

Покупайте оригинальные и аналоговые запчасти для сельхозтехники Джон Дир в компании Аврора Агро Партс на www.aa-p.ru

M944, M952, M962, M944i, M952i, and M962i Trailed Crop Sprayers with Multi-Function Controller (MFC)



JOHN DEERE

OPERATOR'S MANUAL

M944, M952, M962, M944i, M952i, and M962i Trailed Crop Sprayers

OMWZW16264 ISSUE 21DEC18 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

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

If this product contains a gasoline engine:



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

The State of California requires the above two warnings.

Additional Proposition 65 Warnings can be found in this manual.

John Deere Fabriek Horst B.V.

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 predelivery inspection of this machine.

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

This trailed crop 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 TRAILED CROP 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 WITHIN 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.

AG,WZ00009,211-19-16OCT06

Predelivery Inspection

The following inspections have been made at the factory. Prior to delivery, the following items must be rechecked or performed by the dealer:

Predelivery Inspection

- $\hfill\square$ 1. Is the pump oil level OK?
- $\hfill\square$ 2. Do all moving parts move freely?
- □ 3. Is the machine undamaged? (incl. electrical wiring, hoses, stickers and warning signs)
- □ 4. Are all functions operating properly?
- \Box 5. Is the nozzle output of the various nozzles OK?
- \Box 6. Is the spray pattern of the various nozzles OK?
- □ 7. Are all lights working properly?
- \Box 8. Are the tire pressures OK?
- $\hfill\square$ 9. Is there excessive play in the wheel bearings?
- □ 10. Are all grease nipples lubricated?
- \Box 11. Does the machine leak?
- $\hfill\square$ 12. Are the nozzles drip free?
- $\hfill\square$ 13. Do the brakes work properly?
- □ 14. Is the PTO shaft of the correct length?
- \Box 15. Is the power supply connected to the tractor?

- \Box 16. Is the machine coupled to the tractor?
- □ 17. Is the Multi-Function Control lever MFC mounted in the cab?
- □ 18. Has antifreeze been removed, and are all dismounted parts refitted (filters, hoses, pressure gauge and end caps)?
- □ 19. Has the steering axle automatic tracking system been mounted and adjusted (option)?
- $\hfill\square$ 20. Has the spraying computer been programmed and the sensors calibrated?
- $\hfill\square$ 21. Are all wheel nuts tightened to the specified torque?
- $\hfill\square$ 22. Has the machine been tested with clean water?
- $\hfill\square$ 23. Has the customer been familiarised with the operation and safety measures of the sprayer?
- □ 24. All mandatory open Product Improvement Programs (PIP) should be completed prior to delivering the machine to a customer.
- □ 25. Has a Shipping Tow Eye been fitted? Remove Shipping Tow Eye and fit supplied tow eye.

Introduction

Signature Dealer/Service Technician

Date:

WZ00232,0000377-19-20DEC16

Contents

Page

Identification Views	
Identification Views	00-1

Introduction to the Machine

Standard Machine and Options	01-1
Accessories	01-1
Auxiliary Equipment/Information	01-2

Safety

Recognize Safety Information	05-1
Understand Signal Words	05-1
Follow Safety Instructions	05-1
Prepare for Emergencies	05-1
Wear Protective Clothing	05-2
Protect Against Noise	05-2
General Machine Operation Safety	05-2
Operators	05-2
Use Steps and Handholds Correctly	05-2
Mechanical Safety	05-3
Transport in the Field and on the Road	05-3
Transport Safely	05-4
Avoid Backover Accidents	05-5
Working Area	05-5
Keep Riders Off Machine	05-5
Use Safety Lights and Devices	05-5
Protect Against High Pressure Spray	05-6
Respiratory Protection	05-6
Skin Protection	05-6
Maintenance of Means of Personal	
Protection	05-7
Tractor Cab	05-7
Avoid Contact with Agricultural Chemicals	05-7
Handle Agricultural Chemicals Safely	05-8
Service and Operate Chemical Sprayers	
Safely	05-8
Chemical Safety	05-9
Danger Symbols	. 05-10
Non-Permissible Use	. 05-11
Clean Vehicle of Hazardous Pesticides	. 05-11
Prevent Development of Micro Organisms	. 05-11
Park Machine Safely	. 05-11
Work In Ventilated Área	. 05-11
Remove Paint Before Welding or Heating	. 05-12
Avoid Heating Near Pressurized Fluid Lines	. 05-12
Welding Near Electronic Control Units	. 05-12
Work in Clean Area	. 05-13
Practice Safe Maintenance	. 05-13
Safety During Maintenance Work	. 05-13
Use Proper Tools	. 05-14
Avoid High-Pressure Fluids	. 05-14
Check/Replace Hydraulic Hoses	. 05-14
Service Tires Safely	. 05-15

Page

Safety Decals

Pictorial Safety Signs	10-1
User Documentation	10-1
Chemical Documentation in Use	10-1
Turn Off the Engine	10-1
Working with High Pressure	10-1
Transport Position	10-2
Clearance between Boom and Cab	10-2
Spray Boom Locking	10-2
Danger of Poisoning	10-2
Passengers	10-2
Danger Point of Spray Booms	10-3
Clean Water	10-3
Caution with Moving Parts (PTO Option)	10-3
Maximum Solution Pump Speed	10-3
Spray Boom Hinge Points	10-4
Means of Personal Protection	10-4
Dangerous Substances	10-4
Manual Drain	10-4
Spray Boom Movement Range	10-5
Risk of Explosion	10-5
Chocks - Pneumatic Brakes Only	10-6
Chemical Inductor	10-6
Platform Ladder	10-6
Boom Support	10-7
Maximum Working Pressure	10-7
Maximum Hydraulic Pressure	10-7

Preparing the Tractor

General	15-1
Operation of Hydraulic Functions	15-1
Hydraulic Pump Drive - Requirements	15-4
Hydraulic Pump Drive - Over Speed	
Protection	15-4
Hydraulic Oil Filter	15-5
Vertical Load	15-5
Electrical Operation — Diagram for the	
Implement Display 1100	15-6
Install Implement Display in the Tractor Cab	15-6
Power Supply — 3-Pole Plug	15-7
Fitting Electrical Socket to Tractor	15-7
Electrical Operation — Diagram for ISOBUS	
Displays	15-8
Install GreenStar Display in the Tractor Cab	15-9
Install Multi-Function Control Lever (MFC) in	
Iractor Cab1	5-10
Supporting IOSBUS Aux-N Input Devices 1	5-11

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 © 2018 John Deere GmbH & Co. KG Mannheim Regional Center Zentralfunktionen All rights reserved.

Power Supply — 9-Pole Plug	15-11
Fuses	15-11
Install Wiring Harness on Tractor - Before	45 40
Model Year 2019	15-12
Install Wiring Harnesses on Tractor - After	15 10
Stooring Avia Automatic Tracking System	10-10
Assembly	15 20
Assembly	13-20

Preparing the Machine

Preparing the Machine	
PTÖ Shaft 2	0-1
Remove Shipping Tow Eye Were Fitted 2	0-1
Pump Oil Level	0-1
Suction Line 2	0-1
Lubrication 2	:0-1

Coupling and Uncoupling of the Sprayer

Drawbar Tow Eyes	25-1
Coupling to the Tractor	25-1
Hydraulic Jack Support	25-2
Uncoupling the Sprayer	25-2
Raising Up the Machine	25-3
Track Width Adjustment with Fixed and	
Steered Axle	25-4
Reflector Plates	25-5
Hydraulic Connection - Electro-Hydraulic	25-5
Hydraulic Connection - Tractor Selective	
Control Valves	25-6
Avoid High-Pressure Fluids	25-7
Coupling Brake Hoses	25-7
Hydraulic Emergency Brake Valve	25-8
Hydraulic Pump Drive (Option)	25-9
Electrical Connection	25-9
Attaching Display	
ID 1100	25-10
GS2 1800	25-10
GS3 2630	25-10
Automatic Tracking System	25-11
PTO Shaft Connection (Option)	25-11

Transport

Public Road	30-1
Public Road Travelling Lights	30-1
Hydraulic Braking System (Not For Germany)	30-1
Pneumatic Braking System	30-3
Pneumatic Braking System - Option from	
Model Year 2019	30-4
Beacon Light	30-6

Adjustments

Adjustments	
Hydraulic Pump Drive - Over Speed	
Protection	35-1
Adjusting The Spray Boom Transport	
Position	35-1
Spray Boom Alignment 3	35-2
Adjusting the Center Frame	35-3
Balancing The Spray Boom	35-3
Adjusting The Boom Suspension	35-4
Adjusting The Automatic Tracking System	35-5
Steered Axle - Stop Bolt Adjustment	35-5
· · ·	

