cylinder liner erosion and pitting.

Test the coolant solution at intervals of 12 months or less and whenever excessive coolant is lost through leaks or overheating.

Coolant Test Strips

Coolant test strips are available from your John Deere dealer. These test strips provide a simple, effective method to check the freeze point and additive levels of your engine coolant.

When Using John Deere COOL-GARD II

John Deere COOL-GARD II Premix™ , COOL-GARD II PG Premix and COOL-GARD II Concentrate are maintenance free coolants for up to six years or 6000 hours of operation, provided that the cooling system is topped off using only John Deere COOL-GARD II Premix or COOL-GARD II PG premix. Test the coolant condition annually with coolant test strips designed for use with John Deere COOL-GARD II coolants. If the test strip chart indicates that additive is required, add John Deere COOL-GARD II Coolant Extender as directed.

Add only the recommended concentration of John Deere COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

When Using Nitrite-Containing Coolants

Compare the test strip results to the supplemental coolant additive (SCA) chart to determine the amount of inhibiting additives in your coolant and whether more John Deere Liquid Coolant Conditioner should be added.

Add only the recommended concentration of John Deere Liquid Coolant Conditioner. DO NOT add more than the recommended amount.

Coolant Analysis

For a more thorough evaluation of your coolant, perform

COOL-GARD is a trademark of Deere & Company

a coolant analysis. The coolant analysis can provide critical data such as freezing point, antifreeze level, pH, alkalinity, nitrite content (cavitation control additive), molybdate content (rust inhibitor additive), silicate content, corrosion metals, and visual assessment.

Contact your John Deere dealer for more information on coolant analysis.

DX,COOL9-19-11APR11

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 gas-oil, 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 B20 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 B20.

Biodiesel concentrations above B20 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 equivalent, which contain detergent and dispersant additives, are required when using biodiesel blends from B10 to B20, and are recommended when using lower biodiesel blends.

John Deere Engines Without Exhaust Filter

Biodiesel blends up to B20 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 B20.

These John Deere engines can operate on biodiesel blends above B20 (up to 100% biodiesel). Operate at levels above B20 ONLY if the biodiesel is permitted by law and meets the EN 14214 specification (primarily available in Europe). Engines operating on biodiesel blends above B20 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 equivalent, 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 must 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 B20 must be used within 90 days of the date of biodiesel manufacture. Biodiesel blends above B20 must be used within 45 days from the date of biodiesel manufacture.

When using biodiesel blends up to B20, the following must 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 must also be considered if using biodiesel blends above B20:

- 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 B20 contain more ash, using blends above B20 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,FUEL7-19-13JAN18

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 for more information on diesel fuel analysis.

DX,FUEL6-19-13JAN18

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 dealer 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.

Ether

An ether port on the intake is available to aid cold weather starting.

CAUTION: Ether is highly flammable. Do not use ether when starting an engine equipped with glow plugs or an air intake heater.

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 must be completely open by the time the intake manifold air temperature reaches the maximum allowable temperature out of the charge air cooler.

For more information, see your John Deere dealer.

DX,FUEL10-19-13JAN18

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

COOL-GARD is a trademark of Deere & Company

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

John Deere COOL-GARD™ II Coolant Extender

Some coolant additives gradually deplete during engine operation. For COOL-GARD™ II pre-mix and COOL-GARD II Concentrate, replenish coolant additives between drain intervals by adding COOL-GARD II Coolant Extender.

COOL-GARD II Coolant Extender should not be added unless indicated by COOL-GARD II Test Strips. These test strips provide a simple, effective method to check the freeze point, additive levels, and pH of your engine coolant.

Test the coolant solution at intervals of 12 months and whenever excessive coolant is lost through leaks or overheating.

IMPORTANT: Do not use COOL-GARD II Test Strips with COOL-GARD II PG.

COOL-GARD II Coolant Extender is a chemically matched additive system for use with all COOL-GARD II coolants. COOL-GARD II Coolant Extender is not intended for use with nitrite-containing coolants.

COOL-GARD is a trademark of Deere & Company

[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.

IMPORTANT: Do not add a supplemental coolant additive when the cooling system is drained and refilled with any of the following:

- **John Deere COOL-GARD II**
- **John Deere COOL-GARD II PG**

The use of non-recommended supplemental coolant additives can result in additive drop-out, gelation of the coolant, or corrosion of cooling system components.

Add the recommended concentration of COOL-GARD II Coolant Extender. DO NOT add more than the recommended amount.

DX,COOL16-19-15MAY13

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

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 I 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.

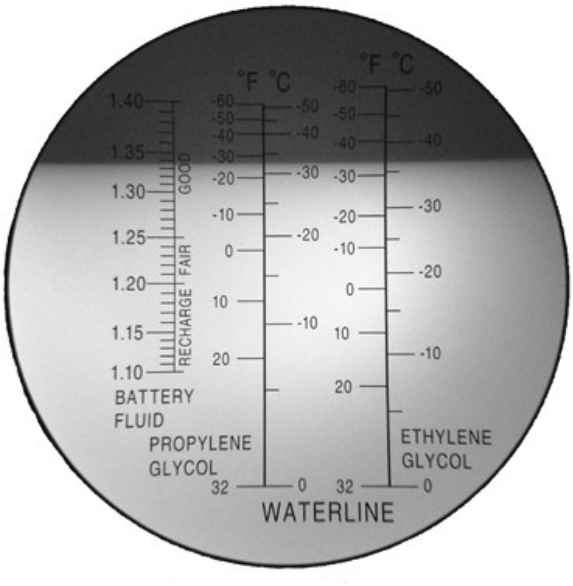
Freeze Protection

The relative concentrations of glycol and water in the engine coolant determine its freeze protection limit.

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



TS1733—UN—04SEP13

Image with a Drop of 50/50 Coolant Placed on the Refractometer Window

Testing Coolant Freeze Point

TS1732—UN—04SEP13

SERVICEGARD™ Part Number 75240

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.

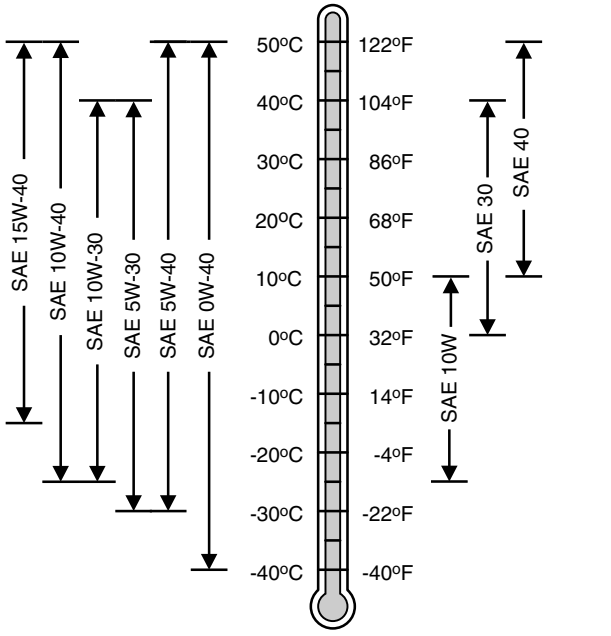
To use this tool:

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

SERVICEGARD is a trademark of Deere & Company

Diesel Engine Oil — Tier 2 and Stage II



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 oil is preferred.

John Deere Plus-50™ is also recommended.

John Deere Torq-Gard™ is also allowed.

Other oils may be used if they meet one or more of the following standards:

- API Service Category CK-4
- API Service Category CJ-4
- API Service Category CI-4 PLUS
- API Service Category CI-4
- API Service Category CH-4
- ACEA Oil Sequence E9
- ACEA Oil Sequence E7
- ACEA Oil Sequence E6
- ACEA Oil Sequence E5
- ACEA Oil Sequence E4

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.

DO NOT use diesel fuel with sulfur content greater than 10 000 mg/kg (10 000 ppm).

DX,ENOIL7-19-23APR19

Engine Oil and Filter Service Intervals — Tier 2 and Stage II Engines

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.

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.

- 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
- BEFORE using diesel fuel with sulfur content greater than 5000 mg/kg (5000 ppm), contact your John Deere dealer or qualified service provider

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 intervals**
- **Use only approved oil types**

Approved Oil Types:

- “Plus-50 Oils” include John Deere Plus-50™ II and John Deere Plus-50™
- “Other Oils” include John Deere Torq-Gard™, API CK-4, API CJ-4, API CI-4 PLUS, API CI-4, API CH-4, ACEA E9, ACEA E7, ACEA E6, ACEA E5, and ACEA E4

Engine Oil and Filter Service Intervals	
Fuel Sulfur	Less than 2000 mg/kg (2000 ppm)
Plus-50 Oils	375 hours
Other Oils	250 hours
Fuel Sulfur	2000—5000 mg/kg (2000—5000 ppm)

Plus-50 is a trademark of Deere & Company
Torq-Gard is a trademark of Deere & Company

Engine Oil and Filter Service Intervals	
Plus-50 Oils	275 hours
Other Oils	150 hours
Fuel Sulfur	5000—10 000 mg/kg (5000—10 000 ppm)
Plus-50 Oils	187 hours (See John Deere dealer)
Other Oils	125 hours (See John Deere dealer)
Oil analysis may extend the service interval of “Other Oils”, to a maximum not to exceed the interval for Plus-50 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 oils is reached.	

DX,ENOIL12,T2,STD-19-13JAN18

Diesel Engine Break-In Oil — Non-Emissions Certified and Certified Tier 1, Tier 2, Tier 3, Stage I, Stage II, and Stage III

New engines are filled at the factory with either John Deere Break-In™ or John Deere Break-In Plus™ Engine Oil. During the break-in period, add John Deere Break-In™ or Break-In Plus™ Engine Oil, respectively, 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.

If John Deere Break-In™ Engine Oil is used during the initial operation of a new or rebuilt engine, change the oil and filter at a maximum of 100 hours.

If John Deere Break-In Plus™ Engine Oil is used, change the oil and filter at a minimum of 100 hours and a maximum equal to the interval specified for John Deere Plus-50™ II or Plus-50™ oil.

After engine overhaul, fill the engine with either John Deere Break-In™ or Break-In Plus™ Engine Oil.

If John Deere Break-In™ or Break-In Plus™ Engine Oil is not available, use an SAE 10W-30 viscosity grade diesel engine oil meeting one of the following and change the oil and filter at a maximum of 100 hours of operation:

- API Service Classification CE
- API Service Classification CD
- API Service Classification CC
- ACEA Oil Sequence E2
- ACEA Oil Sequence E1

IMPORTANT: Do not use Plus-50™ II, Plus-50™, or engine oils meeting any of the following for the initial break-in of a new or rebuilt engine:

API CK-4	**ACEA E9**
API CJ-4	**ACEA E7**
API CI-4 PLUS	**ACEA E6**
API CI-4	**ACEA E5**
API CH-4	**ACEA E4**
API CG-4	**ACEA E3**
API CF-4	
API CF-2	
API CF	

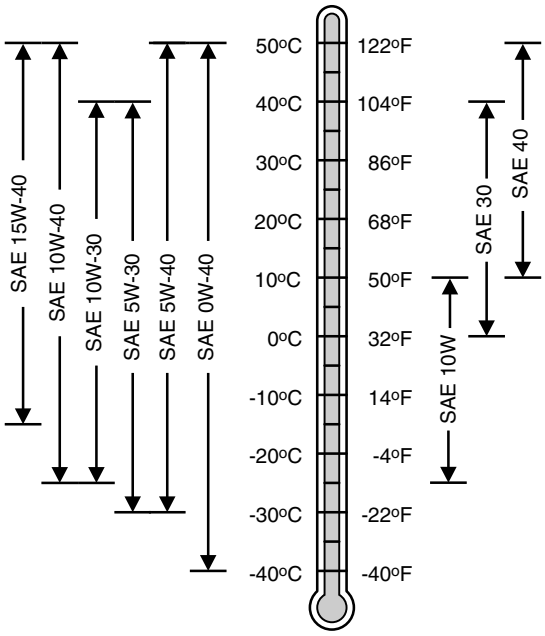
These oils do not allow the engine to break in properly.

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, John Deere Plus-50™, or other diesel engine oil as recommended in this manual.

DX,ENOIL4-19-02NOV16

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.

Break-In is a trademark of Deere & Company.
Break-In Plus is a trademark of Deere & Company
Plus-50 is a trademark of Deere & Company.

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

Engine Oil and Filter Service Intervals — Interim Tier 4, Final Tier 4, Stage IIIB, Stage IV, and Stage V Engines

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:

- *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*

Engine Oil and Filter Service Intervals	
John Deere Plus-50™ II	500 hours
Other Oils	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.	

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 intervals.**
- **Use only approved oil types.**

DX,ENOIL15,IT4,120toMAX-19-13JAN18

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

Plus-50 is a trademark of Deere & Company

Break-In Plus is a trademark of Deere & Company

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

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.

Plus-50 is a trademark of Deere & Company.

AdBlue is a trademark of VDA, the German Association of the Automotive Industry.

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 must 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).

It is recommended to purchase DEF in quantities that will be consumed within 12 months.

DX,DEF,STORE-19-15JUL20

Refilling Diesel Exhaust Fluid (DEF) Tank

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 immediately to determine how to clean and purge 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, contact your John Deere dealer immediately to determine how to clean and purge the system.

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 must 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.

KWPZAG2,0000873-19-16AUG21

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 must 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 approved tools are available through your John Deere dealer:

- 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-19-13JUN13

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

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.

The following grease is preferred:

- Multi-Purpose Lithium Grease

KWPZAG2,00006E1-19-29AUG21

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

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

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

Mixing of Lubricants

In general, avoid mixing different brands or types of oil. Oil manufacturers blend additives in their oils to meet certain specifications and performance requirements.

Mixing different oils can interfere with the proper functioning of these additives and degrade lubricant performance.

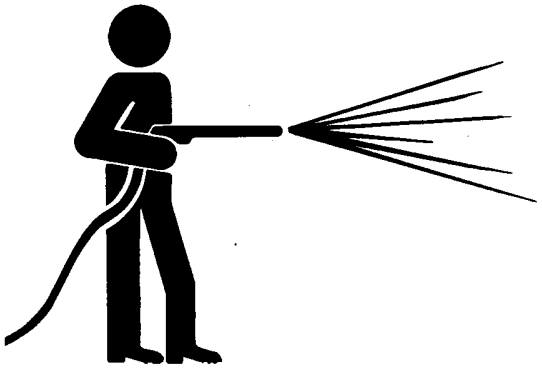
Consult your John Deere dealer to obtain specific information and recommendations.