Operation of the Machine

Machine Composition	 40-1
Functional Diagram	

Manual System with Ring Line Circulation and Twin Diaphragm Pumps Manual System with Pressure Circulation	40-3
and Twin Diaphragm Pumps Automated System with Ring Line	40-5
Automated System with Pressure	/-40
Pressure Circulation Option	40-11
Pesticides	40-12
Chemical in Use Components of the Solution System—	40-12
Solution System Panel - AutoFill Switch	40-13
(Uption)	40-15
Filling Opening	40-16
Liquid Level Indicator (Solution Tank)	40-16
Digital Tank Level Indicator	40-17
Agitation	40-17
Chemical Inductor	40-17
Primary Pressure Regulator	40-19
Pressure Selection Valve	40-19
Return Selection Valve	40-19
Pressure and Flow Measurement	40-19
Pressure Filter	40-20
Hand Washing Tank	40-20 40_21
Rinse Water Tank	40-21
Solution Tank Rinsing Nozzles	40-26
Solution Tank Rinsing	40-26
Electrical Operation Group	40-26
Fuses	40-27
Multi-Function Control (MFC)	
Control Layout	40-28
Spray System Master On/Off Switch	40-29
Agitation, Working Lights and F-Switch	40-29
	40-29
Derating IBS (Index Boom Sections)	40-31
Chemical Transport Compartment	40-33
Pressure Circulation System (Ontion)	40-34
Suction Unit	40-36
Transfer Valve to Pump Liquid Back to	
Storage Tank (Option)	40-37
Solution Pump Recommendations	40-37
Pump	40-38
Spray Boom	40-40
Boom Suspension System	40-51
Boom Tilt Correction	40-52
Spray Line and Nozzle Holders	40-53
Replacing Nozzles	40-55
Checking and Replacing Worn Nozzles	40-56
	40-56
Filling Rinse Water Tank	40-57
Without Using Fill Connection	10 57
Manual Drain	40-57 40-58
System Rinse	40-50 40-58
System Rinse with AutoDilute	40-60
Hydraulic Pump Drive (Option)	40-69
Automatic Trailing Functions	40-70
Axles	40-71

Page

Page

Sprayer Control System		
John Deere Implement Display 1100	4	1-1
Operation	4	1-2
General Information	4	1-3
Sprayer - Main	4	1-5
with I winSelect Automatic In Cab Nozzle		
	4	1-1
Section UN/UFF Softkey Layout	41	-10
Agitation Work Lights and E Switch	41	-12
Poost Modo	41 //1	1-13
Ich Settings	41 //1	1-14
AutoFill Tank Filling	<u>-</u> 1	-13
Nozzle Calculator	41	-22
Machine Settings	41	-23
General Settings		-24
Boom Settings	41	-25
Nozzle Presets	41	-26
with TwinSelect Automatic In Cab Nozzle		
Control	41	-27
Outer Nozzle Presets	41	-28
BoomTracTM	41	-29
Tank Settings	41	-30
Regulation Settings	41	-31
	41	-33
Flow Calibration	41	-34
Liquid Pressure Calibration	41	-30
Tank Sanaar Calibratian	41	1-39
Boom Tilt Calibration	41 //1	1-41
Boom Height Calibration (BoomTrac)	4 1 //1	1_40
Steering Calibration	41	-52
Main Page Lavout	41	-54
Steering	. 41	-56
Performance Data		-57
Actual	41	-57
Field	41	-58
Total	41	-59
Info	41	-60
Diagnostics	41	-60
Info Readings	41	-61
Sensor Status	41	-62
Multi-Function Control Status	41	-64
CreenSterTM SpreyerDreTM and John Deere		-00
Section Control	11	-66
Warning Screen Codes	<u>-</u> 1	1-68
		00
Wheels and Tires		
Wheel Load and Tire Pressure	/	15_1
Explanations of Indications on Agricultural	4	-U-1
Tires	4	15-1
Tires Technical Specifications		
VF380/90R46	4	5-2
480/80R46	4	5-3
520/85R38	4	15-3
520/85R42	4	5-4
520/85R46	4	5-4
620/70R42	4	5-5
/10//0R38	4	15-5
Working with the Machine	-	- 4
	t	JU-1

 Fuses
Identification

0	Ecomatic Filling System	55-23
0	Self Rinsing Pressure Filter	55-24
1	Wiring Harness for Second Tractor	55-24
2	T-Splitter Cables	55-24
4	High Pressure Cleaner	55-27
<u> </u>	0	

Maintenance

Accessories

Wheels	60-1
Lubrication - Air Lines / Nozzle Shut-Off,	
Pump Oil & PTO Shaft	60-1
Hydraulic Hoses for Boom Height Adjustment	
System	60-2
Indicating Fuse Ratings	60-2
Fuses	60-2
Identification of Valve Functions on Sprayer	60-3
Machine Lubricating Nipple Summary	60-5
Axles	60-7
Double Folding Spray Boom Lubricating	
Nipple Summary	60-11
Triple Folding Spray Boom Lubricating Nipple	
Summary	60-15
Cleaning	60-20
Diaphragms	60-21
Malfunctions	60-21
Testing of the Machine	60-21
Scrap	60-22

Minimize Spray Drift Recommendations 50-2 Adjusting the Nozzle Output 50-2

Chemical Transport Compartment 55-2

Edge Nozzles 55-3 Boom Gauging Device 55-4 Boom Suspension Kit for Slopes 55-5

Field Spraying Nozzle Output with Liquid

Hose Reel with Washing Brush and Spray

Boom Height Assist - Return to Height

BoomTrac[™] Auto Boom Level & Height

John Deere TerrainCommand - Automatic Boom Height & Variable Geometry Control

Automatic Boom Height, Roll, & Variable

Р	age
Metric Bolt and Screw Torque Values 60-	-22
StoragePreparation for Storage64Protection Against Frost64Spraying During Frost Periods64First Activation Following Long Inactivity (Storage, Repair, Etc.)64	5-1 5-1 5-1 5-1
Specifications 7 Specifications 7 Products to be Processed 7 Materials Applied 7 Machine Design Life 7 Dimensions and Weights 7 Sound Level 7 Electrical Connection Requirements 7 Physical Operating Conditions 7 Directives and Standards Applied 7 Combination Matrix 7	0-1 0-1 0-2 0-4 0-4 0-5 0-5
M944 & M944i - Part 1	0-6 0-7 0-8 0-9 -10 -11 -12 -13 -13

Identification Plates

Basic Machine Identification Plate	75-1
Pump Identification Plate	75-1
Keep Proof of Ownership	75-1
Keep Machines Secure	75-1

J	ohn	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
Technical Information	IBC-1

Identification Views

Identification Views



WZ00232,00004C2-19-29NOV13

Standard Machine and Options

The following separate (spare) parts are supplied with each machine. Please confirm that they are present.

Standard Machine

- M944, M944i, M952, M952i, M962 and M962i trailed crop sprayer operator's manual
- Multi-Function Control lever (MFC)
- □ Multi-Function Control lever (MFC) mounting support
- Wiring harness and connectors (electric power supply)
- □ P.T.O. shaft with unilateral wide-angle coupling and user documentation
- Drawbar ball coupling type K-80
- Drawbar fixed ring tow eye 50 mm

Options

- Display with mounting support and user documentation (Implement Display 1100, GreenStar 1800 and GreenStar 2630)
- Hydraulic Pump Drive for the piston diaphragm pumps
- I 3" filling hose with strainer and float, without couplings
- □ Hose socket 3" with Kamlock (quick release coupling), Firebrigade or C-coupling for filling hose
- □ Hose socket 1.5" with Kamlock (quick release coupling), Firebrigade or C-coupling for external pump filling connection
- □ Hose socket 1.5" with Kamlock (quick release coupling), Firebrigade or C-coupling for transfer valve
- □ Compression springs for boom suspension (for spraying on steep sloping fields)

Parts Catalog

To prevent damage in periods of extreme cold, the following parts may have been temporarily removed:

- □ Suction filter cup(s) including O-ring(s) and filter element(s)
- Pressure filter cup including filter element
- End caps with U-plugs for various spray line sections
- □ Hose sockets with U-plugs for various spray line sections
- Pressure gauge(s)

In addition, the machine may be filled with an anti-freeze solution providing protection to -20°C of cold. On delivery of the machine, all small and removed parts are temporarily stored in the basket strainer, clothing locker or in the chemical inductor.

The optional PTO shaft with user documentation and filling hose are stored on the platform.

WZ00232,00004C3-19-28MAY15

Rinsing head in filling opening

- Spray gun for chemical inductor
- Transport compartment for chemicals
- Brush with hose reel for cleaning the sprayer
- □ Boom height assist (return-to-height feature)
- □ Edge nozzle holder (electric and manual control) with multiple nozzle holders
- Pump oil level sensors for sprayers with two pumps
- □ Wheel fenders (400 mm) for row crop tires
- Wheel fenders (600 mm) for flotation tires
- Wheel fenders (700 mm) for flotation tires
- $\hfill\square$ Boom gauging device for double or triple folding booms
- External pump filling connection 1.5" without couplings
- Transfer valve to pump liquid back to store, without couplings
- □ Self cleaning pressure filter
- Compression springs for boom suspension
- Load Sensing kit for hydraulics

Accessories

The following accessories or special versions are available and described in this documentation. Verify your version of the machine (for instance on the order confirmation) and tick the relevant items in this list. \hfilling kit for BASF ecomatic system

- □ On-board high pressure cleaner (100 bar) with hose reel
- □ BoomTrac[™] Auto boom height + level control
- □ Field lighting kit, halogen or LED
- Beacon light

□ GreenStar™ & ISOBUS ready tractor kit (without Tractor Jobcomputer - TECU) for fixed installation on a 2nd tractor

□ GreenStar[™] & ISOBUS ready tractor kit (without Tractor Jobcomputer - TECU) with preassembled box for 2nd tractor

□ Tractor power wiring harness and brackets (for display and Multi-Function lever) for use on a 2nd tractor (for sprayers with GreenStar™/ISOBUS ready tractor kit with preassembled box)

□ T-splitter and brackets (for Multi-Function lever and display) for use with 2nd John Deere 6010, 7010, 8010 series tractor with GreenStar™ ready wiring harness

□ T-splitter and brackets (for Multi-Function lever and display) for use with 2nd John Deere 6020 series tractor with GreenStar™/ISOBUS ready wiring harness

□ T-splitter and brackets (for Multi-Function lever and display) for use with 2nd John Deere 7020, 7030, 8020, 8030 series tractor with GreenStar™/ ISOBUS ready wiring harness

□ T-splitter and brackets (for Multi-Function lever and display) for use with 2nd John Deere 6030, 7030 series tractor with GreenStar™/ISOBUS ready wiring harness

Calibration container 2000 ml

Parts Catalog

BoomTrac is a trademark of Deere & Company

WZ00232,00004C4-19-29NOV13

Auxiliary Equipment/Information

Means of personal protection for the purpose of crop protection are not provided along with the machine.