DX,LUBMIX-19-18MAR96

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
KWPZAG2,0000A07-19-27AUG21

Lubrication and Periodic Service

CAUTION: Do NOT lubricate or adjust the tractor while the engine is running unless recommended to do so.

IMPORTANT: After servicing, cleaning or repairing the tractor, 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.

KWPZAG2,0000A08-19-27AUG21

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.

KWPZAG2,0000A09-19-27AUG21

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.

Replacement hoses are available at authorized John Deere dealer.

KWPZAG2,0000A0A-19-27AUG21

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	Check	U	U															

(with an appropriate dynamometric wrench)																		
Tightness of the Nuts and Bolts (in general)	Check	U																
Oil Leaks from the Pipe Fittings	Check	U																
Pressure and Condition of Tires	Check	U	U															
General Condition	Visual check	U	U															
Hydraulic Oil Level	Check		U															
Possible Hydraulic Oil Leaks	Check	U	U															
Engine Air Filter	Clean		U															
Service and Parking Brakes Operation	Check	U	U															
Rotating Parts and Joints	Grease		U															
Air-Conditioner Compressor Belt Tension	Check		U															
Headlights and Flashing Operation	Check		U															
Steering and Hydraulic Services Operation	Check		U															
Instrumentation Operation	Check		U															
Warning Lights and Buzzer Operation	Check		U															
Disc Brake Oil Level [c]	Check				U													
Poly Battery Tightening	Check					U												
Rubbing / Damaging of Flexible Pipes	Check				U													
Heads and Clamping Bolts - Tie Rods Clearance	Check	U								D								
Hydraulic Oil Filter Cartridge on Return	Replace					U				D								
Hydraulic Oil Suction Filter Cartridge	Replace					U				D								
Hydraulic Oil Filter Cartridge on Delivery	Replace					U				D								

[a] *User*
[b] *Dealer*
[c] *(if any)*

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
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								
Fresh Air Cab Filter (Cat IV)	Replace					U				U								
Internal Recirculation Air Filter (Cat IV)	Replace					U				U								
Air Conditioner Circuit Charge	Check / Recharge																	
Brake Pads (if equipped)	Check / Replace										D							
Tank Brake Fluid (if equipped)	Check / Topping																	
Hydraulic Oil / Tank	Check / Replace										D							
Oil Cooler	Cleaning									D								
Air Conditioner Cooler	Cleaning									D								
Break-In™ Engine Oil	Replace			D														
Engine Oil	Replace									D								
Emergency Brake	Check										D							
Flexible Pipes [c]	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 Aspiration and Delivery Filters	Check / Clean		U															
Nozzles and Anti-Drip Membranes	Check / Clean		U															
Whole Boom	Check / Wash		U															
Accumulator Pressure	Check				U					D								

Break-In is a trademark of Deere & Company
[a] User
[b] Dealer
[c] used in the hydraulic blocking systems

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
Boom Safety Joint Springs	Check				U													
Nozzle	Check / Replace					U												
Nozzle Flow Rate (with a graduate jug)	Check					U												
Boom Components	Grease				U													
Pneumatic Damper Pressure (MZ)	Check		U															
Condensation in Tank (MZ)	Purge				U													
Flowmeter Flow-Rate and Cleaning			U							D								
Air Sleeve (if equipped)	Check				U					D								
Booms Alignment and Integrity	Visual Check				U					D								
Spraying Pump Membranes	Replace									D								
Pump Membrane (aspiration/delivery) Valves	Check / Replace									D								
Spraying Pump Oil	Replace									D								
Boom Pneumatic System (MZ)	Check									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													
Electric Motor Seletron (if equipped)	Check / Replace											U						
Seletron Membranes (if equipped)	Check / Replace								U									
Check oil level – Axle body	CHECK																	U
Check oil level – Planetary gearbox	CHECK																	U
Replace oil – Axle body	RE-PLACE									D	D	D	D	D	D	D	D	D
Replace oil – Planetary gearbox	RE-PLACE									D	D	D	D	D	D	D	D	D
Visually check for leaks	CHECK									D	D	D	D	D	D	D	D	D

[a] *User*
[b] *Dealer*

VK06011,00008E5-19-15MAR22

Maintenance and Service Intervals

John Deere Engine 6068 IIIA

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.

U [a] D [b]	TASK	Every-day / Before every start-up	Every 500 Hours / 1 Year	Every 1500 Hours	Every 1500 Hours / 3 Years	Every 2000 Hours / 2 Years	Ever-y 3000 Hou-rs / 3 Year-s	Every 4500 Hours / 5 Years	Every 6000 Hours / 6 Years	As Re-quired
Engine Speed (operate engine at rated engine speed with load at 50—70% for at least 30 minutes; applies to generator and standby engines only)	Operate	U								
Engine Oil and Coolant Level	Check	U								
Fuel Filter/Water Bowl	Check	U								
Air Cleaner Dust Unloader Valve and Restriction Indicator Gauge	Check	U								
Visual Walkaround Inspection	Check	U								
Engine Mounts	Check		D							
Service Battery	Check		D							
Check Engine Oil and Replace Oil Filter	Check / Change		D							
Crankcase Vent System	Check		D							
Air Intake Hoses, Connections and System	Check / Clean		D							
Fuel Filter Elements	Replace		D							
Automatic Belt Tensioner and Belt Wear	Check / Replace		D							
Engine Electrical Ground Connection	Check		D							
Coolant Solution Analysis (add SCAs as required)	Check		D							
Pressure Test Cooling System	Check		D							
Engine Speeds	Check		D							
Open Crankcase Ventilation (OCV) Filter	Replace			D						
Cooling System	Check		D							
Thermostats	Test					D				
Crankshaft Vibration Damper (6.8 L engines)	Change					D				
Flush and Refill Cooling System	Test					D				
Check and Adjust Engine Valve Clearance	Check					D				
Coolant	Add									D
Air Cleaner Elements	Replace									D
Fan and Alternator Belts	Replace									D
Fuses	Check									D
Air Compressor (if equipped)	Check									D
Bleed Fuel System	Clean									D

[a] *User*
[b] *Dealer*

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.

U [a] D [b]	TASK	Every-day / Before every start-up	Every 500 Hours / 1 Year	Every 1500 Hours	Every 1500 Hours / 3 Years	Every 2000 Hours / 2 Years	Ever-y 3000 Hou-rs / 3 Year-s	Every 4500 Hours / 5 Years	Every 6000 Hours / 6 Years	As Required
Engine Oil	Check	U								
Coolant Level	Check	U								
Drain Water from Fuel Filters	Check	U								
Air Cleaner Dust Valve Restriction Indicator Gauges	Check	U								
Perform Inspection of Engine Compartment	Check	U								
Service Battery	Check		D							
Change Engine Oil and Replace Oil Filter	Change		D							
Coolant Pump Weep Hole	Check		D							
Open Crankcase Ventilation (OCV) System	Check / Clean		D							
Fuel Filters Elements	Replace		D							
Belt Tensioner and Belt Wear	Check		D							
Cooling System	Check		D							
Pressure Test Cooling System	Check		D							
Engine Speeds	Check		D							
Engine Mounts	Check		D							
Engine Ground Connections	Check		D							
Open Crankcase Ventilation (OCV) Filter	Replace			D						
Diesel Exhaust Fluid (DEF) Dosing Unit Filter	Replace				D					
Diesel Exhaust Fluid (DEF) Tank Header Suction Screen	Replace				D					
Engine Valve Clearance	Adjust						D			
Glow Plugs For Continuity	Test						D			
Cooling System	Flush / Refill								D	
Thermostats	Test								D	
Water from Fuel Filters when Alarm Sounds	Drain									D
Coolant	Add									D
Diesel Exhaust Fluid (DEF) Tank	Clean									D
Pre-Start Cleaning Guide	Clean									D
Service Air Cleaner Filter Elements	Clean	U								
Service Air Cleaner Filter Elements	Replace									D
Diesel Particulate Filter (DPF)	Clean									D
Alternator / Fan Belt	Replace									D
Fuses	Check									D
Electrical Wiring and Connections	Check									D
Air Compressors (if equipped)	Check									D

[a] *User*
[b] *Dealer*

U [a] D [b]	TASK	Every-day / Before every start-up	Every 500 Hours / 1 Year	Every 1500 Hours	Every 1500 Hours / 3 Years	Every 2000 Hours / 2 Years	Every 3000 Hour-s / 3 Years	Every 4500 Hours / 5 Years	Every 6000 Hours / 6 Years	As Required
Refrigerant (air-conditioning) Compressor (if equipped)	Check									D
Aftertreatment DEF Dosing System Coolant Filter	Replace									D

[a] *User*
[b] *Dealer*

KWPZAG2,0000A0C-19-27AUG21

Scheduled Maintenance Interval: 100 Hours[1]

REGULAR MAINTENANCE 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			

KWPZAG2,0000A0D-19-27AUG21

[1] *It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.*

Scheduled Maintenance Interval: 500 Hours / 1 Year[2]

REGULAR MAINTENANCE 1/3	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			
Replace Hydraulic Oil Filter Cartridge on Delivery			
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			
Replace Pump Membranes			
Check / Replace Membranes Pump Aspiration and Delivery Valves			
Replace Spray Pump Oil			
Check Boom Pneumatic System (only MZ boom)			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Check Seletrons Membranes (if equipped)			

[2] *It 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 IIIA) 1/3	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 Crankcase Vent System			
Check Air Intake Hoses, Connections and System			
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) 1/3	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			
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

[a] *It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.*

REGULAR MAINTENANCE[a] 2/3	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			
Replace Hydraulic Oil Filter Cartridge on Delivery			
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			
Replace Pump Membranes			
Check / Replace Membranes Pump Aspiration and Delivery Valves			
Replace Spray Pump Oil			
Check Boom Pneumatic System (only MZ boom)			
Check Oil Hydraulic System			
Nitrogen Accumulators Inspection			
Check Seletrons Membranes (if equipped)			

[a] *It 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 IIIA) 2/3	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 Crankcase Vent System			
Check Air Intake Hoses, Connections and System			
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) 2/3	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			
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			

[a] *It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.*

REGULAR MAINTENANCE[a] 3/3	**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			
Replace Hydraulic Oil Filter Cartridge on Delivery			
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			
Replace Pump Membranes			
Check / Replace Membranes Pump Aspiration and Delivery Valves			
Replace Spray Pump Oil			
Check Boom Pneumatic System (Only MZ Boom)			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Check Seletron Membranes (if equipped)			

[a] *It 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 IIIA) 3/3	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 Crankcase Vent System			
Check Air Intake Hoses, Connections, and System			
Replace Fuel Filter Elements			
Check Automatic Belt Tensioner and Belt Wear			
Check Engine Electrical Ground Connection			
Coolant Solution Analysis (add SCAs as required)			
Cooling System - Pressure Test			
Check Engine Speed			

JOHN DEERE ENGINE [a] JOHN DEERE ENGINE (4045 FT4) 3/3	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			
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			

[a] It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

KWPZAG2,0000A0E-19-27AUG21

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			
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			
Change the Oil and Wash the Tank			
Inspect / Replace Brake Pads (if equipped)			
Replace Hydraulic Oil Filter Cartridge on the Return			
Replace Hydraulic Oil Filter Cartridge on the Intake			
Check Emergency Brake			
Check Flow and Clean the Flowmeter			
Visual Inspection Air Sleeve (if equipped)			
Check Alignment and Integrity of the Boom			
Replace Pump Membranes			
Check / Replace Pump Membranes Aspiration and Delivery Valves			
Replace Spray Pump Oil			
Check Boom Pneumatic System (Only MZ Boom)			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Check Seletron Membranes (if equipped)			

[a] *It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.*

KWPZAG2,0000A0F-19-27AUG21

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 Return			
Replace Hydraulic Oil Filter Cartridge on Intake			
Replace Hydraulic Oil Filter Cartridge on Delivery			
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			
Replace Pump Membranes			
Check / Replace Pump Membranes Aspiration and Delivery Valves			
Replace Spray Pump Oil			
Check Boom Pneumatic System (only MZ Boom)			
Check Oil Hydraulic System			
Nitrogen Accumulator Inspection			
Check Seletron Membranes (if equipped)			

[a] *It 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 IIIA) 1/1	AUTHORIZED DEALER STAMP		DATE: HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	**INSPECT / CLEAN**	**REPLACE**	**NOTE**
Change Open Crankcase Ventilation (OCV) Filter			

JOHN DEERE ENGINE [a] JOHN DEERE ENGINE (4045 FT4) 1/1	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			

[a] It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.