Instructions on the use of personal protection equipment and the application of crop protection chemicals have only been included for information purposes. The applicable regulations or the recommendations issued by the supplier of the equipment or products in question may differ and will always take precedence over our instructions!

AG,WZ00009,158-19-17MAY06

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-19-29SEP98

Understand Signal Words



AWARNING

ACAUTION

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-19-16JUN09

Prepare for Emergencies



Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

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

DX,FIRE2-19-03MAR93

TS291-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

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 multifunction 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

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



- Safety provisions must not be removed or rendered inoperative.
- The permissible load on axle and tires must not be exceeded. Pay attention to this on fitting tires, loading the machine and transport speed.
- When travelling on public roads, the machine must be fitted with lighting according to the applicable statutory regulations.
- When driving on the public roads with a trailed sprayer, most countries require a statutory working brake to be fitted when drawing a certain total weight (including load). When a full tank must be transported by road, a hydraulic or pneumatic brake must be fitted. Check the statutory regulations in your country.
- You must not 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.
- Do not turn on the machine until you are sure nobody is in the danger zones.
- 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 in order that the machine cannot start unexpectedly or unintentionally.
- Welding work may not be carried out on the machine if it has been used to spray ammonium nitrate and/or contains residues of this chemical.

AG,WZ00009,163-19-07AUG00

Transport in the Field and on the Road



Turn Vehicle Safely When Towing



 Do not touch the machine while it is in operation or running.



Drive Vehicle Safely on Hillsides

Always engage the Transport Lock function for traveling on 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 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.

WZ00232,00005A7-19-16APR15

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 of your machine.

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.

WZ00232,00001E3-19-03AUG09

Safety

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

Use Safety Lights and Devices

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



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

Protect Against High Pressure Spray



TS1343—UN—18MAR92

Spray from high pressure nozzles can penetrate the skin and cause serious injury. Keep spray from contacting hands or body.

If an accident occurs, see a doctor immediately. Any high pressure spray 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 from Deere & Company Medical Department in Moline, Illinois, U.S.A.

DX,SPRAY-19-16APR92

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

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

Tractor Cab

Always close the tractor windows and doors during spraying. It is important that the cab is as airtight as possible so, generating a slight overpressure during ventilation, and preventing polluted air from entering the cab.

Install one or more dust filters in the tractor 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 tractor 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. Even better is to drive off the field in the case of major malfunctions, in order to solve the problems in a clean environment.

AG,WZ00009,170-19-07AUG00





TS220-UN-15APR13



TS272—UN—23AUG88

A CAUTION: This enclosed cab does not protect against inhaling vapor, aerosol or dust.

- 1. When operating in an environment where pesticides are present, wear a long-sleeved shirt, long-legged pants, shoes, and socks.
- 2. If pesticide use instructions require respiratory protection, wear an appropriate respirator inside the cab.
- 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
- 4. Before re-entering the cab, remove 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, such as a plastic bag.
- 5. Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.

DX,CABS1-19-25MAR09

Handle Agricultural Chemicals Safely



TS220-UN-15APR13

A34471

A34471—UN—110CT88

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

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

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. In the absence of manufacturer's instructions, follow these general guidelines:
 - Chemicals labeled **'Danger'**: Most toxic. Generally require use of goggles, respirator, gloves, and skin protection.
 - Chemicals labeled 'Warning': Less toxic. Generally require use of goggles, gloves, and skin protections.
 - Chemicals labeled 'Caution': Least toxic. Generally require use of gloves and skin protection.
- Avoid inhaling vapor, aerosol or dust.
- Always have soap, water, and towel available when working with chemicals. If chemical contacts skin, hands, or face, wash immediately with soap and water. If chemical gets into eyes, flush immediately with water.
- Wash hands and face after using chemicals and before eating, drinking, smoking, or urination.
- Do not smoke or eat while applying chemicals.

- After handling chemicals, always bathe or shower and change clothes. Wash clothing before wearing again.
- Seek medical attention immediately if illness occurs during or shortly after use of chemicals.
- Keep chemicals in original containers. Do not transfer chemicals to unmarked containers or to containers used for food or drink.
- Store chemicals in a secure, locked area away from human or livestock food. Keep children away.
- Always dispose of containers properly. Triple rinse empty containers and puncture or crush containers and dispose of properly.

DX,WW,CHEM01-19-24AUG10

Service and Operate Chemical Sprayers Safely



TS272—UN—23AUG88



TS220-UN-15APR13

Chemicals used in agricultural sprayers can be harmful to your health or the environment if not used carefully.

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

Reduce risk of exposure and injury:

- Wear appropriate personal protective equipment as recommended by the manufacturer. (See 'Handle agricultural chemicals safely' found in the Safety Section.)
- Fill, flush, calibrate, and decontaminate sprayer in an area where runoff will not reach ponds, lakes or

streams, livestock areas, or gardens, or near other people.

- Keep children away from the chemicals, chemical solutions, and rinsates.
- If spray or chemical concentrate contacts skin, hands, or face, wash immediately with soap and water.

If spray or chemical concentrate gets into eyes, flush immediately with water.

- If nozzle clogs or system malfunctions, stop engine and relieve spray pressure from system.
- Do not place nozzle tips or other components to the mouth to clear obstructions. Keep spare tips on hand for replacement.
- Minimize risk of spray drift.
 - Use large nozzle tips operated at lower pressures
 - Do not operate solution delivery system at pressures exceeding 345kPa (3.5 bar) (50 psi).
 - Do not spray when winds exceed 16 km/h (10 mph).
 - Do not spray when wind is blowing towards a nearby sensitive crop, garden, or populated area.
- Properly dispose of unused chemicals, flushing solution, and empty chemical containers.
- Decontaminate equipment used in mixing, transferring, and applying chemicals after use.

DX,WW,CHEM02-19-05APR04

Chemical Safety



N35988-UN-04OCT88



N35989—UN—04OCT88

- Crop protection chemicals must be applied with the greatest possible caution, in order to minimize side effects on the environment and your health:
- Take care when using crop protection chemicals. Use crop protection chemicals in such a manner that the risk of contact is kept to a minimum (work hygienically). This applies to all chemicals, however toxic they may be.
- Choose chemicals which are the least harmful to your health and which are effectively and quickly decomposed.
- Always read the packaging label carefully before use. Observe the Statutory Regulations and the Directions for Special Dangers, Safety Recommendations and the User Manual.
- Use breathing protection apparatus suitable for this type of application according information on packaging label, such as an effective filter mask or a breathing hood or helmet.
- When preparing the spraying liquid, use a suitable form of breathing protection, a facial screen, gloves, boots and protective clothing suitable for this type of application according information on packaging label. Make sure your head is also protected and do not use clothing also worn for other purposes.
- Maintain your means of personal protection regularly. Soiled masks may cause skin irritation. Change filters regularly! Refer to type of application and relevant information on packaging label.
- Choose a safe type of product. The preference must always be for types of products which generate minimum dust and chemicals which are least absorbed by the skin.
- Choose a safe type of packaging.
- Provide your employees with effective information on where and when chemicals are to be applied, to prevent them from working in a crop which is still wet from spraying. Do not walk through or work in a crop recently treated.
- Prepare the spraying liquid outdoors at working height, in order to minimize the risk of spillage.

Ensure that wind blows sideways when preparing the chemicals.

- Keep the machine clean. Use cleaners according to the information on chemical packaging label and avoid contact with the crop protection chemicals.
- When weighing, measuring and preparing crop protection chemicals, use materials kept exclusively for this purpose, such as scales, measuring jugs, funnels, buckets, etc. Clean these materials after each use.
- Do not prepare more spraying liquid than absolutely essential!
- Limit the daily working hours spent working with crop protection chemicals to 8 hours. Avoid strong transpiration and heavy physical exertion.
- Do not drink alcoholic drinks shortly before or after spraying.
- Never drink, eat or smoke while working with crop protection chemicals.
- Never clear blocked nozzles by blowing with your mouth.
- Always pay attention to the safety period when spraying and harvesting.

- If crop protection chemicals come into contact with the skin, rinse immediately with water.
- Always wash your hands and face before eating, drinking or smoking.
- Keep animals and children away from spraying equipment not yet cleaned. Clean this equipment or store it in an area sealed off to unauthorized persons.
- Wash well with water and soap after working with crop protection chemicals.
- Maintenance and repairs may only take place following complete cleaning of the machine.
- Should you or your colleague have problems, visit a doctor immediately and try to discover the identity of the active ingredient. The first measures you can take in the case of the following chemical "injuries" are:
- skin, eyes : rinse with plenty of water
- swallowing : drink water, not milk
- inhalation : fresh air

WZ00085,000031C-19-12APR05



WZ290501232

A—Very toxic or toxic B—Harmful or irritant C—Corrosive D—Oxidizing

Danger symbols and warnings may be given on the label. Whenever possible, avoid using crop protection chemicals bearing the skull symbol or the symbol for caustic acid. Even if there is no danger symbol on the WZ290501232-UN-01SEP06

E—Flammable F—Explosive G—Dangerous for the environment

label, the product is not necessarily "safe". Caution should therefore also be exercised with crop protection chemicals without danger symbols. They may well be harmful to your health in the long term. The following danger symbols may be given on the packaging.

Danger Symbols

- Skull with the caption "Toxic" (code T) or "Very toxic" (code T+) for toxic and very toxic crop protection chemicals, respectively.
- Warning cross with the caption "Harmful" (code Xn) or "Irritant" (code Xi) for chemicals which are harmful to health or which will irritate the skin, respectively.
- An illustration of two test tubes dripping onto a hand and a surface, for caustic chemicals with the caption "Corrosive".
- Flame symbol with the caption "Flammable" (code F) or "Extremely flammable" (code F+) for volatile and flammable chemicals or those which contain such substances.
- Flame symbol with an O with the caption "Oxidizing" (code O) for oxidizing substances.
- Explosive symbol with the caption "Explosive" (code E) for these chemical substances that can explode if ignited.
- The dead tree and fish symbol are for chemical substances which may cause immediate or delayed harmful effects to the environment.

AG,OUWZMOT,1-19-01SEP06

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.

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

WZ00232,0000066-19-28AUG07

Clean Vehicle of Hazardous Pesticides

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 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.

DX,CABS2-19-24JUL01

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

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-180CT88

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

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

TS218–UN–23AUG88 Understand service procedure before doing work. Keep area clean and dry. 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

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

Service Tires Safely



Follow Tire Recommendations



H111235-UN-13MAY14

Keep your machine in proper working order.

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

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

DX,TIRE,INFO-19-19MAY14

Decommissioning — Proper Recycling and Disposal of Fluids and Components

TS211-UN-15APR13 Explosive separation of a tire and rim parts can cause serious injury or death.

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

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

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

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

DX,RIM-19-24AUG90



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

This machinery may be subject to national requirements for regular inspection by designated bodies, as provided for in Directive 2009/128/EC of the European Parliament and of the Council of 21 October 2009.

CS12167,00006A4-19-12SEP14

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 by a pictorial in a warning triangle. An adjacent pictorial provides information how to avoid personal injury. These safety signs, their placement on the machine and a brief explanatory text are shown below.

FX,WBZ-19-19NOV91

User Documentation



User Documentation Decals and Location

Read Operator's Manual before operating machine. This user documentation contains all important instructions for safe operation.

WZ00232,00004C5-19-29NOV13

Chemical Documentation in Use



Chemical Documentation in Use

The current chemicals in use information should be stored in the document container.

WZ00232,00004D7-19-29NOV13

Turn Off the Engine



Turn off the tractor engine and remove the key from the ignition before undertaking repairs or maintenance work.

WZ00232,00004C6-19-04DEC13

Working with High Pressure



WZ290501342-UN-29NOV13

Be careful with high outlet pressure. Consult the technical instructions first.

WZ00232,00004C7-19-29NOV13

Transport Position



WZ290501344—UN—29NOV13

Keep sufficient distance away from electrical power lines and other obstacles. Check the overall height of the machine when the spray boom transport position has been adjusted.

WZ00232,00004C8-19-29NOV13

Clearance between Boom and Cab



Ensure boom is fully folded and secure in the transport position.

WZ00232,00004C9-19-29NOV13

Spray Boom Locking



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

AG,WZ00009,175-19-30AUG06

Danger of Poisoning



WZ290501346-UN-29NOV13 You must not enter the tank for cleaning or repair.

WZ00232,00004CA-19-29NOV13

Passengers



Do not ride on platform or ladder.

WZ00232,00002FA-19-26SEP11

Danger Point of Spray Booms



WZ290501348-UN-04DEC13



WZ290501349-UN-04DEC13



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

WZ00232,00004CC-19-29NOV13

Clean Water



The hand washing tank must always be filled with clean water.

WZ00232,00004CD-19-29NOV13

Caution with Moving Parts (PTO Option)



WZ290501326-UN-270CT11

Lack of caution with moving parts can result in severe or even fatal accidents. Wear well fitting clothing and stay far enough away from moving parts.

WZ00232,00005CC-19-21MAY15

Maximum Solution Pump Speed



The Solution Pump Speed must not exceed 540 rpm.

WZ00232,00005CD-19-07OCT15

Spray Boom Hinge Points



WZ290501312-UN-23SEP11

Stay out of the range of moving parts.

WZ00232,00002EE-19-23SEP11

Means of Personal Protection



WZ290501351-UN-29NOV13



WZ290501352-UN-29NOV13 Always wear protective clothing when working with crop protection chemicals.

WZ00232,00004CE-19-28MAY15

Dangerous Substances



WZ290501354 WZ290501354-UN-29NOV13

Take precautions when using crop protection chemicals.

WZ00232,00004CF-19-28MAY15

Manual Drain



WZ290501341-UN-04DEC13 Caution when using the manual drain. Contents of the solution tank will empty out.

WZ00232,00004D0-19-29NOV13



10-4

Spray Boom Movement Range



WZ290501355-UN-29NOV13





WZ290501356-UN-29NOV13



Keep well away from the movement range of the spray boom.

WZ00232,00004D1-19-29NOV13

Risk of Explosion

WZ290501336



Brake Accumulator



Boom Height Accumulator





Accumulator for Triple-Folding Boom



Accumulator for Anti-Yaw Suspension System

The accumulator is under gas and oil pressure. Always consult the technical instructions prior to maintenance and repairs.

WZ00232,00004D2-19-29NOV13

Chocks - Pneumatic Brakes Only



WZ290501358

WZ290501358—UN—29NOV13



WZ290501359—UN—29NOV13 Chock the wheels to stop the machine from rolling, when coupling, uncoupling or parking.

WZ00232,00004D3-19-28MAY15

Chemical Inductor





Keep out of range while parts are moving.

WZ00232,00004D4-19-01JUN15

Platform Ladder



Keep out of range while parts are moving.

WZ00232,00004D5-19-29NOV13

Boom Support



WZ290501362-UN-29NOV13



Keep out of the hazard area while parts are moving.

WZ00232,00004D6-19-29NOV13

Maximum Working Pressure



WZ290201360-UN-19JAN06



A—Maximum Working Pressure of Sprayer

The maximum permissible working pressure is 20 bar. This decal is located above and to the left of the solution pumps.

WZ00232,0000406-19-11NOV12

Maximum Hydraulic Pressure





WZ290201456—UN—11MAY15 Russian - Maximum Hydraulic Pressure



WZ290201514

WZ290201514—UN—17AUG18 Universal - Maximum Hydraulic Pressure

A—Maximum Hydraulic Pressure

The maximum permissible hydraulic system pressure is 210 bar. This decal is located on the left side of the hydraulic hose stowage.

WZ00232,00003C8-19-16AUG18

Preparing the Tractor

General



LX 006613

LX006613-UN-15AUG94

A—Dimension A B—Dimension B

The hydraulic hose couplings comply with the ISO standard.

- Dimension (A) is between 23.66 and 23.74 mm.
- Dimension (B) is at least 24 mm.

Recommendations for tire pressure, hydraulics and other information on the operation of the machines are given in the tractor manual.

Check the tire pressure; if necessary, fit front weights (see tractor manual).

Check the hydraulic oil level on the tractor and top up if necessary.

The hydraulic components of the sprayer are filled with a hydraulic oil according to the following specification: HY-GARD (10W-30). John Deere equivalents are JDM J20C, API-GL4.

If the machine is equipped with an on-board hydraulic system, a different oil specification is used in the system; refer to section Maintenance for more detailed information.

OUCC020,0002480-19-21APR10

Operation of Hydraulic Functions



WZ290101481-UN-20AUG02



WZ290102221—UN—23NOV11

A—Protective cap B—Storage position for hydraulic hoses

IMPORTANT: The maximum permissible hydraulic system pressure is 210 bar.

The hydraulic functions of the sprayer are operated by (depending on the type of equipment):

- the tractor selective control valves directly.
- the tractor selective control valves by means of a hydraulic selector control via the Multi-Function Control (MFC)
- electro-hydraulically with the Multi-Function Control (MFC)
- NOTE: After disconnecting the hoses, always install protective caps (A) on the couplings to prevent contamination which can damage the hydraulic system.

Hydraulic Operation

In case of machines hydraulically operated via the tractor selective control valves, the following tractor selective control valves are required:

- 1 single-acting selective control valve for hydraulic boom height adjustment
- 1 double-acting selective control valve for spray boom folding/unfolding
- 1 double-acting selective control valve for boom tilt

Hydraulic Operation Using The Multi-Function Control (MFC) as a Hydraulic Selector

Machines that are hydraulically operated via the tractor selective control valves in combination with the **MFC** as a hydraulic selector, the following tractor selective control valves are required:

- 1 single-acting selective control valve for hydraulic boom height adjustment
- 1 double-acting selective control valve for all spray boom functions

With the MFC, the operator can select the hydraulic

function to be controlled with one double-acting selective control valve of the tractor:

- boom folding
- boom tilt
- boom folding tips

Electrically controlled check valves (normally closed, NC) direct the oil flow from the double-acting selective control valve of the tractor to the selected cylinder(s).

After disconnecting the hoses, always install protective caps on the couplings to prevent contamination.