KWPZAG2,0000A10-19-27AUG21

Scheduled Maintenance Interval: As Required

JOHN DEERE ENGINE JOHN DEERE ENGINE (6068 IIIA) 1/1	AUTHORIZED DEALER STAMP		DATE: HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	INSPECT / CLEAN	REPLACE	NOTE
Add Coolant			
Replace Air Cleaner Elements			
Replace Fan and Alternator Belts			
Check Fuses			
Check Air Compressor (if equipped)			
Bleed Fuel System			
Replace Alternator			

JOHN DEERE ENGINE[a] JOHN DEERE ENGINE (4045 FT4) 1/1	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			
Pre-Start Cleaning Guide			
Service Air Cleaner Filter Elements			
Clean Diesel Particulate Filter (DPF)			
Replace Alternator / Fan Belt			
Check Fuses			
Check Electrical Wiring and Connections			
Check Air Compressors (if equipped)			
Check Refrigerant Air-Conditioner Compressor (if equipped)			
Replace Aftertreatment DEF Dosing System Coolant Filter			

[a] *It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.*

KWPZAG2,0000A11-19-27AUG21

Scheduled Maintenance Interval: Mechanical Differential Axle

SCHEDULED MAINTENANCE MECHANICAL AXLE Mechanical Differential Axle	AUTHORIZED DEALER STAMP		DATE: HOURS:
	MARK PERFORMED SERVICE		
SUBJECT	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 Logbook[3]

CHECK / CLEAN / REPAIR / REPLACE (indicate activity performed)	DESCRIPTION OF TECHNICAL OPERATION	DATE:	HOURS:

KWPZAG2,0000A12-19-27AUG21

[3] *It is advisable to photocopy the following pages of the booklet, to complete them at each periodic scheduled maintenance intervention.*

Maintenance Points—Left Hand Side

APY65235—UN—05AUG21

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—Engine Air Filter
7—Fan / Compressor Belt, Engine Dipstick - Oil Level, Coolant Draining Point
8—Urea Tank (under compartment)
9—Spray System Panel (MSpray or standard)

KWPZAG2,0000A20-19-29AUG21

Maintenance Points—Right Hand Side

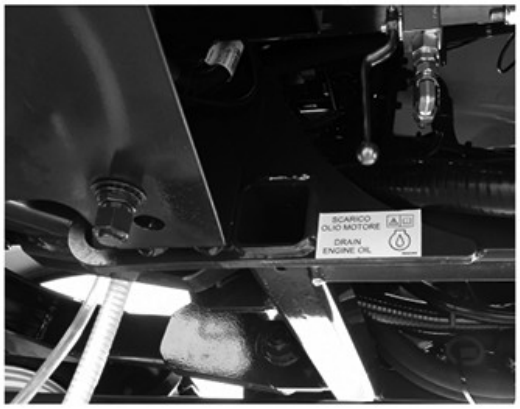
APY65236—UN—05AUG21

10—Hydraulic Oil Visor
11—Inlet Hydraulic Filter, Outlet Hydraulic Filter, Water Separator Filter, Pre-Filter
12—Utilities Panel, Spray Pump, Centrifugal Pump (if equipped)
13—Battery Compartment, Diesel Fuelling Point (behind cab)

KWPZAG2,0000A21-19-29AUG21

Instructional Service Points

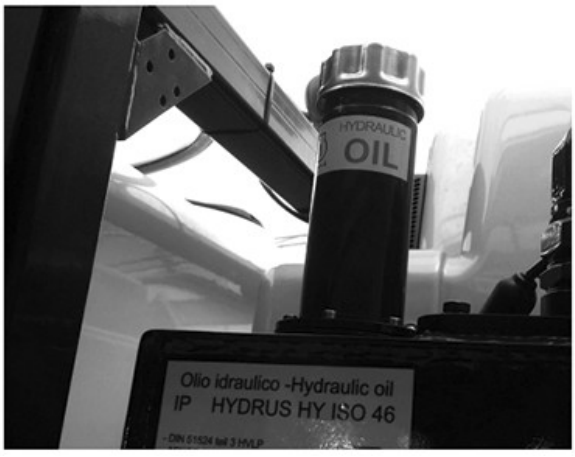
Engine Oil Drain Point Decal



APY65237—UN—05AUG21

Observe the engine drain location point.

Hydraulic Oil Filling Point Decal



APY65238—UN—05AUG21

Observe the hydraulic oil tank location and corresponding decal.

Hydraulic Oil Specifications Decal

APY65239—UN—20JUL21

Observe the hydraulic oil recommended specifications.

Diesel Filling Point Decal

APY65240—UN—20JUL21

Observe the diesel tank location and corresponding decal.

Urea DEF Filling Point Decal

APY65241—UN—20JUL21

Observe the urea tank location and corresponding decal.

KWPZAG2,0000A22-19-29AUG21

Top Up Washer Fluid

CAUTION: Use suitably diluted concentrated or ready-to-use solution. In particularly harsh climates, an antifreeze solution is recommended.

APY65242—UN—20JUL21

A—Cap

To add the windshield washer fluid tank, proceed as follows:

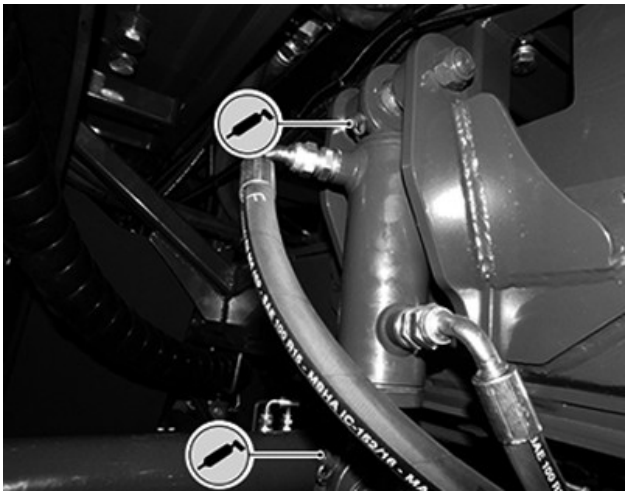
1. Remove the cap (A) accessible from the right footrest of the machine.
2. Add a specific window cleaner product.
3. Close the cap (A).

KWPZAG2,0000A23-19-29AUG21

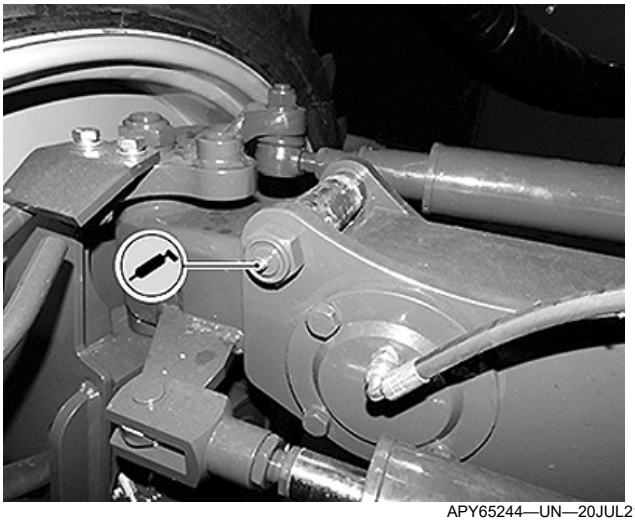
Greasing Points

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.

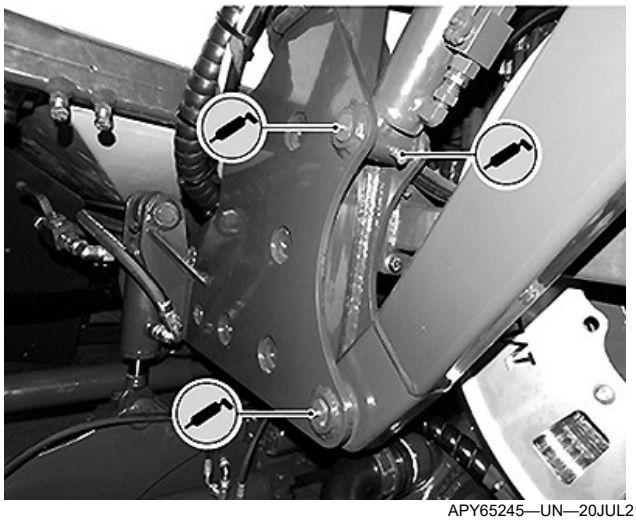
Grease all joints and rotating parts with lubricators periodically.



APY65243—UN—20JUL21

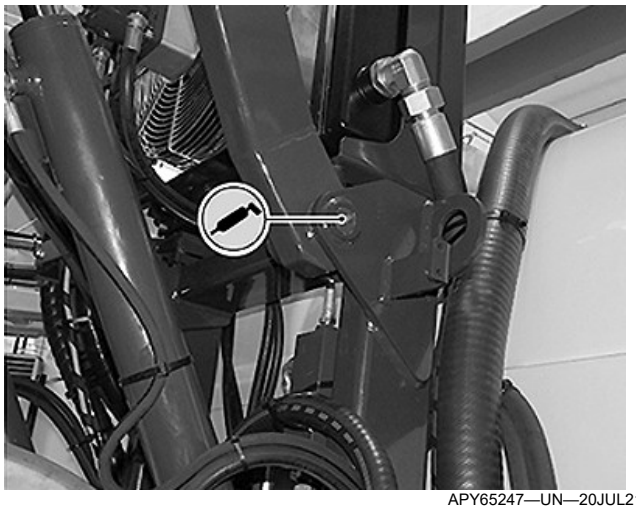


APY65244—UN—20JUL21

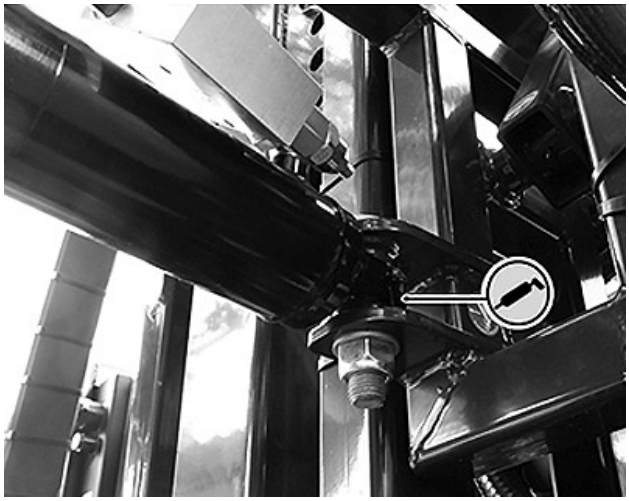


APY65245—UN—20JUL21

APY65246—UN—20JUL21



APY65247—UN—20JUL21



APY65248—UN—20JUL21

APY65249—UN—20JUL21
KWPZAG2,0000A24-19-29AUG21

Wheels and Tires

IMPORTANT: If want to install different tyres other than those mounted on the machine, (even for those listed in the homologation booklet) it is mandatory to request specific written authorization to Mazzotti technical office.

Without this authorization, Mazzotti srl will not be liable for any consequent anomalies, breakdowns or personal injury.

CAUTION: Over-inflated or overheated tyres 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 tyres, 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 tyres to avoid consuming the trend in a 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 tyres comply with the weight of the laden vehicle and the speed of circulation. If machine weight exceeds the tyres 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	Index	Brand	Diameter (mm)	Section (mm)	Inflation Pressure (Bar)
270/95R44	140D	ALLIANCE 350	1605	284	3.6
270/95R48 VF	155D	Agriflex + 363 ALLIANCE	1733	275	4
300/95R46	151A8	ALLIANCE 350	1727	315	3.6
320/90R42	147A8	ALLIANCE 842	1643	319	3.6
320/90R46 IF	155D	ALLIANCE 354	1744	320	3.6
340/85R46	153A8	ALLIANCE 350	1760	340	3.6
380/90R46 (14,9 R46)	165A8	ALLIANCE 842	1863	380	4.9
13.6R38	151A8	ALLIANCE 356	1550	345	4.8
380/80R38	142A8	ALLIANCE 846	1578	375	2.4
380/95R38 IF	154D	ALLIANCE 354	1687	390	2.4
420/85R34	142A8	ALLIANCE 846	1575	420	1.6
420/80R46	159D-162A8 TL	ALLIANCE 385 AGRISTAR	1861	420	3.2
480/70R34	143A8	ALLIANCE 845	1580	479	1.6
460/85R38	154D	FIRESTONE PERF. 85 E.L.	1761	489	2.4
540/65R34	155A8	ALLIANCE 365	1570	533	2.4
540/65R38	153D	ALLIANCE 365	1667	540	2.4
600/60R34	149D	MICHELIN XEOBIB	1595	595	1.0
600/60R38 VF	151D	MICHELIN XEOBIB	1698	586	1
600/65R38	153D	MICHELIN MULTIBIB	1768	595	1.6
650/60R38 VF	155D	MICHELIN XEOBIB	1735	677	1

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	Capacity	600 Nm (M20 X 15 cl. 10.9)

Item	Measurement	Specification
Nuts of Poclain with MHP11	Capacity	1000 Nm (M22 X 1,5 cl. 12.9)

Tighten the brake disc to the specification.

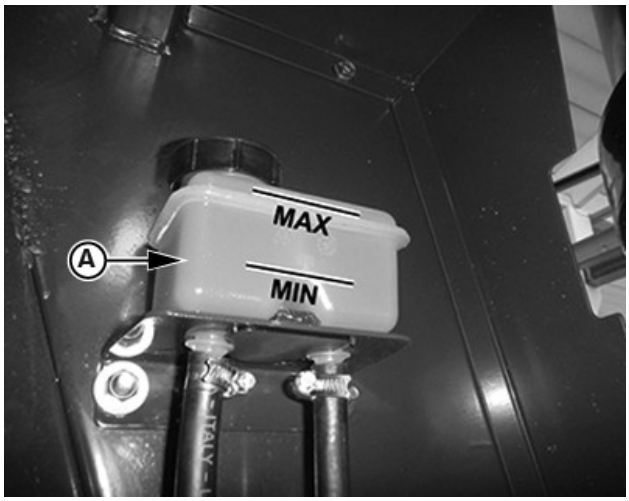
Item	Measurement	Specification
Brake Disc	Capacity	600 Nm (M20 X 1,5 cl. 10.9)

KWPZAG2,0000B4A-19-29SEP21

Disc Brakes (If Equipped)

IMPORTANT: Use AMBRA® NH 610 a mineral oil for filling the disc brake oil tank (A).

IMPORTANT: If the machine is fitted with brake S6 (single pedal) the oil pan brake is not present.



APY65250—UN—20JUL21

A—Disc Brake Oil Tank

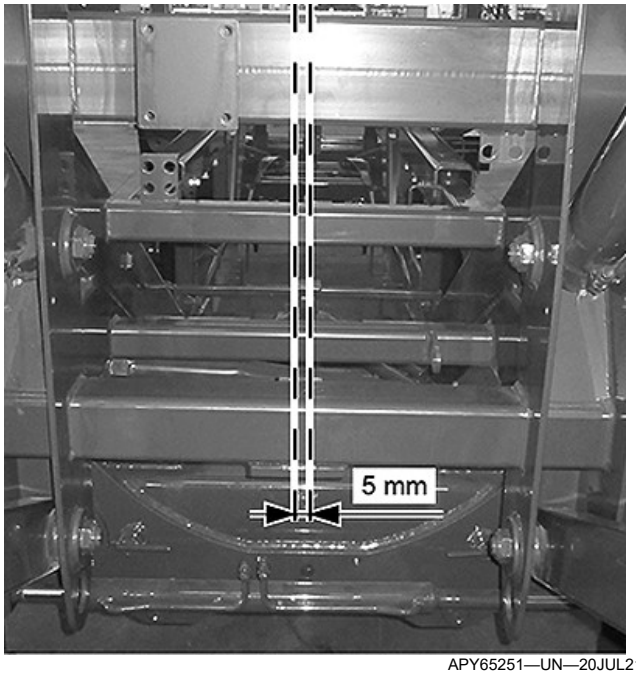
1. Check the disc brake oil inside the disc brake oil tank (A).
2. STOP the engine of the machine and apply park brake.
3. Switch off the ignition and leave the cabin.
4. The disc brake oil tank (A) is placed in front of the left front wheel.
5. The oil level should be between the "MIN" mark and the "MAX" mark on the tank.
6. If required, add oil up to the correct level.