Electro-Hydraulic Operation



A—Electro-hydraulic control valve block (cover)

The electro-hydraulic operation system enables operation of all hydraulic sprayer functions via a Multi-Function Control lever **MFC** in the tractor cab. For this purpose an electro-hydraulic control valve block (A) with one single-acting control valve and one pressure-free return is mounted on the sprayer. In addition, a so-called OC/CC valve is fitted to the electro-hydraulic control valve block.

The electro-hydraulic control valve(s) are suitable for closed center tractor hydraulics (continuous pressure system), open center tractor hydraulics (continuous volume system) and tractors with load sensing (optional load sensing kit on sprayer required). The electrohydraulic control valve(s) are suitable for tractors with a pump capacity of up to 50 l/min. The control valve block is fitted with a combined flow control valve and safety valve (set to 180 bar). All electro-hydraulic control valves are fitted with controlled non-return valves to prevent drifting of the hydraulic cylinders. A reducing valve ensures very gradual folding/unfolding of the spray boom. If an obstacle is struck during folding/unfolding the possibility of damage to the spray boom is greatly reduced due to the lower operating pressure (approx.70 bar).

Tractor Hydraulic System Options



A—Storage point B—Pressure Connection P with red protective cap C—Pressure-free return T with blue protective cap

The correct hydraulic system used on the tractor has to be set on the display for the sprayer control system (in **Machine Settings** in the tab **General Settings**:

- 1. Press softkey (H) for **Machine Settings** from the menu field on the display terminal.
- 2. Select the General Settings tab.
- 3.In the lower half of the display field, select **Hydraulic System**, choose the correct system from the dropdown list, and enter.
 - **OPEN CENTER** for tractors with an open center or continuous volume system.
 - **CLOSED CENTER** for tractors with a closed center or continuous pressure system.
 - **LOAD SENSING** for tractors equipped with load sensing system.

Also see Machine Settings in section Sprayer Control System.

The control valve block is fitted with a delivery and return line with quick release couplings. After disconnecting the hoses, always fit protective caps on the couplings to prevent contamination and hang the hoses in the respective slots on the front side of the sprayer. The tractor must be equipped with a delivery connection and a **pressureless** return. The delivery connection is provided with a red protective cap; the return line is provided with a blue protective cap.
Adjustment of Hydraulic Flow Divider



WZ290102223-UN-27SEP11

A—Flow Divider **B**—Dump Valve

When using open center hydraulics, the flow divider (A) should be completely open (OUT). Turn the dump valve (B) counter-clockwise to open the valve.

When using closed center hydraulics, the flow divider (A) should be completely closed (IN). Turn the dump valve (B) clockwise to close the valve.

The control valve block is fitted with a delivery and return line with quick release couplings. After disconnecting the hoses, always install protective caps on the couplings to prevent contamination. The tractor must be equipped with a delivery connection and a pressureless return. The delivery connection is provided with a red protective cap; the return line is provided with a blue protective cap. The flow divider (A) is located near the support leg.

Load Sensing Hydraulics



WZ290101658-UN--30NOV04

A—Pressure connection "P" with red protective cap B-Manually operated valve (only if load sensing kit is available) C-Pressure-free return "T " with blue protective cap D-Load sensing connection "LS" with yellow protective cap



WZ290102384—UN—21AUG13



A—Return connection **B**—Pressure connection C-Load sense connection D—Regulating valve E-LS valve

When the tractor is equipped with power beyond couplers connect the load sensing system from the spraver to the tractor. See also Tractor Operator's Manual. The hydraulic oil pressure and volume will be adjusted to the machines requirements. The pressure connection "P" (red protective cap) needs to be connected to the tractor's power beyond connection. The return line "T" (blue protective cap) must be connected to the tractor's pressure-free return. The load sensing male connection "LS" (yellow protective cap) needs to be connected to the tractor's load sensing connection.

- **IMPORTANT:** For transport, the load sensing line should always be closed using the manually operated valve. If the handle is in vertical position, the valve is open.
- NOTE: Due to differences in the outside temperatures the viscosity of the oil can be different when starting work. With a low oil viscosity it can occur that the hydraulic functions cannot be operated immediately when starting the tractor. This problem is solved when the viscosity (temperature) of the oil is increasing.

WZ00232,00004DA-19-02DEC13

Hydraulic Pump Drive - Requirements



Hydraulic Pump Drive



Hydraulic Lines Identification

A—Hydraulic Motor

B—Hydraulic Block with Check Valve and Over Speed Protection C—Return Line

D—Pressure Line

E—Piston Diaphragm Pump with Speed Sensor

F—Pressure Line Stowed - Red Cap labeled with a P Decal G—Return Line - Blue Cap labeled with a T Decal

M700 & M900 Hydraulic Pump Drive Requirements for Tractors

- The hydraulic pump drive option is designed to work with Open Center tractors that are able to maintain a set oil flow. Open Center tractors which are unable to maintain a set oil flow for the SCV as they also supply oil for other hydraulic functions are not suitable for the hydraulic pump drive operation.
- The hydraulic pump drive option is designed to work with Load Sensing tractors, provided the tractor is equipped with JD-450 series SCV or equivalent in performance.
- The sprayer hydraulic system requires to be set to Closed Circuit operation. For tractors that have an Open Center system which maintains a set oil flow for the SCV use the Open Center setting.
- Reduce the SCV oil flow rate to a value near 45 l/min for the hydraulic pump drive.

- IMPORTANT: Do not move the SCV control lever to the neutral position, as the hydraulic drive motor and hoses incur damage. Use the float position.
- IMPORTANT: Never regulate the SCV flow rate with an external valve. Always use load control valves.
- IMPORTANT: Refer to the tractor Operator's Manual for the hydraulic connection for a hydraulic motor or hydrostatic drive for correct operation.

The SCV is operated in **lower/retract** to run the pump. To stop the pump place the SCV in the **Float** position. Switching to neutral closes the check valve in the return connection which leads to a pressure buildup. Any pressure build-up in the return line leads to the deterioration of the hydraulic pump drive seals.

Power Beyond Connection Option

- IMPORTANT: Implements with a load sensing hydraulic system, it is necessary to use the relevant couplers on the Power Beyond valve.
- IMPORTANT: Refer to the tractor Operator's Manual for the hydraulic connection for a hydraulic motor or hydrostatic drive for correct operation.
- IMPORTANT: Always start the pump at the lowest possible speed, idle the tractor engine.

WZ00232,000058E-19-09AUG16

Hydraulic Pump Drive - Over Speed Protection



Hydraulic Pump Drive - Over Speed Protection

A—Over Speed Protection B—Cap C—Lock Nut

SCV Connection Option

IMPORTANT: Ensure that oil is at operating temperature before commencing adjustment.

IMPORTANT: When using the Hydraulic Pump Drive or adjusting the over speed protection ensure the Solution Pump shaft speed does not exceed 540 rpm. The Solution Pump is at risk of damage above 540 rpm.

The tractor SCV is capable of delivering more hydraulic oil then is required for use by the hydraulic pump drive hence the over speed protection (A) for the solution pump. Delivering more oil with the SCV then that set by the **Over Speed Protection** will not alter the solution pumps rotation but will increase the oil temperature.

The factory adjusts the over speed protection to 540 rpm. This setting will cover a majority of tractor configurations, however it is recommended to check the setting and adjust as required. Use the display either on the **Sprayer - Main** page or the **Diagnostics - Sensor Status** to view the **Solution Pump Speed**.

For optimum use set the SCV to a higher setting and then reduce until the solution pump shaft speed starts to lower. The SCV is now delivering enough oil for the hydraulic pump drive to use and not additionally increasing the oil temperature.

To adjust the Over Speed Protection (A):

- 1.Remove the cap (B).
- 2.Loosen the lock nut (C) and with a hexagonal wrench adjust the over speed protect.
- 3.If the **Solution Pump Speed** is lower than 540 rpm, increase the adjustment until 540 rpm appears on the display. Decrease when above 540 rpm.
- 4. Tighten the lock nut (C) and replace the cap (B) when adjustment is complete.

IMPORTANT: The SCV must be adjusted to a level lower than that of the Over Speed Protection.

WZ00232,0000559-19-31MAR15

Hydraulic Oil Filter



WZ290102225-UN-27SEP11

The sprayer is equipped with a hydraulic oil filter which is connected to the flow divider of the hydraulic system. Proper functionality of all sprayer hydraulics is ensured under any conditions with the filter, it will prevent contamination by dirt.

WZ00232,0000304-19-14NOV11

Vertical Load

IMPORTANT: The maximum vertical load for the M900 is 3000 kg.

The axle load of the tractor will change due to the vertical load of the sprayer drawbar on the tractor. However, the permissible load on axle and tires must not be exceeded (see section **Wheels and Tires**). This must be checked when mounting the tractor tires. If the front axle is unstable, front weights must be fitted to retain control of the tractor. When applying liquid fertilizers, bear in mind that their density is higher!

WZ00232,00004D9-19-29NOV13

Electrical Operation — Diagram for the Implement Display 1100





WZ290102367

Implement Display 1100 Connection Diagram for

WZ290102367-UN-05JUL13

A—Implement display 1100 B—Multi-Function Control (MFC) C—3-Pole plug D—Meca controller E—Electronic Power Module (EPM)

WZ00232,000040F-19-05JUL13

Install Implement Display in the Tractor Cab



Back of Implement Display 1100



1100 Display Mounting Bracket

A—Display mounting holes B—Display connector

The back of the display contains:

- Display Mounting Holes—attach to bracket on machine (M5 screw).
- Display Connector—connects vehicle wiring harness plugs with display for system power and communication.