KWPZAG2,0000A26-19-29AUG21

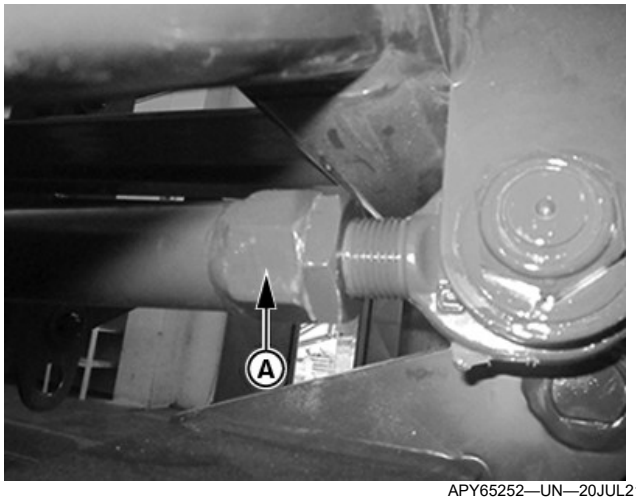
Verification Procedure of Convergence on Roadways

To check the convergence of the wheels, proceed as follows:

- Place the machine with bars closed and empty tanks.
- Verify that the suspensions are at the correct height.



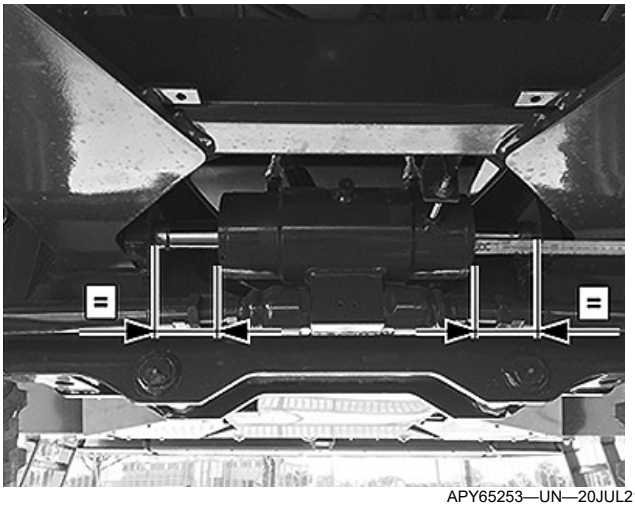
APY65251—UN—20JUL21



APY65252—UN—20JUL21

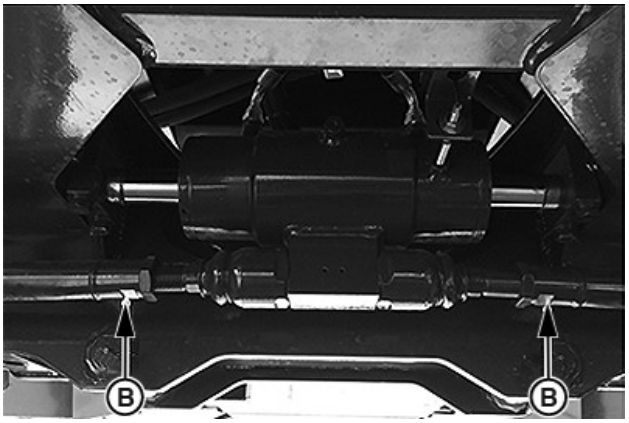
A—Tie Rod

- Check the centering of the axle relative to the machine frame as shown in the figure (looking at the machine from the rear).
- The center of the axle should be moved to the right by 5 mm from the center of the frame.
- If required, adjust the tie rod (A) at the rear axle.
- Move the steering in the center position and check by using a meter if the measure of the stem is corresponding on both sides.



APY65253—UN—20JUL21

APY65254—UN—05AUG21



APY65255—UN—20JUL21

B—Track Width

- Check front and rear wheel alignment with a wire.
- If required, adjust steering head by loosening the locknut (tightening or loosening as required) then tighten the lock nut back.
- Finally, check the value of the track width (B) in the rear of the wheels.
- Check for value between +0 mm to +20 mm if required, adjust the tie rods of the steering.

KWPZAG2,0000A27-19-29AUG21

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

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.

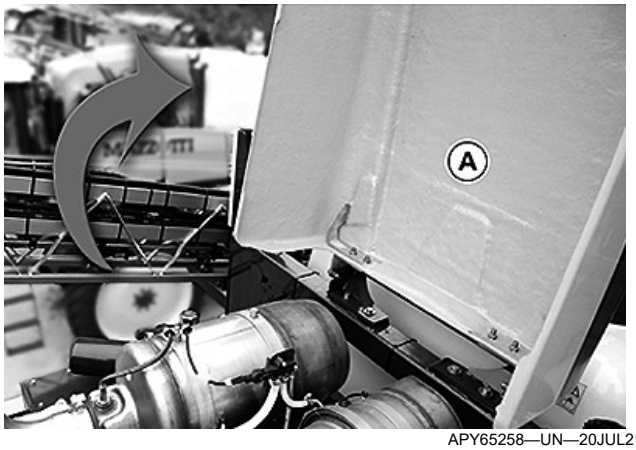
Check that there are no cracks in the cartridge, after inserting a light source.

If damaged, replace them promptly.

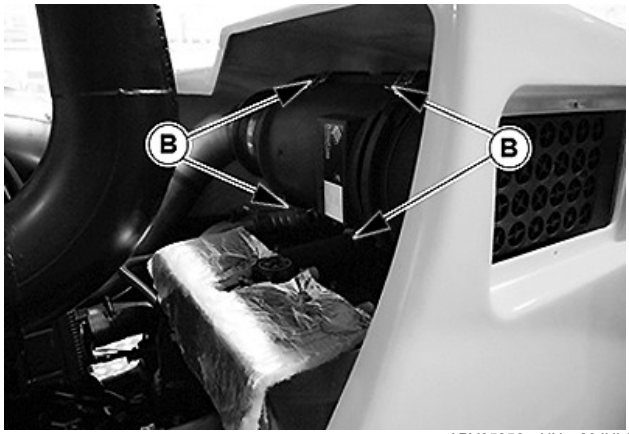
In general, considering the wear level of the filters, it could be necessary to anticipate their replacement times, differently than indicated in the aforementioned booklet.

In order to access the engine filters for the purpose of cleaning or replacing them, it is necessary to:

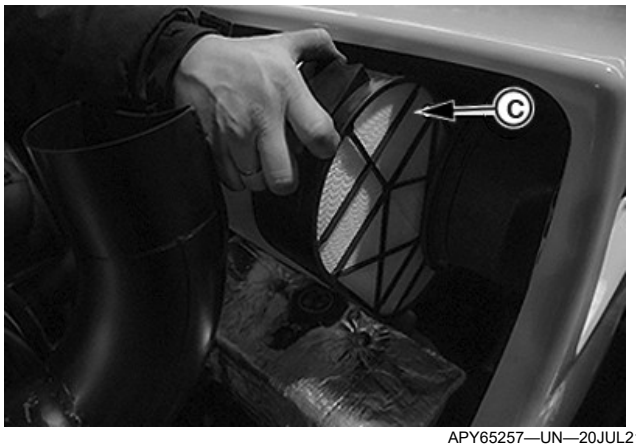
1. STOP the engine.



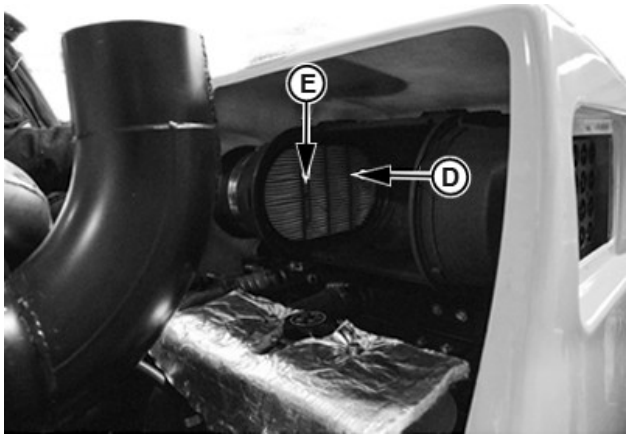
APY65258—UN—20JUL21



APY65256—UN—20JUL21



APY65257—UN—20JUL21



APY65259—UN—20JUL21

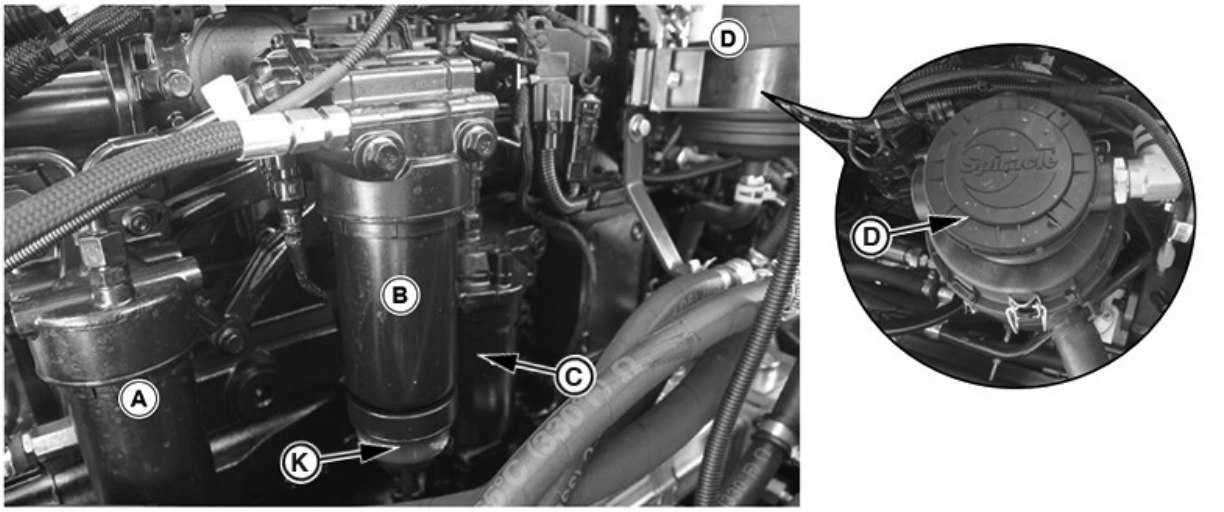
A—Cover
B—Closing Hook (4 Used)
C—Primary Filter
D—Secondary Filter
E—Handle

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 Fuel filter

CAUTION: The image below represents a stage V, that is a John Deere engine in its most complete configuration. Stage II, FT4 and 3A versions may have fewer filters.



APY65260—UN—20JUL21

A—Secondary Diesel Fuel Filter
B—Primary Diesel Fuel Filter
C—Engine Oil Filter
D—OCV (open crankcase ventilation) Filter
K—Decanter 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 (K) drain valve an 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:

- Secondary diesel fuel filter (A)
- Primary diesel fuel filter (B)
- Engine oil filter (C)
- Open crankcase ventilation (OCV) filter (D)

Replace or Add Coolant

APY65261—UN—20JUL21

APY65262—UN—20JUL21

A—Filler Cap

To access the coolant tank, remove (protective) 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 refuelling.

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.

APY65263—UN—20JUL21

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 tranport 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.

APY65264—UN—20JUL21

Cool-Gard is a trademark of Deere & Company

APY65265—UN—20JUL21

A—Tank Cap
B—Dipstick

2. Loosen tank cap (A) of the tank.
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

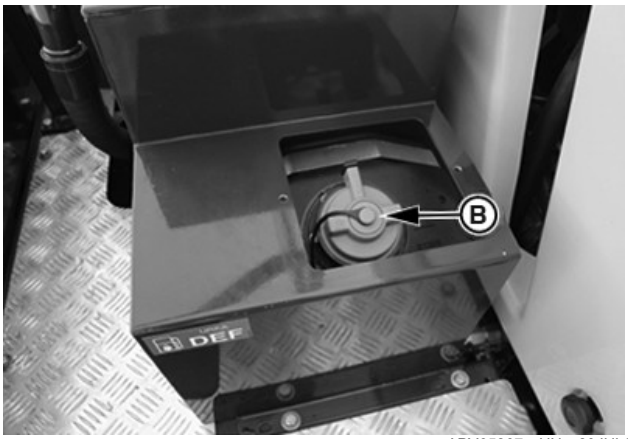
DEF Tank—Capacity. . . . . 19 L (5 gal)

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:

APY65266—UN—20JUL21



APY65267—UN—20JUL21

A—DEF Tank Cover
B—DEF Tank Cap

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.
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.