Use the supplied bracket to for the display to the cab. Make sure it is easily accessible and visible.

WZ00232,0000412-19-24SEP13

WZ290101580-UN-04NOV02

Power Supply — 3-Pole Plug

IMPORTANT: Connect the plug to a 12 V system only.



WZ290101580

Fitting Electrical Socket to Tractor

A—3-pole plug

Power is supplied to the machine through the 3-pole plug (A) and the supply cable, which feeds current to all components via the receiver box. The 3-pole plug must be fitted to a 3-pole power outlet socket (25A) on the tractor.

If the tractor has a 3-Terminal Power Outlet Socket (25A) switched by the ignition key, the sprayer can be connected directly to the tractor without having to install a power harness.

If the tractor does not have a proper 3-Pole Terminal Power Outlet Socket (25A) switched by the ignition key, a 3-Pole Terminal Power Outlet Socket needs to be installed on the tractor. Ensure that the switched power from the 3-Pole Terminal Power Outlet is interrupted during the starting process of the tractor.

Please refer to **Fitting Electrical Socket to Tractor** in this section.

WZ00085,0000141-19-21AUG13



WZ290201458-UN-23JUL13

- A—+12 V when engine running (Not on engine start, see IMPORTANT note)
- IMPORTANT: The electric power supply must be connected according the wiring diagram and explanation as written in this section. Not following these instructions can cause severe damage to the electrical system of the machine.
- Connect the red +12V-wire (15/30) via 30 Amp. fuse to the plus (+) terminal on the battery.
- Connect the red +12V-wire (82) to the +12V power supply which is available when the machine is running. When the tractor is started, the 12V power supply must be switched off in order to turn off the system. There is a relay (NO) integrated on the printed circuit board.
- Connect the black ground wire (31) to the negative terminal (-) of the battery.

The relay ensures voltage feed (via cable 15/30). Once the vehicle is started, the relay temporarily switches off the system (via cable 82) in order to prevent voltage differences. This must be verified with a voltage tester, before mounting the plug into the socket.

Always keep the battery well-charged (12 V minimum, 14.4 V maximum) and ensure proper functioning of the alternator.

WZ00232,0000413-19-22JUL13

Electrical Operation — Diagram for ISOBUS Displays

Diagram for GreenStar[™] Displays



ISOBUS with GreenStar and MFC Electrical Operation

WZ290102368-UN-05NOV14

A—GreenStar™ ISOBUS display B—Multi-Function Control (MFC) C—StarFire™ position receiver D—Implement CAN Bus connector _ ...

E—Meca controller F—Electronic power module (EPM) - base actuators G—BoomTrac™ control

WZ00232,0000410-19-30SEP13

StarFire is a trademark of Deere & Company

GreenStar is a trademark of Deere & Company BoomTrac is a trademark of Deere & Company

Install GreenStar Display in the Tractor Cab



WZ290102345-UN-27AUG13

The GreenStarTM display must be fitted into the cab by means of the supplied fixing bracket, which must be positioned in an easily accessible and visible place.

Refer to GreenStar[™] display installation instruction for more detailed information.

WZ00232,0000411-19-28APR15

Install Multi-Function Control Lever (MFC) in Tractor Cab



C—Bracket—WZW10535

A—Multi-Function Control Lever (MFC) B—Bracket—WZW0011909

The Multi-Function Control lever MFC (A) must be fitted so that it is easily accessible. Depending on your tractor cab configuration, the Multi-Function Control lever (A) can be installed in different places. Refer to the installation instructions provided with the Multi-Function Control (A) kit to install the fixing bracket— WZW0011090 (B) or bracket—WZW10535 (C) as shown in the illustration.



6R Series Tractor CommandARM



WZ290102534—UN—12DEC16 7R Series Tractor CommandARM

A—Multi-Function Control Lever (MFC) B—Bracket—WZW0011909

The Multi-Function Control lever **MFC** (A) must be fitted so that it is easily accessible. Depending on your tractor cab configuration, the Multi-Function Control lever (A) can be installed in different places. Refer to the installation instructions provided with the Multi-Function Control (A) kit to install the fixing bracket— WZW0011909 (B) as shown in the illustration.

WZ00232,0000510-19-16DEC16

Supporting IOSBUS Aux-N Input Devices

The John Deere trailed sprayers support the use of IOSBUS input devices. The AEF ISOBUS Database on the internet contains information on the ISOBUS compatibility of tractors, terminals, and implements. Check the AEF ISOBUS database for the compatibility of the device to be used.

WZ00232,0000777-19-14AUG18

Power Supply — 9-Pole Plug

IMPORTANT: Connect the plug to a 12 V system only.



A—9-pole plug

WZ290102010-UN-20SEP06

Power is supplied to the machine through the 9-pole ISO 11783 plug (A) and the supply cable, which feeds current to all components via the receiver box. The 9-pole socket must be fitted to the tractor (if not available).

OUCC020,0002460-19-05JUL13

Fuses



WZ290201485-UN-07JAN15

CommandARM is a trademark of Deere & Company



WZ290102413-UN-22NOV13

The fuse box (A) is on the right side of the machine, under the access panel by the Rinse Water Tank.

Fuses:

Fuse Layout		
Fuse	Rating	Function
F1	5 amp	Power supply (30 A power supply) for sensors having a supply voltage of 12 V
F2	5 amp	Power supply (30 A power supply) for EPM base
F3	5 amp	Power supply (30 A power supply) for EPM for Solution Command System (SCS)
F4	5 amp	Power supply (30 A power supply) for EPM for TwinFluid™ System (only for 9xxiTF)
F5	5 amp	Power supply (30 A power supply) for BoomTrac™ (optional)
F6	5 amp	Electronic power (30 A power supply) for SRC control unit (ELX and EPM for Solution Command System)
F11	5 amp	Valve power for the Solution Pump (ground is controlled by control unit) PowrSpray
F12	5 amp	Power for the Fill Pump (ground is controlled by the control unit) PowrSpray
F13	5 amp	Valve Power for Variable Geometry and Boom Height Adjustment Hydraulics (ground is switched by control unit)
F14	10 amp	Power for work lights at the operator's station
F15	10 amp	Valve Power for Automatic Variable Geometry Control

Fuse Layout		
Fuse	Rating	Function
F16		Not Used
F17	15 amp	Section Valve Power for L1, L2, L3, L4 and L5
F18	15 amp	Section Valve Power for R1, R2, R3, R4 and R5
F19	15 amp	Section Valve Power for C, L6, L7, R6 and R7
F20	15 amp	Power to Master Valve for a Standard Spray System, where the Master Valve is placed in the front area of the machine.
		Power to the Master Valve for a Ring Line or Pressure Circulation System, where the Master Valve is placed at the Center-Frame of the machine.
		Power to the Electric Agitation Valve (option)
		Power to the Electric Main Fill Valve (AutoFill option)

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

WZ00232,00005D7-19-28MAY15

Install Wiring Harness on Tractor - Before Model Year 2019

IMPORTANT: The electric power supply must be connected in accordance with the wiring diagram and as described in this section.

Verify, before connecting the sprayer, Multi-Function Control lever (MFC) and GreenStar[™] display, that the power supply is connected and functions as described.

Failure to follow these instructions can cause severe damage to the electrical system of the machine.

Always keep the battery well-charged (12 V minimum, 14.4 V maximum) and ensure the alternator functions properly.

CAN-Bus Wiring Harness



- 1—Time Relay (not used)
- 2-Main Relay
- 3—Battery
- –Fuse (60A) 4-
- 5—Fuse (30A)
- 6—Ground Wire (brown)
- 7—Power Harness
- 8—Multi-Function Control Lever (MFC)
- 9—Connector (14 pole)
- 10—GreenStar™ terminal 11—Gray/Black Plug (10-pole), GreenStar™ Terminal
- 12—Gray Plug, Mobile Processor
- 13—Socket, Performance Display 1 (not used)
- 14—Plug, Performance Display 2 (not used) 15—Quick Out (for StarFire[™] Receiver or ITC)
- 16—Terminator
- 17-Plug (3-pole Cobo)
- 18—Socket (3-pole Cobo)

After verifying that the tractor power supply is operating correctly, the CAN-Bus wiring harness has to be installed in the tractor cab as shown in the drawing. This wiring harness is pre-assembled as far as possible. After the wiring harness is installed in the tractor cab, the remaining cables have to be connected to the tractor battery and the 9-pole ISO plug together with all separate plugs as follows:

Install the pre-assembled main relays (2) on the • tractor

19—System Harness

- 20—Diagnostic Connector (not used)
- 21—Implement Switch (not used)
- 22-Plug (2-pole)
- 23—Socket (2-pole)
- 24-Plug (4-pole)
- 25—Socket (4-pole)
- 26—T-splitter cable 27—Plug (2-pole)
- 28—Socket (2-pole) 29—Plug (4-pole)
- 30-Socket (4-pole)
- 31—Implement Switch (not used)
- 32—Implement Switch (not used)
- 33—Plug (4-pole, for T-Splitter at GreenStar™-ready tractor)
- 34—Plug (2-pole, for T- Splitter at GreenStar™-ready tractor)
- 35—Socket (9-pole Deutsch)
- Connect the brown ground wires (6) to the negative pole (-) of the battery (3)
- Connect the white +12V-wires with 60A fuse (4) and 30A fuse (5) to the positive pole (+) of the tractor battery (3)
- Mount socket (35) on the back of the tractor and connect the cables as follows in the socket:
 - Brown (Br/ground /60A) to position 1
 - Brown (Br/ground/25A) to position 2
 - White (Wt/+12V/60A) to position 3

- White (Wt/+12V/25A) to position 4
- Connect 2-pole socket (28) from the Power harness (7) to 2-pole plug (27) from the T-splitter cable (26)
- Connect 2-pole plug (34) to socket (35)
- Connect 4-pole plug (33) to socket (35)
- Mount 14-pole socket (9) in the tractor cab near the position where the Multi-Function Control lever (MFC) (8) has to be installed later
- Connect 2-pole socket (23) from the T-splitter (26) to 2-pole plug (22) from the System harness (19)
- Connect 4-pole socket (25) from the T-splitter (26) to 4-pole plug (24) from the System harness (19)
- Black/gray 10-pole plug (11) is used to connect the GreenStar[™] display (10)

Plug (3-pole Cobo)

- Gray 10-pole plug (12) is used to connect the mobile processor (not available with GreenStar[™] displays)
- Terminator (16) indicates the end of this Can-Bus cable
- 2-pole plugs (21, 31 and 32) are not used as is the remaining brown wire and diagnostic connector (20) from the system harness.
- Connect 3-pole (Cobo) plug (17) to the 3-pole socket (18) in the tractor. See also **Power Supply** in this section.
- Connect 4-pole socket (30) from power harness (7) to 4-pole plug (29) from T-Splitter (26).