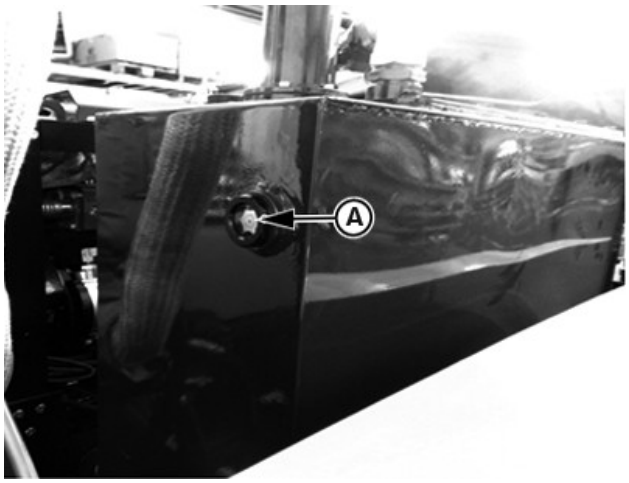
KWPZAG2,0000A29-19-29AUG21

Hydraulic System

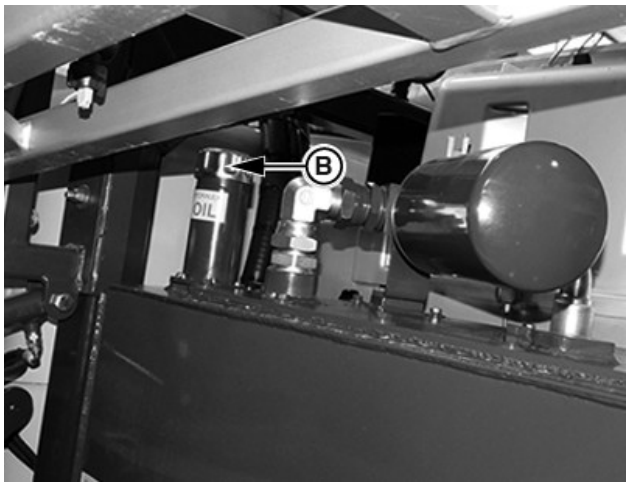
CAUTION: Fine jets of pressurised hydraulic oil can penetrate the skin. Do NOT use your fingers to search for leaks, but use a piece of cardboard.

CAUTION: Use only compatible oil approved by the manufacturer.

Checking the Oil Level in the Main Tank



APY65268—UN—20JUL21



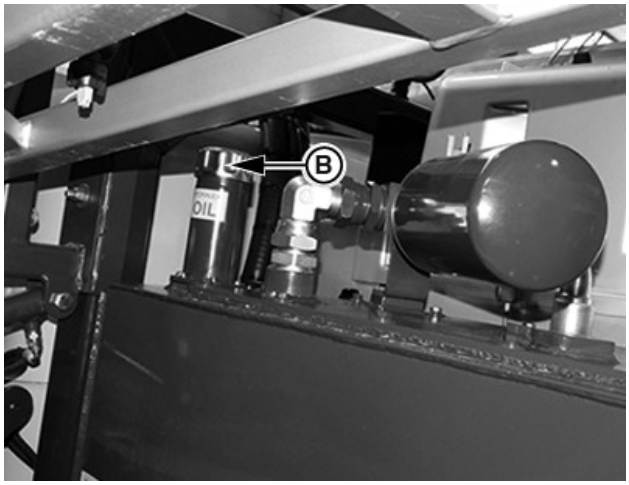
APY65269—UN—20JUL21

A—Hydraulic Oil Level Indicator
B—Cap

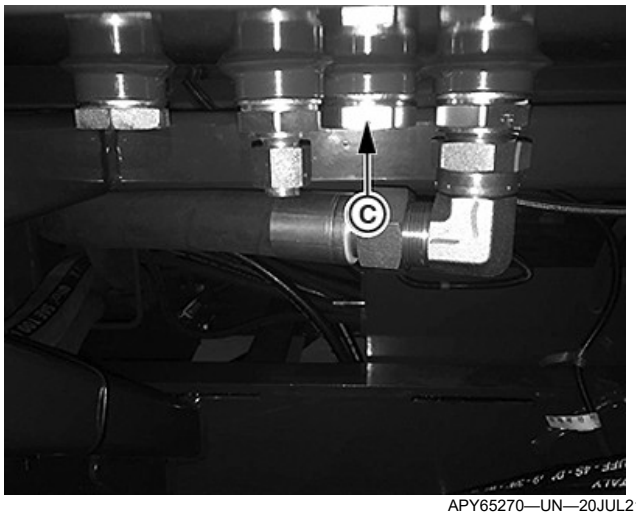
- Check the hydraulic oil level daily through hydraulic oil level indicator (A).
- If required, add oil through the cap (B)

Drain Hydraulic Oil—Main Tank

APY65268—UN—20JUL21



APY65269—UN—20JUL21



APY65270—UN—20JUL21

A—Hydraulic Oil Level Indicator
B—Cap
C—Drain Plug

When it is necessary to replace the hydraulic oil, proceed as follows:

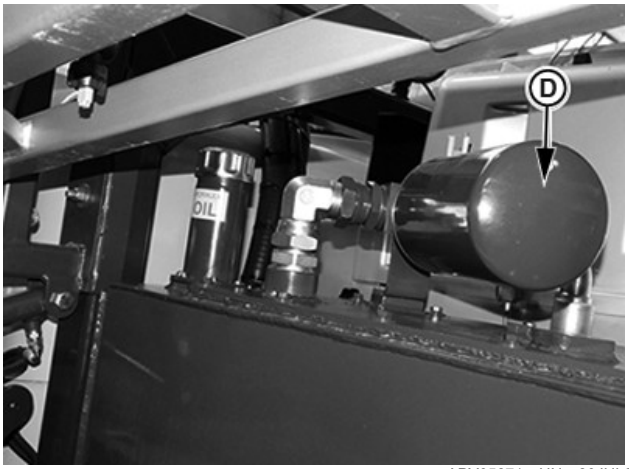
1. Park machine on a flat, level surface and turn engine off and ensure that the park brake is engaged.
2. Place a suitable container under drain plug (C).
3. Remove drain plug (C).
4. After draining the oil, clean and install the drain plug (C).
5. Add oil through cap (B) until it reaches the correct level.
6. Check the oil level through hydraulic oil level indicator (A).
7. Start the motor and perform all hydraulic functions. Check oil level and add oil, if required.

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.



APY65271—UN—20JUL21

D—Cover

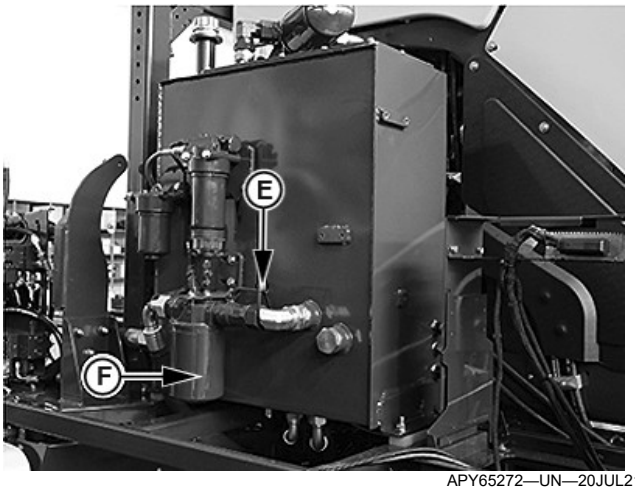
1. Park machine on a flat, level surface and turn engine off and ensure that the park brake is engaged.
2. Place a suitable container under the filter cartridge to collect oil leaks.
3. Remove the cover (D).
4. Replace the cartridge. Clean and lubricate the seat and seal.
5. Align and tighten the cover (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.



APY65272—UN—20JUL21

E—Tap
F—Catridge

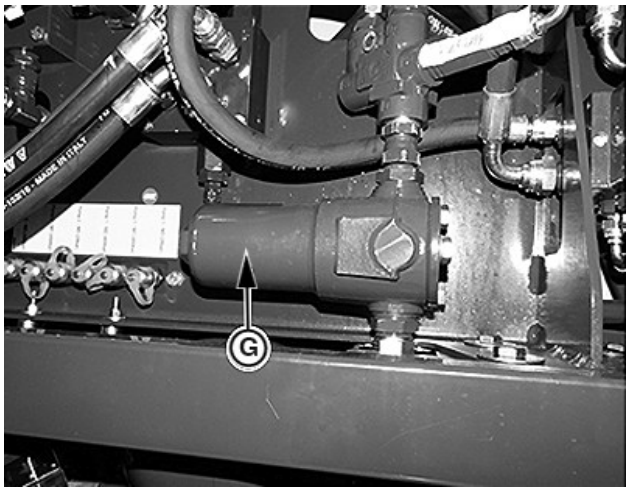
1. Park machine on a flat, level surface and turn engine off and ensure that the parking brake is engaged.
2. Place a suitable container under the filter cartridge to collect oil leaks.
3. Close the tap (E).
4. Remove the filter cartridge by using a chain wrench.
5. Replace the cartridge (F).
6. Clean and lubricate the seat and seal.
7. Tighten by hand then open the tap (E) again and block it with a clip.
8. Tighten the cartridge and open the tap (E). 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.



APY65273—UN—20JUL21

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).

KWPZAG2,0000A2A-19-29AUG21

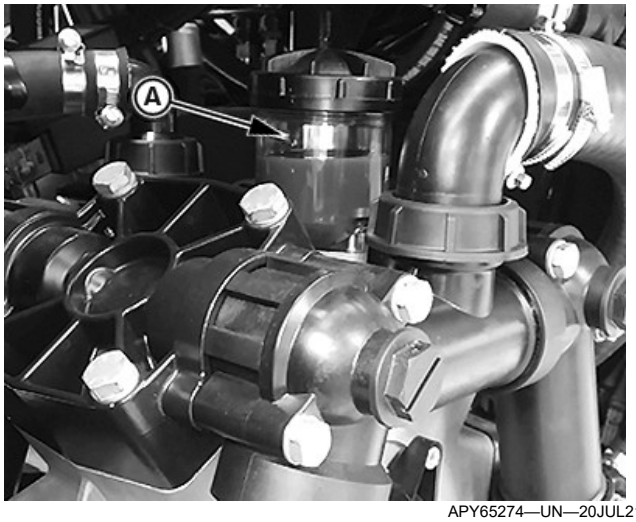
Check Hydraulic Pump Oil

CAUTION: The cup must be half full (between the minimum and maximum level of the indicator).

Above the membrane pump, there is a container cup equipped with a level indicator, containing lubricant to be checked frequently.

To add hydraulic oil, use SAE 15W-40 mineral oil (non-synthetic or semi-synthetic).

Keep the machine and the pump off, follow the procedure:



APY65274—UN—20JUL21

A—Container Cup-Cap

1. Open the right side hood.
2. Check the cold oil level in the container cup-cap (A), as indicated.
3. If necessary, add the oil.
4. Open the container cup-cap (A).
5. Fill the oil through the dedicated opening.
6. Close the cap of the cups and the hood.

KWPZAG2,0000A2B-19-29AUG21

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

PowrSpray Winterization Procedure

IMPORTANT: Ensure the hose reel with wash brush option is drained for winter protection.

AirRinse is a trademark of Deere & Company
TwinSelect is a trademark of Deere & Company
ExactApply is a trademark of Deere & Company

The following procedure is a guide of how best to winterize a powrspray 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.

KWPZAG2,0000A1E-19-27AUG21

AirRinse is a trademark of Deere & Company
ExactApply is a trademark of Deere & Company

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,

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.

KWPZAG2,0000A1F-19-27AUG21

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.

This section serves as a guide for the operator on 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.

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.
	Faulty pump or motors	Replace the pump or motors found to be faulty.
Noise in the transmission	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.
	Faulty pump or motors	Replace the pump or motors found to be faulty.
The machine does not move forward or backward	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.
The machine has insufficient tractive force or does not move in one direction of travel	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 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
	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.
Insufficient quantity of air from ventilation	Clogged air recirculation grilles	Check and clean the grilles.
	Broken fan	Replace the fan.
	Faulty climate control unit	Replace the control unit.
Unpleasant odour in the cab	Need to replace filter	Replace the filters.
	Faulty door seals	Replace the door seals.

KWPZAG2,0000A2C-19-29AUG21

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 authorized John Deere engine distributor or servicing dealer.
	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.
	Too high viscosity crankcase oil	Drain crankcase oil and add oil with correct viscosity.

Symptom	Problem	Solution
	Loose or corroded connections	Clean and tighten connections.
Engine hard to start or does not start	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 the authorized John Deere engine distributor or servicing dealer.
	Electronic fuel system problem	See the authorized John Deere engine distributor or servicing dealer.
	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 the authorized John Deere engine distributor or servicing dealer.

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.
	Dirty or faulty fuel injectors	See the authorized John Deere engine distributor or servicing dealer.
	Electronic fuel system problem	See the authorized John Deere engine distributor or servicing dealer.
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.

Symptom	Problem	Solution
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 the authorized John Deere engine distributor or servicing dealer
	Turbocharger not functioning properly	See the authorized John Deere engine distributor or servicing dealer.
	Air leak in engine intake or exhaust manifold	Check intake and exhaust manifold gaskets and manifolds repair as required. See the authorized John Deere engine distributor or servicing dealer.
	Engine derated DTC	See the authorized John Deere engine distributor or servicing dealer.
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.
Engine idles poorly	Poor fuel quality	Drain fuel and replace with proper grade and quality of fuel for operating condition.
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.
Excessive fuel consumption	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.
	Leaks in fuel supply system	Locate source of leak and repair as required.

Symptom	Problem	Solution
Excessive fuel consumption	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 the authorized John Deere engine distributor or servicing dealer.
	Electronic fuel system problem	See the authorized John Deere engine distributor or servicing dealer.
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.
	Turbocharger not functioning properly	Inspect turbocharger. See the authorized John Deere engine distributor or servicing dealer.
	Low engine temperature	Remove and check thermostat.
Fuel in oil	Restricted fuel return line	Check and fix fuel return lines.
	Engine load too light	Increase the engine load.
	Leaking fuel injectors	See the authorized John Deere engine distributor or servicing dealer.
Low-pressure fuel system (fuel pressure low)	Restricted fuel filter	Replace the fuel filter.
	Restricted fuel line	Locate restriction, repair as required.
	Faulty transfer pump	See the authorized John Deere engine distributor or servicing dealer.
	Faulty high-pressure fuel pump	Remove fuel pump, repair/replace pump as required. See the authorized John Deere engine distributor or servicing dealer.
Abnormal engine noise	Worn main or connecting rod bearings	Determine bearing clearance. See the authorized John Deere engine distributor or servicing dealer.
	Excessive crankshaft end play	Check crankshaft end play. See the authorized John Deere engine distributor or servicing dealer.