The quick out connection (15) can be used for connecting the StarFire[™] receiver/ITC via a spare cable to the Can line.





WZ290201437-UN-13DEC10

A—+12 V when engine running (Not on engine start, see important)

IMPORTANT: The electric power supply must be connected according to the wiring diagram and explanation as written in this section. Not following these instructions can cause severe damage to the electrical system of the machine.

WZ290201437

The correct connection of the plug (item (17) in **Fitting Electrical Socket to Tractor**) is important for the proper operation of GreenStar[™] display.

- Connect the red +12V-wire (15/30) via 25 Amp. fuse to the plus (+) terminal on the battery.
- Connect the red +12V-wire (82) to the +12V power supply which is available when the machine is running. When the tractor is started, the 12V power supply must be switched off in order to turn off the system. There is a relay (NO) integrated on the printed circuit board.
- Connect the black ground wire to the negative terminal (-) of the battery.

The relay ensures voltage feed (via cable 15/30). Once

the vehicle is started, the relay temporarily switches off the system (via cable 82) in order to prevent voltage differences. This must be verified with a voltage tester, before mounting the plug into the socket.

Always keep the battery well-charged (12 V minimum, 14.4 V maximum) and ensure proper functioning of the alternator.

CAN-Bus Wiring Harness (preassembled box)



A—Preassembled Box

WZ290101470-UN-15MAR02

A kit with a preassembled box for quick and easy installation is available, to connect the sprayer with ISOBUS to different tractors.

This kit contains the preassembled box and a power supply cable with 9-pole socket for connection to the battery of the tractor. Connect the power supply cable with socket to the battery first:

- Mount the power socket with bracket at the rear of the tractor
- Connect the red wire to the positive pole (+) of the battery
- Connect the black wire to the negative pole (-) of the battery

The box (A) should be installed at the rear of the tractor. This box comprises the following connections:

- 9-pole ISO-11783 CAN socket: The CAN bus cable with 9-pole plug coming from the sprayer should be connected to this socket.
- Cable with 14-pole CAN bus socket: This cable should be connected to the cable with plug coming from the Multi-Function Control lever (MFC) in the tractor cab
- Cable with two 10-pole connectors (black and gray): The black connector should be plugged into the GreenStar™ display socket in the tractor cab. The GreenStar display has a 26-pin socket and requires an adapter cable, please use AL175883 harness for a Mannheim tractor. The gray connector is used for connection to the mobile processor (not available with GreenStar™ displays).
- Cable with 3-pole 12-Volt COBO plug: This connector needs to be plugged into the 3-pole COBO socket in the tractor (see also item **Power Supply** in this section).
- Cable with 9-pole ISO-11783 connector (only used for power supply): This cable should be connected to the 9-pole power supply socket, previously installed at the rear of the tractor.
- Cable with 12-pole Deutsch connector : This cable can be connected (if available) to the 12-pole socket from the StarFire™ receiver. If required, an extension cable WZ8816134 is available to operate the sprayer together with other AMS applications

T-Splitter Cable Used on GreenStar™ /ISO-Ready Tractors



T-splitter 3-Pole Convenience Outlet - WZ8816143



WZ290101700—UN—11APR05 T-Splitter 3-Pole (ISOBUS) Power Connector - WZ8816142



T-Splitter 2-Pole Power Connector - WZ8816141



T-Splitter WZ8816144

- A —14-Pole Connector for MFC
- B —Power Connector/Outlet
- C —Plugs 4-Pole CAN Bus

The following T-Splitter cables part are available:

 WZ8816141: T-Splitter cable (with 4-pole Deutsch CAN and 2-pole black Power connector)for John Deere 6010 / 7010 / 7020 / 7030 / 8010 / 8020 / 8030 Waterloo Series Tractors with GreenStar[™] ready wiring harness.

NOTE: Can be also used for all older or competitive tractors retrofitted with Generic GreenStar[™] or Sprayer Harnesses (all 00 and 10 Series)

- WZ8816142: T-Splitter cable (with 4-pole Deutsch CAN and 3-pole black Power connector) for John Deere 6020 / 6030 / 7030 Mannheim Series Tractors with ISO/GreenStar™ ready wiring harness.
- WZ8816143: T-Splitter cable (with 4-pole Deutsch

CAN and 3-pole black Convenience Outlet Power connector) for John Deere 7020 / 7030 / 8020 / 8030 Series Tractors with ISO/ GreenStar™ ready wiring harness.

- NOTE: NOTE: The Convenience Outlet Power connector is not compatible with the COBO 12V Power connector.
- WZ8816144: T-Splitter cable (with round 9-pole connector) for John Deere 6030 Premium / 7030 Premium / 6R / 7R / 8R / 9R Series Tractors with ISO/ GreenStar™ ready wiring harness and ISO compliant competitive tractors.
- 1. Connect both 4-pole plugs (C) of the T-splitter to the tractor 4-pole CAN Bus free sockets. If WZ8816144 is used connect the 9-pole connector to the tractor CAN-Bus in-cab connector.
- NOTE: The tractor cab side panel needs be removed to connect both 4-pole plugs (*C*) of the T-splitter to the 4-pole CAN Bus sockets.
- 2. Connect the power outlet plug (B) to a power outlet available at the 6020 and 6030 series tractors (included in GreenStar[™]-ready wiring harness). For the 7020, 7030, 8020 and 8030 the power outlet plug (B) should be connected to the standard 3-pole power outlet plug inside the cab.
- NOTE: The tractor cab side panel needs be removed to connect the power connector of WZ8816141 and WZ8816142.
- 3. Finally, connect the 14-pole connector (A) to the **MFC**.

Tractor		T-Splitter Cable				
Model	Power Connector	Connector Legend	WZ8816141	WZ8816142	WZ8816143	WZ8816144
6010	2-Pole	D	Yes			
7010	2-Pole	D	Yes			
7020	2-Pole	D	Yes			
7030	2-Pole	D	Yes			
8010	2-Pole	D	Yes			
8020	2-Pole	D	Yes			
8030	2-Pole	D	Yes			
6020	3-Pole ISOBUS	E		Yes		
6030 Premium	3-Pole ISOBUS	E		Yes		
7030 Premium	3-Pole ISOBUS	E		Yes		
7020	3-Pole Convenience Outlet	F			Yes	

GreenStar is a trademark of Deere & Company

Tractor				T-Splitter Cable		
Model	Power Connector	Connector Legend	WZ8816141	WZ8816142	WZ8816143	WZ8816144
7030	3-Pole Convenience Outlet	F			Yes	
8020	3-Pole Convenience Outlet	F			Yes	
8030	3-Pole Convenience Outlet	F			Yes	
				-	-	
6030 Premium	9-Pole Outlet (Power & CAN)	G				Yes
7030 Premium	9-Pole Outlet (Power & CAN)	G				Yes
6R	9-Pole Outlet (Power & CAN)	G				Yes
7R	9-Pole Outlet (Power & CAN)	G				Yes
8R	9-Pole Outlet (Power & CAN)	G				Yes
9R	9-Pole Outlet (Power & CAN)	G				Yes

T-Splitter Table GreenStar



T-Splitter Power Connectors

WZ290102474-UN-10NOV14

D—2-Pole E—3-Pole ISOBUS

F—3-Pole Convenience Outlet G—9-Pole Outlet (Power & CAN)

WZ00232,00005CF-19-24AUG18

Tractor ModelPower ConnectorT-Splitter CableConnector LegendWZ8816141WZ8816142WZ8816143WZ881614460102-Pole DYes70102-Pole DYes70202-Pole DYes60203-Pole DYes80202-Pole DYes80302-Pole DYes60203-Pole ISOBUSEYes6030 Premium3-Pole ISOBUSEYes7030 Premium3-Pole ISOBUSEYes70203-Pole Convenience OutletFYes70303-Pole Convenience OutletFYes80203-Pole Convenience OutletFYes80303-Pole Convenience OutletFYes6030 Premium9-Pole Outlet (Power & CAN)GYes7030 Premium9-Pole Outlet (Power & CAN)GYes6R9-Pole Outlet (Power & CAN)GYes7R9-Pole Outlet (Power & CAN)GYes8R9-Pole Outlet (Power & CAN)GYes9R9-Pole Outlet (Power & CAN)GYes



Install Wiring Harnesses on Tractor - After Model Year 2019

Install Wiring Harness for Gen 4 Display - Connections

WZ290201513-UN-16AUG18

- -Main Relay (60 A) 1-
- -Main Relay (30 A) 2-
- 3--Battery
- -Fuse (60A) 4-
- –Fuse (30A) 5-
- 6—Ground Wire (black)
- -Power Harness 7-8-
- -Multi-Function Control (MFC)
- 9—Connector (14 pole) (9a Connector Blank for when not in use) 10—GreenStarTM Terminal
- 11—Terminator Blank
- 12—Terminator

The electric power supply must be connected as described in this section.