Symptom	Problem	Solution
	Loose main bearing caps	Check bearing clearance, replace bearings and bearing cap screws as required. See the authorized John Deere engine distributor or servicing dealer.
	Worn connecting rod bushings and piston pins	Inspect piston pins and bushings. See the authorized John Deere engine distributor or servicing dealer.
	Scored pistons	Inspect pistons. See the authorized John Deere engine distributor or servicing dealer.
	Worn timing gears or excess backlash	Check timing gear back lash. See your authorized John Deere engine distributor or servicing dealer.
Abnormal engine noise	Excessive valve clearance	Check and adjust valve clearance.
	Worn camshaft lobes	Inspect camshaft. See the authorized John Deere engine distributor or servicing dealer.
	Worn rocker arm shafts	Inspect rocker arm shafts. See the authorized John Deere engine distributor or servicing dealer.
	Worn valve guides	Check valve guides for wear. See the authorized John Deere engine distributor or servicing dealer.
	Damaged valve retainers	Inspect retainers and retainer locks for excessive wear. See the authorized John Deere engine distributor or servicing dealer.
	Loose or worn rocker arms	Inspect rocker arms for wear. See the authorized John Deere engine distributor or servicing dealer.
	Bent pushrods	Inspect pushrods for straightness and check contact ends for wear and damage. See the authorized John Deere engine distributor or servicing dealer.
	Broken valve springs	Inspect valve springs. See the authorized John Deere engine distributor or servicing dealer.
	Bent connecting rods	Inspect connecting rods and cap for damage. See the authorized John Deere engine distributor or servicing dealer.

Symptom	Problem	Solution
	Worn flywheel	Inspect flywheel and ring gear for damage. See the authorized John Deere engine distributor or servicing dealer.
	Loose flywheel	Check flywheel mounting screw. See the authorized John Deere engine distributor or servicing dealer.
	Excessive piston to liner clearance	Check and adjust piston liner clearance. See the authorized John Deere engine distributor or servicing dealer.
	Excessive thrust bearing clearance	Check and adjust thrust bearing clearance. See the authorized John Deere engine distributor or servicing dealer.
	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 the authorized John Deere engine distributor or servicing dealer.
Turbocharger noise or vibration[1]	Bearings not lubricated (insufficient oil pressure)	Determine cause of lack of lubrication, repair as required. See the authorized John Deere engine distributor or servicing dealer.
	Air leak in engine intake or exhaust manifold	Check intake and exhaust manifold gaskets and manifolds, repair as required. See the authorized John Deere engine distributor or servicing dealer.
	Improper clearance between turbine wheel and turbine housing	Inspect turbocharger; repair/replace as required. See the authorized John Deere engine distributor or servicing dealer.
	Broken blades (or other wheel failures)	Inspect turbocharger: Repair/replace as required. See the authorized John Deere engine distributor or servicing dealer.
Engine has reached service only soot level	Auto filter cleaning disabled for an extended period of time	Enable exhaust filter cleaning.

[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
	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 addedto 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 the authorized John Deere engine distributor or servicing dealer.
	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 the authorized John Deere engine distributor or servicing dealer.
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.
	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.
	Defective thermostat	Remove and check thermostat.
	Defective fuel injectors	See the authorized John Deere engine distributor or servicing dealer.
Engine emits black, gray or blue smoke	Engine overloaded	Reduce engine load.
	Engine burning oil	See the authorized John Deere engine distributor or servicing dealer.
	Air cleaner restricted or dirty	Replace air cleaner element as required.

Symptom	Problem	Solution
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.
	Exhaust filter is cracked or damaged	See the authorized John Deere engine distributor or servicing dealer.
	Improper type of fuel	Use proper fuel.
	Fuel injectors dirty	See the authorized John Deere engine distributor or servicing dealer.
	Electronic control system problem or basic engine problem	See the authorized John Deere engine distributor or servicing dealer.
	Turbocharger not functioning properly	See the authorized John Deere engine distributor or servicing dealer.
Engine overheats	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.
	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 the authorized John Deere engine distributor or servicing dealer.
	Leak at cylinder head gasket	Replace cylinder head gasket. See the authorized John Deere engine distributor or servicing dealer.
	Defective coolant pump	Replace coolant pump. See the authorized John Deere engine distributor or servicing dealer.
	Defective radiator cap	Replace radiator cap as required.
	Defective temperature gauge or sender	Check coolant temperature with thermometer and replace if necessary.

Symptom	Problem	Solution
	Incorrect grade of fuel	Use correct grade of fuel.
Coolant temperature below normal	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 the authorized John Deere distributor or servicing dealer.
	Cylinder head or block cracked	Locate crack, repair/replace components as required. See the authorized John Deere engine distributor or servicing dealer.
	Cylinder liner seals leaking	Remove and inspect cylinder liners. See the authorized John Deere engine distributor or servicing dealer.
	Pitted cylinder liners	Remove and inspect cylinder liners. See the authorized John Deere engine distributor or servicing dealer.
	Leaking oil cooler	Pressure test oil cooler, repair/replace as required. See the authorized John Deere engine distributor or servicing dealer.
	Defective oil cooler O-rings	Remove and inspect oil cooler O-rings, replace as required. See the authorized John Deere engine distributor or servicing dealer.
	EGR cooler system leaking	Pressure test EGR cooler system, repair/replace as required. See the authorized John Deere engine distributor or servicing dealer.
	Faulty coolant pump seal, weep hole plugged, coolant leaking through bearing	Replace coolant pump seals. See the authorized John Deere engine distributor or servicing dealer.
Low oil pressure	Low crankcase oil level	Fill crankcase to proper oil level.
	Faulty pressure sensor	Replace sensor. See the authorized John Deere engine distributor or servicing dealer.
	Restricted oil cooler or filter	Remove and inspect oil cooler. See the authorized John Deere engine distributor or servicing dealer.

Symptom	Problem	Solution
	Excessive oil temperature	Remove and inspect oil cooler. See the authorized John Deere engine distributor or servicing dealer.
	Defective oil pump	Remove and inspect oil pump. See the authorized John Deere engine distributor or servicing dealer.
	Incorrect oil	Drain crankcase and refill with correct oil.
	Oil pressure regulating valve failure	Remove and inspect oil pressure regulating valve. See the authorized John Deere engine distributor or servicing dealer.
	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 the authorized John Deere engine distributor or servicing dealer.
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 the authorized John Deere engine distributor or servicing dealer.
	Oil pressure regulating valve failure	Remove and inspect oil pressure regulating valve. See your authorized John Deere engine distributor or servicing dealer.
	Stuck or damaged filter bypass valve	Remove and inspect filter bypass valve. See the authorized John Deere engine distributor or servicing dealer.
	Stuck or damaged oil cooler bypass valve	Remove and inspect oil cooler bypass valve. See the authorized John Deere engine distributor or servicing dealer
Excessive oil consumption	Too low viscosity crankcase oil	Drain crankcase and add oil with correct viscosity.
	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.

Symptom	Problem	Solution
	Oil control rings not seated	See the authorized John Deere engine distributor or servicing dealer.
	Oil control rings worn or broken	Replace piston rings. See the authorized John Deere engine distributor or servicing dealer.
	Restricted crankcase vent tube	Clean vent tube, verify that crankcase oil level is not too high.
	Defective turbocharger	See the authorized John Deere engine distributor or servicing dealer.
	Scored cylinder liners or pistons	Remove and inspect cylinders and liners, replace as required. See the authorized John Deere engine distributor or servicing dealer.
	Worn valve guides or stems	Inspect and measure valve stems and valve guides, repair as required. See the authorized John Deere engine distributor or servicing dealer.
	Piston ring grooves excessively worn	Remove and inspect pistons. See the authorized John Deere engine distributor or servicing dealer.
	Piston rings sticking in ring grooves	Remove and inspect pistons. See the authorized John Deere engine distributor or servicing dealer.
	Insufficient piston ring tension	Remove and inspect pistons. See the authorized John Deere engine distributor or servicing dealer.
	Piston ring gaps not staggered	Remove and inspect pistons. See the authorized John Deere engine distributor or servicing dealer.
Excessive oil consumption	Front and/or rear crankshaft oil seal faulty	Replace oil seals. See the authorized John Deere engine distributor or servicing dealer.
Undercharged electrical system	Excessive electrical load from added accessories	Remove accessories or install higher output alternator. See the authorized John Deere engine distributor or servicing dealer
	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.

Symptom	Problem	Solution
	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.

KWPZAG2,0000A2D-19-29AUG21

Alarm Cabin Sound

A sound alarm goes off when:

- The operator stands up from the seat.
- Automatic axles are activated.

KWPZAG2,0000A2E-19-29AUG21

Machine Error Codes—If Equipped with MS08/MHP11

IMPORTANT: Error codes are presented in the Tera10 display, in the alarm C zone.

APY65275—UN—20JUL21

List of alarm codes that appears on the Tera 10 display:

Code	Description
C1—5	Memory Issue on the MC2M Cab
C21—25	Memory Iissue on the MC2M Chassis
C101—109	Joystick Anomaly
C116	Engagement Cylinder Front Axle in High Speed Gear
C141—148	Anomaly Air Sleeve Potentiometer
C191	Full Spray Tank Sensor Anomaly
C252	Low Hydraulic Oil Level
C253	Return Oil Filter Clogged
C255	Air Filter Clogged

C271	Issue on CAN Bus Lines
C281	Issue on Poclain Hydraulic Motors
EC4215	Accelerator Cab
EC4216	External Accelerator
EC4211	Operator is not Seated
4242	Brake Pressure under 80 bar
4071	Out of Range Command Limiter
3001	Problem with Pump 1
3002	Problem with Pump 2
6001	Problem with CAN Bus ECU1
6002	Problem with CAN Bus ECU2
6028	Problem with CAN Bus LFE Engine

KWPZAG2,0000A2F-19-29AUG21

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).
23	OVER_TEMPERATURE_ ORANGE	It indicates ECU over current (orange zone warning).
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.
45	PARAM_ASBUFFERFULL	Buffer for asynchronous parameter writing full, last write operation lost.
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.
57	UNI_INPUT_CONFIG	Input that does not lead a bank is configured.
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.
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.
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.
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.
4162	PUMP2_SPEED_SENSOR	Signal out of range for pump 2 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.
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).
4241	MAX_MACHINE_SPEED_ REDUCED_EXTERNINPUT	Maximum machine speed reduced, ECU failure.
4242	MAX_MACHINE_SPEED_ REDUCED_BRAKEACUU	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.

KWPZAG2,0000A30-19-30DEC21

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.

- There are several possible combinations of SPN and FMI codes.
- 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.

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
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
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 solve the engine fault, contact the authorized John Deere dealer.
- Always contact the authorized John Deere for help in correcting unsolved diagnostic trouble codes which are displayed for the engine.

KWPZAG2,0000A31-19-29AUG21

Diagnostic Functions on the Tera Display 10

APY65276—UN—20JUL21

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. MC2M Cabin

APY65277—UN—20JUL21

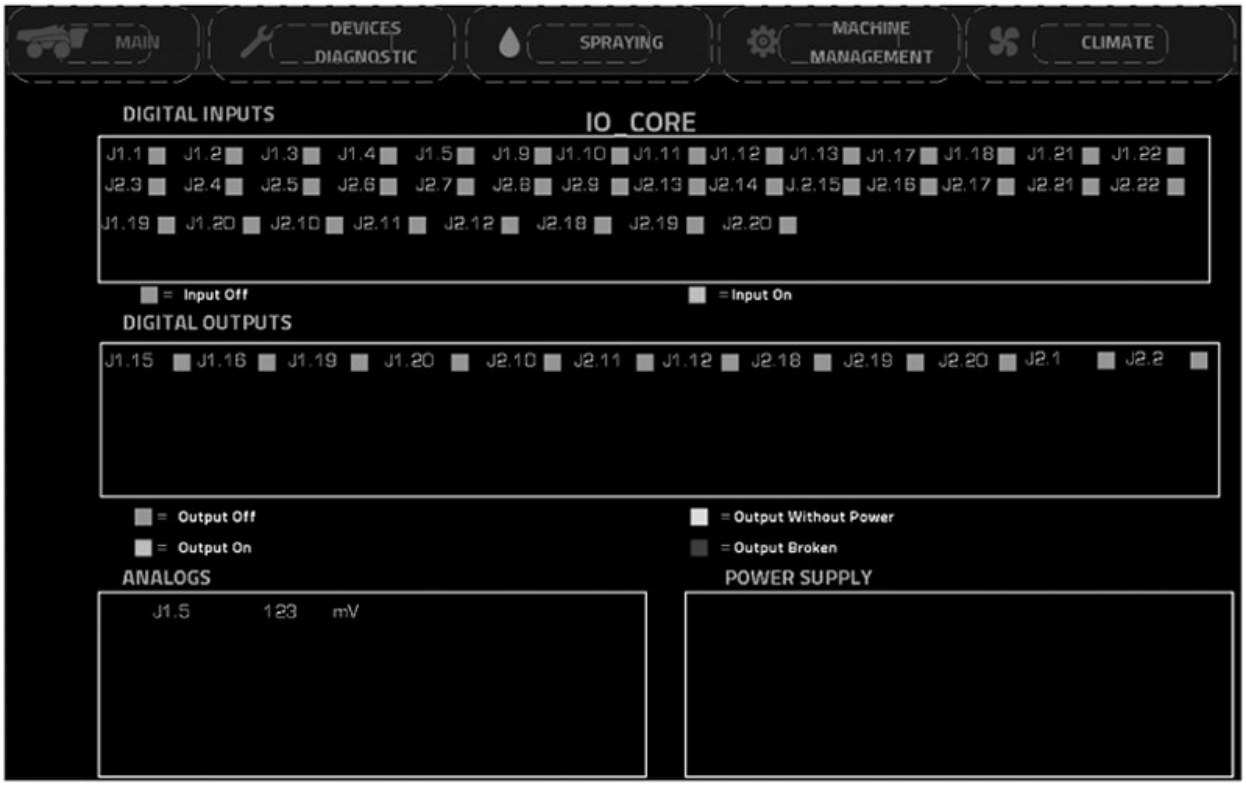
2. MC2M Chassis

APY65278—UN—20JUL21

3. Liberty Link

APY65279—UN—20JUL21

4.IO Core

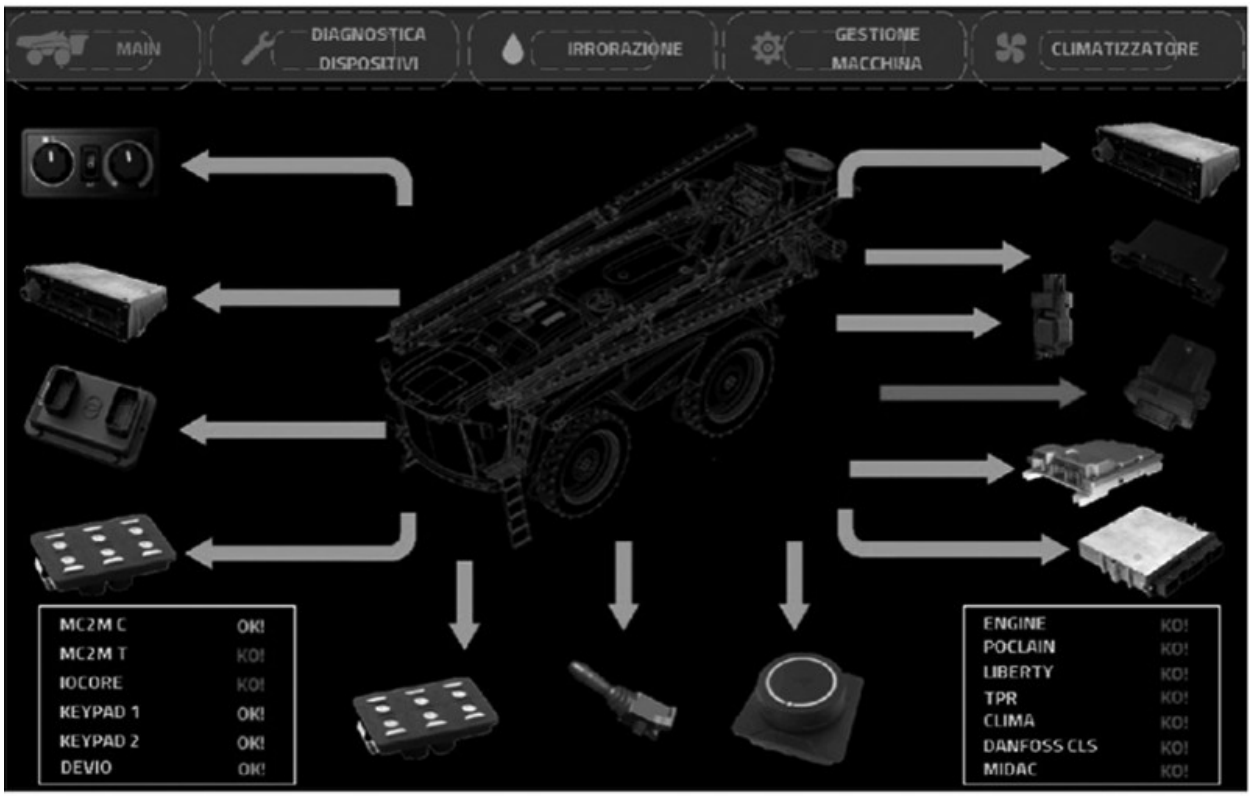


APY65280—UN—20JUL21

5.MIDAC - Steering S2C

APY65281—UN—20JUL21

6. CAN Line



APY65282—UN—20JUL21

This screen provides access to all machine controllers.

If the control unit displays OK! means it has no issues while controllers presenting KO! require investigation or may not be presented on the machine.

KWPZAG2,0000A32-19-29AUG21

Specifications

Machine Specifications

Engine			
Type	**Diesel EU Stage V**	**Diesel EU Stage IIIa**	**Diesel, Stage V**
Manufacturer	**John Deere**	**John Deere**	**John Deere**
Model	4045HN056 PowerTech™ PSS	6068HN078 Power Tech E	6068HN075 6.8L PVS
Number of Cylinders	6	6	6
Bore and Stroke	106 mm (4.19 in) x 127 mm (5 in)	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 (414 cu. in.)	6.8L (415 in3)
Maximum Power	129 kW	129 kW	168 kW
Maximum Torque	667 N.m at 1600 rpm	667 N.m at 1550 rpm	970 Nm @ 1600 rpm
Compression Ratio	19.0:1	19.0:1	16.7:1.
Firing Order	1-3-4-2	1-5-3-6-2-4	1-5-3-6-2-4
Type of Fuel	EN 590 or ASTM D975	EN 590 or ASTM D975	Diesel
Fuel System	High Pressure Common Rail (HPCR)	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, Variable Displacement
Wheel Motors	**MS8** (1248 cm3/rev) - 1C, 2C **MHP11** (1400 cm3/rev) - 1C, 2C, 3C

Brakes	
MS8 Hyd Motor	Service, Parking and Emergency Brake
MHP11 Hyd Motor	Hydrostatic, Service, Parking and Emergency Brakes

Capacities			
Machine Model	**MAF 3180**	**MAF 3580**	**MAF 4080**
Main Tank	3100 L	3600 L	4200 L
Rinse Water Tank	260 L	260 L	520 L
Eductor	50 L	50 L	50 L
Diesel Exhaust Fluid (DEF) Tank	19 L	19 L	19 L
Hydraulic Reservoir	170 L	170 L	170 L
Diesel Reservoir	190 L or 235 L		235 L
Hand Washing Tank	15 L	15 L	15 L
Engine Oil Pan	20 L (tier 3 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

Hydraulic System	
Type	Pressure Compensated Load Sensing
Pump	Axial Piston Type

Ground Speed		
	MS8	**MHP11**
1C	20 km/h	18 km/h
2C	40 km/h	27 km/h
3C	Not Applicable	42 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	1.5 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	PowrSpray (R700 system): Centrifical Spray Pump 750 L/min (pump output), Dedicated Fill Pump (600 L/min) 2” System

Boom Types			
Machine Model	**MAF 3180**	**MAF 3580**	**MAF 4080**
24 m Ti-M	Yes	Yes	No
28 m Ti-M	Yes	Yes	No
24 m EVO	Yes	Yes	No
28 m EVO	Yes	Yes	Yes
30 m EVO	Yes	Yes	Yes
24 m MK	Yes	Yes	Yes
28 m MK	Yes	Yes	Yes
32/34 m MK	Yes	Yes	Yes
36/24 m MK	Yes	Yes	Yes

Slopes at Working Speeds		
	Lateral Slope (MS8 and MHP11)	**Front Slope (MS08 and MHP11)**
20 km/h	19%	30%
40 km/h	16%	30%

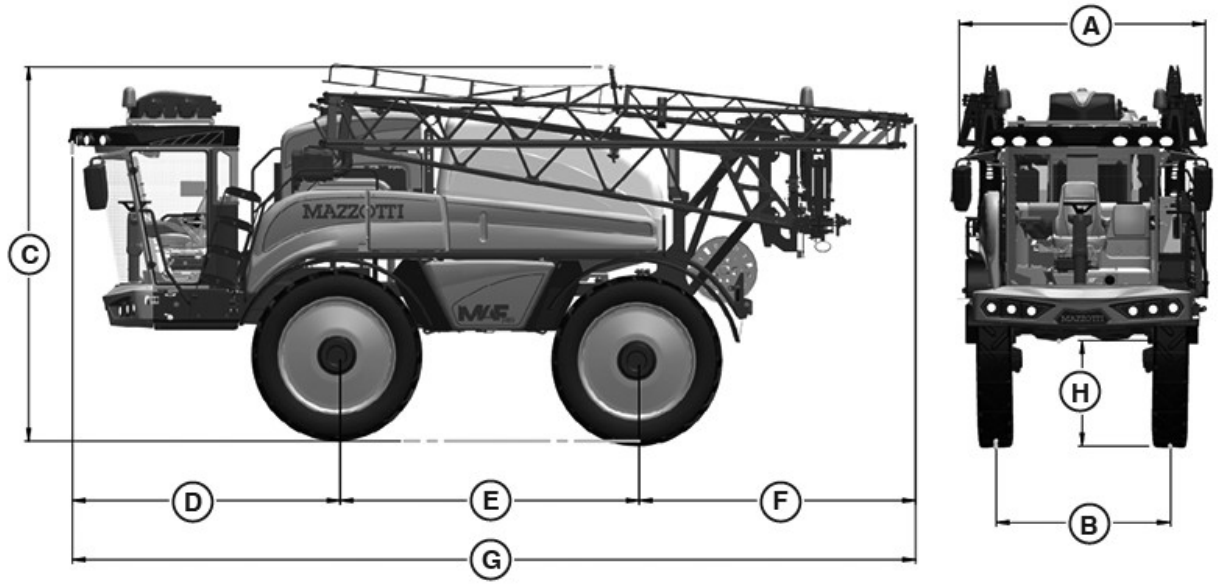
Slopes According to Track Width	
	Height
1800 mm	400 mm
2250 mm	600 mm
2950 mm	700 mm

Nozzle Technology	
Individual Nozzle Control (INC)	Turn on and off based on the section control.
Seletron Arag	

Turning Radius					
Tire configuration	270/95R48 VF	300/95R46	320/90R46 IF	340/85R46	380/95R38 IF
2-Wheel Steering (axle 1600)	6.9 m	6.9 m	6.9 m	6.9 m	6.,9 m
2-Wheel Steering (axle 1800)	6.6 m	6.6 m	6.6 m	6.6 m	6.6 m
Tire configuration	460/85R38	540/65R38	600/60R38 VF	600/65R38	650/60R38 VF
2-Wheel Steering (axle 1600)	6.9 m	6.9 m	6.9 m	6.9 m	6.9 m
2-Wheel Steering (axle 1800)	6.6 m	6.6 m	6.6 m	6.6 m	6.6 m

vk06011,1669986757788-19-21MAR23

Machine Dimensions



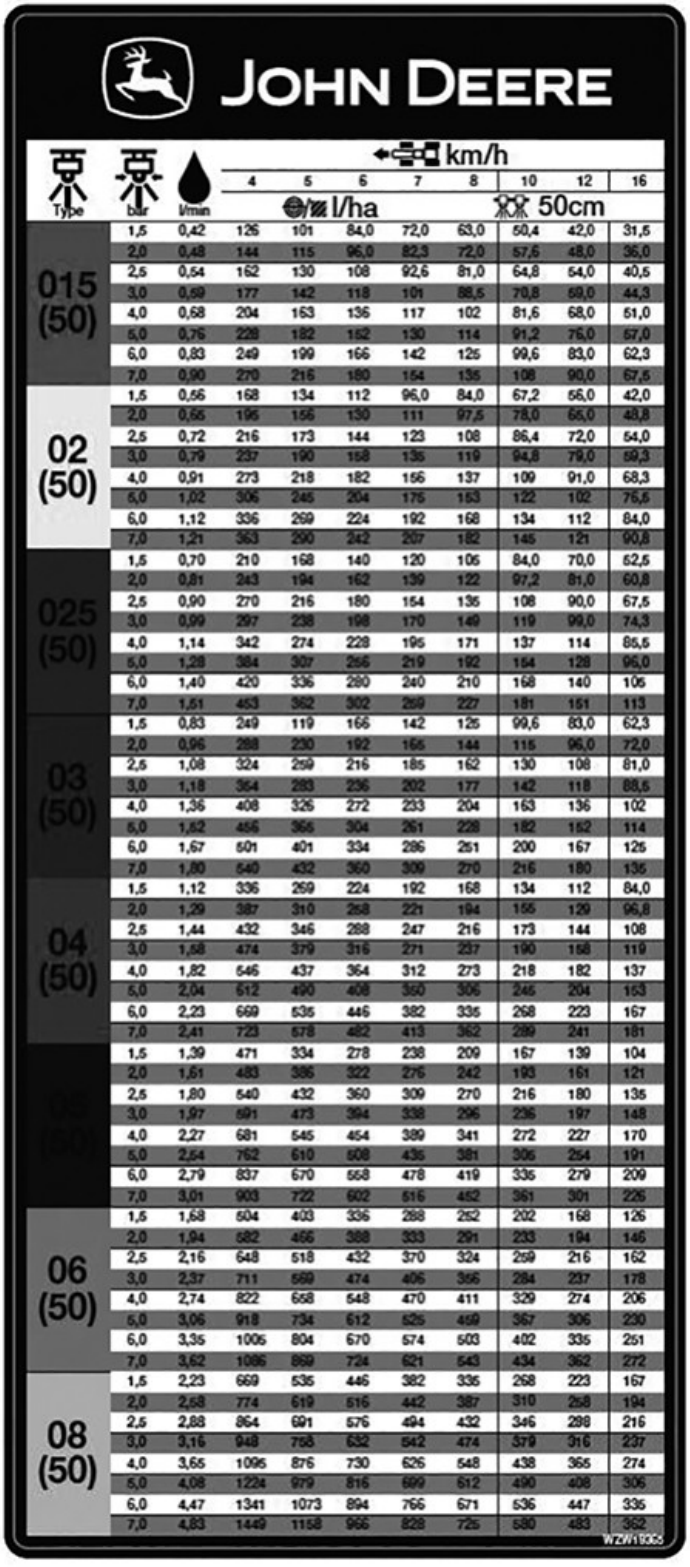
APY65283—UN—20JUL21

A—Machine Width at Boom
B—Wheel Tread from Center to Center
C—Machine Height
D—Distance from Center of Front Wheel to Front-Most Machine Point
E—Wheel Base
F—Distance from Center of Rear Wheel to Rear-Most Boom Point
G—Front of the Machine to Rear-Most Boom Point
H—Ground Clearance

Overall Dimensions			
Machine Model	**MAF 3180**	**MAF 3580**	**MAF 4080**
A	2.55 m	2.55 m	2.55 m
B (min-max)	1.5÷3 m	1.5÷3 m	1.5÷3 m
C	3.88 m	3.88 m	3.88 m
D	2.77 m	2.77 m	2.77 m
E	3.1÷3.2 m	3.1÷3.2 m	3.4 m
F	2.85 m	2.85 m	2.85 m
G	8.75 m	8.75 m	9.05 m
H	1.0÷1.3 m	1.0÷1.3 m	1.0÷1.3 m
Min Boom Lenght (m)	24 m	24 m	28 m
Max Boom Lenght (m)	36 m	36 m	36 m
Weight Distribution (loaded)	50-50	50-50	50-50

KWPZAG2,0000A14-19-27AUG21

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	0,59	177	142	118	101	88,5	70,8	59,0	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
	7,0	0,90	270	216	180	154	135	108	90,0	67,5
02 (50)	1,5	0,56	168	134	112	96,0	84,0	67,2	56,0	42,0
	2,0	0,65	195	156	130	111	97,5	78,0	65,0	48,8
	2,5	0,72	216	173	144	123	108	86,4	72,0	54,0
	3,0	0,79	237	190	158	135	119	94,8	79,0	59,3
	4,0	0,91	273	218	182	156	137	109	91,0	68,3
	5,0	1,02	306	245	204	175	153	122	102	76,5
	6,0	1,12	336	269	224	192	168	134	112	84,0
	7,0	1,21	363	290	242	207	182	145	121	90,8
025 (50)	1,5	0,70	210	168	140	120	105	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	195	171	137	114	85,5
	5,0	1,28	384	307	256	219	192	154	128	96,0
	6,0	1,40	420	336	280	240	210	168	140	105
	7,0	1,51	453	362	302	259	227	181	151	113
03 (50)	1,5	0,83	249	119	166	142	125	99,6	83,0	62,3
	2,0	0,96	288	230	192	165	144	115	96,0	72,0
	2,5	1,08	324	259	216	185	162	130	108	81,0
	3,0	1,18	354	283	236	202	177	142	118	88,5
	4,0	1,36	408	326	272	233	204	163	136	102
	5,0	1,52	456	366	304	261	228	182	152	114
	6,0	1,67	501	401	334	286	251	200	167	125
	7,0	1,80	540	432	360	309	270	216	180	135
04 (50)	1,5	1,12	336	269	224	192	168	134	112	84,0
	2,0	1,29	387	310	258	221	194	155	129	96,8
	2,5	1,44	432	346	288	247	216	173	144	108
	3,0	1,58	474	379	316	271	237	190	158	119
	4,0	1,82	546	437	364	312	273	218	182	137
	5,0	2,04	612	490	408	350	306	245	204	153
	6,0	2,23	669	535	446	382	335	268	223	167
	7,0	2,41	723	578	482	413	362	289	241	181
[illegible]	1,5	1,39	471	334	278	238	209	167	139	104
	2,0	1,61	483	386	322	276	242	193	161	121
	2,5	1,80	540	432	360	309	270	216	180	135
	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	2,54	762	610	508	436	381	305	254	191
	6,0	2,79	837	670	558	478	419	335	279	209
	7,0	3,01	903	722	602	516	452	361	301	226
06 (50)	1,5	1,68	504	403	336	288	252	202	168	126
	2,0	1,94	582	466	388	333	291	233	194	146
	2,5	2,16	648	518	432	370	324	259	216	162
	3,0	2,37	711	569	474	406	356	284	237	178
	4,0	2,74	822	658	548	470	411	329	274	206
	5,0	3,06	918	734	612	525	459	367	306	230
	6,0	3,35	1005	804	670	574	503	402	335	251
	7,0	3,62	1086	869	724	621	543	434	362	272
08 (50)	1,5	2,23	669	535	446	382	335	268	223	167
	2,0	2,58	774	619	516	442	387	310	258	194
	2,5	2,88	864	691	576	494	432	346	288	216
	3,0	3,16	948	758	632	542	474	379	316	237
	4,0	3,65	1095	876	730	626	548	438	365	274
	5,0	4,08	1224	979	816	699	612	490	408	306
	6,0	4,47	1341	1073	894	766	671	536	447	335
	7,0	4,83	1449	1158	966	828	725	580	483	362

WZW11935

APY65285—UN—10AUG21
KWPZAG2,0000A15-19-27AUG21

EU Declaration of Conformity

Mazzotti S.R.L
Ravenna (RA) - Italy

The undersigned hereby declares that:

Machine Type: Self-Propelled Sprayer-Small MAF
Model(s): MAF 3180; MAF 3580; MAF 4080

fulfill(s) all relevant provisions and essential requirements of the following directives:

Directive	Number	Certification Method
Machine Directive	2006/42/CE	Self-Certification
Eletromagnetic Compatibility	2014/30UE	Self-Certification

The product is in conformity with the following standards and/or other normative documents:

EN ISO 4254-1:2015
EN ISO 4254-6:2020
EN ISO 14982:2009
EN ISO 16119-1:2013
EN ISO 16119-2:2013

Name and address of the person in the European Community authorized to compile the technical construction file:

Mazzotti S.R.L
Dismano Street, 138/A, Ravenna – IT
CAP 48124
commerciale@mazzotti.it

This declaration of conformity is issued under the sole responsibility of the manufacturer.

Place of Declaration: Ravenna (RA), Italy
Date of Declaration: 31 August 2021
Manufacturing Unit: Mazzotti S.R.L., Ravenna (RA), Italy

Name: Michael Jeffrey Meyers

Title: Factory Manager

KWPZAG2,0000A3B-19-31AUG21

CE

DXCE01—UN—28APR09

Reference Standards

Directive	Description
2014/30/UE	Electromagnetic Compatibility Directive
2014/35/UE	Low Voltage Directive
2006/42/CE	Machinery Directive
2009/127/CE	Directive Amending Machinery Directive (2006/42/CE) with Regard for Pesticide Application

Law	Description
UNI EN ISO 3744:2010	Acoustics - determination of sound power levels and sound energy levels of noise sources using sound pressure - engineering methods for an essentially free field over a reflecting plane.
ISO 6394:2008	Earth-moving machinery - determination of emission sound pressure level at operator's position.
UNI EN ISO 1032:2009	Mechanical vibration - testing of mobile machinery in order to determine the vibration emission value.
UNI ISO 5006:2008	Earth-moving machinery -operator's visual field - test method and performance criteria.
UNI EN 15695-1:2010	Agricultural tractors and self-propelled sprayers - protection of the operator (driver) against hazardous substances - part 1: cab classification, requirements and test procedures.
UNI EN ISO 4254-1:2015	Agricultural machinery - safety - part 1: general requirements.
UNI EN ISO 4254-6:2010	Agricultural machinery - safety - part 6: sprayers and liquid fertilizer distributors.
UNI EN ISO 13857:2008	Safety of machinery - safety distances to prevent hazard zones being reached by upper and lower limbs.
UNI EN ISO 16119-1:2013	Agricultural and forestry machinery - environmental requirements for sprayers - part 1: general.
UNI EN ISO 16119-2:2013	Agricultural and forestry machinery - environmental requirements for sprayers - part 2: horizontal boom sprayers.
ISO 11684:1995	Tractors, machinery for agriculture and forestry, powered lawn and garden equipment - safety signs and hazard pictorials - general principles.
ISO 3767- 1:2016	Tractors, machinery for agriculture and forestry, powered lawn and garden equipment - symbols for operator controls and other displays. Common symbols.
ISO 3767-2:2016	Tractors, machinery for agriculture and forestry, powered lawn and garden equipment - symbols.

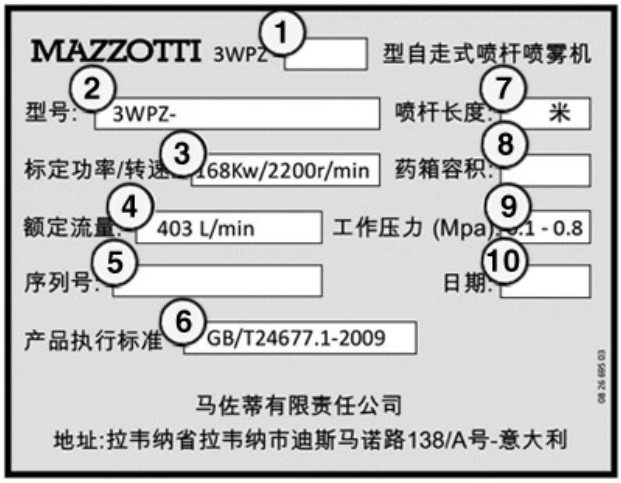
KWPZAG2,0000A1A-19-27AUG21

Identification Plates

Basic Machine Identification Plate

TG527605—UN—28DEC21

Machine Identification Plate



TG527594—UN—13DEC21

Machine Identification Plate for China

1—Model (MAF 5240- "5280"/MAF4240- "4620")
2—Model (3WPZ-4620N/3WPZ-5280N)
3—Engine Power/RPM
4—Nominal Flow (spraying)
5—Serial Number
6—Reference Standard
7—Booms Length
8—Main Tank Capacity
9—Pressure Range in Work
10—Date of Production

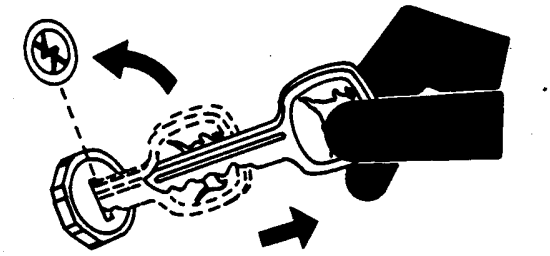
KWPZAG2,00009F8-19-30DEC21

Cab Identification Plate

NOTE: The cab identification plate is located underneath the cab floor mat.

APY65290—UN—29JUL21
KWPZAG2,00009F9-19-27AUG21

Keep Machine Secure



TS230—UN—24MAY89

1. Install vandal-proof devices.
2. When machine is in storage:
   a. Lower equipment to the ground.
   b. Set wheels to widest position to make loading more difficult.
   c. Remove any keys and batteries.
3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
4. When parking outdoors, store in a well-lighted and fenced area.
5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.
6. Notify the authorized John Deere dealer of any losses.

KWPZAG2,00009FA-19-27AUG21

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

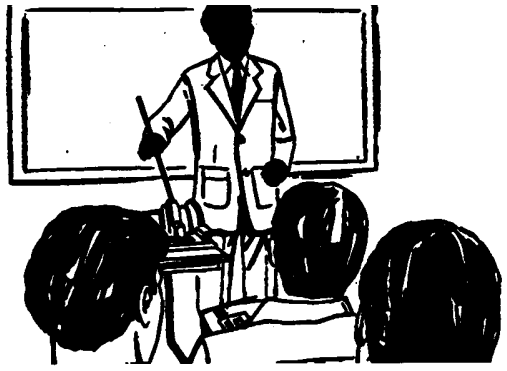
The Right Tools

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

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

Index

A

Aftermarket equipment - INC 55A-1
Avoid static electricity risk when fueling 10-3

B

Battery Handling, Safety
  Safety, Battery Handling 10-13
Belts
  Service drive belts safely 10-17
Biodiesel fuel 70-3
Break-in engine oil
  Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V 70-10
  Non-Emissions certified and certified tier 1, tier 2, tier 3, stage I, stage II, and stage III 70-9

C

Coolant
  Diesel engine
    Engine with wet sleeve cylinder liners 70-5
  John deere COOL-GARD II coolant extender 70-6
  Mixing with concentrate, water quality 70-6
  Testing 70-2
  Testing freeze point 70-7
  Warm temperature climates 70-6

D

DEF
  Disposal 70-13
  Storing 70-11
  Tank, refilling 70-12
  Testing 70-12
  Use in SCR equipped engines 70-11
Diesel engine oil
  Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V 70-9
  Tier 2 and stage II 70-8
Diesel engines, cold weather effect 70-4
Diesel fuel 70-1
  Supplemental additives 70-2
Diesel fuel, testing 70-4

E

Effect of cold weather on diesel engines 70-4
Engine oil
  Break-In
    Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V 70-10
    Non-Emissions certified and certified tier 1, tier 2, tier 3, stage I, stage II, and stage III 70-9
  Diesel
    Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V 70-9
    Tier 2 and stage II 70-8
Engine oil and filter service intervals
  Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V
    0.12 L/kW or greater oil pan 70-10
  Tier 2 and stage II
    Standard drain oil pan 70-8
Exhaust Filter, Safety
  Safety, Exhaust Filter 10-19

F

Filters, Oil
  Oil Filters 70-13
Fuel
  Biodiesel 70-3
  Diesel 70-1
  Handling and storing 70-2
  Lubricity 70-1
Fuel Filters
  Filters, Fuel 70-13

I

IBS
  Operate 55A-3
INC
  Indexed boom sections 55A-3
  Nozzle control run page 55A-2
  Nozzle control system overview 55A-1
  Operate nozzle control
    Indexed boom sections 55A-3
    Remote control 55A-5
  Overview
    Nozzle control system 55A-1
  Pairing
    Remote control 55A-7
  Remote control 55A-5
  Remote control reciever
    Pairing 55A-7
  Remote controls
    Bluetooth pairing 55A-7
  Run page
    Nozzle control 55A-2
  Setup
    Spray sections 55A-3
  Theory of operation
    Nozzle control system 55A-1
  Use with aftermarket equipment 55A-1
INC, Boom Configuration 55A-8

J

Job Settings 45-14
  Agit. (Agitation Control) 45-16
  Job 1 45-15
  Job 2 45-17
John Deere TerrainCommand™ Pro 55-1
  Boom working mode 55-2

BoomCtrl Settings 55-4

L

Lubricant
Mixing 70-14
Lubricant Storage
Storage, Lubricant 70-14
Lubricants, safety 70-14
Lubricity of diesel fuel 70-1

M

Mixing lubricants 70-14

O

Oil
Engine
Interim tier 4, final tier 4, stage IIIB, stage IV, and stage V 70-9
Tier 2 and stage II 70-8

R

Refueling, avoid static electricity risk 10-3
Remote control -INC 55A-5

S

Safety
Heated and ventilated operator's seat 10-8
Operator ability 10-4
Passenger seat 10-8
Protect against noise 10-2
Safe maintenance, practice 10-16
Tractor, operating safely 10-5
Vibration 10-4
Safety, Avoid High-Pressure Fluids
Avoid High-Pressure Fluids 10-18
Safety, Fire Prevention
Fire Prevention 10-2
Safety, Handle Fuel Safely, Avoid Fires
Avoid Fires, Handle Fuel Safely 10-2
Safety, lubricants 70-14
Safety, Steps and Handholds
Use Steps and Handholds Correctly 10-5
Signal words, understand 10-1
Spray section setup 55A-3
Spray section setup - INC 55A-3
Storing fuel 70-2
Symbol List 45-9

T

Tank Filling 45-18
Automatic 45-18
Manual 45-19
Testing diesel fuel 70-4
Tractor, operating safely 10-5

U

Use with aftermarket equipment - INC 55A-1