Verify, before connecting the sprayer, Multi-Function Control lever (MFC) and GreenStar™ display, that the power supply is connected and functions as described.

Failure to follow these instructions can cause severe damage to the electrical system of the machine.

Always keep the battery well-charged (12 V minimum, 14.4 V maximum) and ensure the alternator functions properly.

- 13—Gen 4 Display Connector 14—Diagnostic Connector
- 15—Connector for StarFire™ Position Receiver (15a Connector Blank for when not in use) 16—StarFire[™] Position Receiver
- 17—System Harness 18-
- -Plug (3-pole Cobo) 19-Socket (3-pole Cobo)
- 20—Socket (2-pole)
- 21-Plug (2-pole)
- 22—Plug (4-pole)
- 23—Socket (9-pole Deutsch)

CAN-Bus Wiring Harnesses

After verifying that the tractor power supply is operating correctly, the CAN-Bus wiring harness has to be installed in the tractor cab as shown in the drawing. This wiring harness is pre-assembled as far as possible. After the wiring harness is installed in the tractor cab, the remaining cables have to be connected to the tractor battery and the 9-pole ISO plug together with all separate plugs as follows:

- Install the pre-assembled main relays (1) and (2) on the tractor
- Connect the black ground wires (6) to the negative pole (-) of the battery (3)

GreenStar is a trademark of Deere & Company

StarFire is a trademark of Deere & Company

- Connect the white +12V-wires with 60A fuse (4) and 30A fuse (5) to the positive pole (+) of the tractor battery (3)
- Mount socket (23) on the back of the tractor and connect the cables as follows in the socket:
 - Brown (Br/ground /60A) to position 1
 - Brown (Br/ground/25A) to position 2
 - White (Wt/+12V/60A) to position 3
 - White (Wt/+12V/25A) to position 4
- Connect 2-pole socket (20) from the Power harness (7) to 2-pole plug (21) from the System Harness cable (17)
- Connect 4-pole plug (22) to socket (23)

Plug (3-pole Cobo)

- Mount 14-pole socket (9) in the tractor cab near the position where the Multi-Function Control lever (MFC) (8) has to be installed
- Plug (13) is used to connect the GreenStar[™] Gen 4 Display (10)
- Terminator (11) and (12) indicates the end of this Can-Bus cable
- Connect 3-pole (Cobo) plug (18) to the 3-pole socket (19) in the tractor. See also Power Supply in this section.

Connection (15) can be used for connecting the StarFire[™] position receiver via a spare cable to the Can line.

15/30,+ (DIN9680)



WZ290201437-UN-13DEC10

A—+12 V when engine running (Not on engine start, see IMPORTANT note)

- IMPORTANT: The electric power supply must be connected according the wiring diagram and explanation as written in this section. Not following these instructions can cause severe damage to the electrical system of the machine.
- Connect the red +12V-wire (15/30) via 30 Amp. fuse to the plus (+) terminal on the battery.
- Connect the red +12V-wire (82) to the +12V power supply which is available when the machine is running. When the tractor is started, the 12V power supply must be switched off in order to turn off the system. There is a relay (NO) integrated on the printed circuit board.
- Connect the black ground wire (31) to the negative terminal (-) of the battery.

The relay ensures voltage feed (via cable 15/30). Once the vehicle is started, the relay temporarily switches off the system (via cable 82) in order to prevent voltage differences. This must be verified with a voltage tester, before mounting the plug into the socket.

GreenStar is a trademark of Deere & Company

Always keep the battery well-charged (12 V minimum, 14.4 V maximum) and ensure proper functioning of the alternator.

CAN-Bus Wiring Harness (preassembled box)



WZ290101470-UN-15MAR02

A—Preassembled Box

A kit with a preassembled box for quick and easy installation is available, to connect the sprayer with ISOBUS to different tractors.

This kit contains the preassembled box and a power

StarFire is a trademark of Deere & Company

supply cable with 9-pole socket for connection to the battery of the tractor. Connect the power supply cable with socket to the battery first:

- Mount the power socket with bracket at the rear of the tractor
- Connect the red wire to the positive pole (+) of the battery
- Connect the black wire to the negative pole (-) of the battery

The box (A) should be installed at the rear of the tractor. This box comprises the following connections:

- 9-pole ISO-11783 CAN socket: The CAN bus cable with 9-pole plug coming from the sprayer should be connected to this socket.
- Cable with 14-pole CAN bus socket: This cable should be connected to the cable with plug coming from the Multi-Function Control lever (MFC) in the tractor cab
- Cable with two 10-pole connectors (black and gray): The black connector should be plugged into the GreenStar[™] display socket in the tractor cab. The GreenStar[™] displays have a 26-pin socket and requires an adapter cable, please use AL175883 harness for a Mannheim tractor. The gray connector is used for connection to the mobile processor (not available with GreenStar[™] displays).
- Cable with 3-pole 12-Volt COBO plug: This connector needs to be plugged into the 3-pole COBO socket in the tractor (see also Power Supply in this section).
- Cable with 9-pole ISO-11783 connector (only used for power supply): This cable should be connected to the 9-pole power supply socket, previously installed at the rear of the tractor.
- Cable with 12-pole Deutsch connector : This cable can be connected (if available) to the 12-pole socket from the StarFire[™] receiver. If required, an extension cable WZ8816134 is available to operate the sprayer together with other AMS applications

WZ00232,0000778-19-20AUG18

Steering Axle Automatic Tracking System Assembly



WZ290102227

WZ290102227-UN-14NOV11



WZ290102259-UN-070CT11



A—Pivoting Arm

B—Support Sleeve

C—Ball

D—Pivoting Arm Alignment (90° to the Drawbar Center)

GreenStar is a trademark of Deere & Company StarFire is a trademark of Deere & Company

IMPORTANT: Ensure tractor and sprayer are in direct alignment before attaching the steering rod to the tractor.

Attach the pivoting arm (A), which activates the sensor, with the steering rod to the tractor. This is done by means of a fixed support sleeve (B). First attach the supplied support sleeve to the tractor frame by means of the flat strip. Furthermore, it is important that the pivot (ball) (C) of the support sleeve is level (in height), in-line (fore and aft) and at the set distance of 135 mm to the drawbar tow eye of the sprayer.

Ensure that the pivoting arm is aligned at 90° to the drawbar center (D) after attaching the steering rod to the tractor.

WZ00232,0000307-19-10NOV11

Preparing the Machine

PTO Shaft

The PTO shaft must be of the correct length. If it is too long, cut both halves by the same amount. For instructions and maintenance, refer to the Operator's manual of the PTO shaft.

WZ00085,000047A-19-08MAY06

Remove Shipping Tow Eye Were Fitted

For, transportation purposes by sea a transportation tow eye is fitted to the sprayer for loading and unloading from the ship. Before use in the field, ensure that the shipping tow eye has been replaced with the supplied tow eye included with the sprayer. Refer to **Metric Bolt and Cap Screw Torque Values** in the section **Maintenance** for the correct torque.

WZ00232,000063D-19-19SEP16

Pump Oil Level



A—Oil reservoir

WZ290700022-UN-22MAR10

Check the oil level in the reservoir. There is sufficient oil in the reservoir when the oil level is between the minimum and maximum marks. If necessary, top up with John Deere Torq-Gard Supreme[™] or SAE 30 viscosity grade oil to the required level. Repeat the level check with the pump in operation.

IMPORTANT: Do not use Plus 50 or Plus 52 Oil in the pump as this will cause damage. It is not recommended to use a higher viscosity grade oil than SAE 30. Higher viscosity oils reduces the diaphragms life and increases pump wear.

OUCC020,00023FA-19-23SEP16

Suction Line

Check whether the suction line is properly connected to the pump and the suction filter has been fitted to prevent air suction. Check suction lines and filters of both pumps, if fitted.

AG,WZ00009,193-19-07AUG00

Lubrication

For lubrication and oil change, see the "Maintenance" section.

AG,WZ00009,194-19-29MAY06

Drawbar Tow Eyes

Drawbar tow eyes for the drawbar

The drawbar tow eye must fit on the tractor tow hook without any clearance. The drawbar tow eyes are available in different versions, to suit the different tractor tow hooks.

The following tow eyes are available for the universal drawbar:

- fixed ring tow eye 50 mm with German TÜV approval for tractors with Hitch, Pickup Hitch or Piton-Fix
- K-80 ball coupling with German TÜV approval

These tow eyes have flanges and are bolted to the front side of the drawbar with six bolts.

Check also, whether the machine is level when at angles with the direction of driving. If this is not the case, the pressure of left and right tires may differ. This must be corrected.

It must be possible for the machine to rotate in relation to the tractor. To achieve this, either the tractor tow hook or the sprayer drawbar tow eye (not both) must be able to swivel or the suitable adapter bushing must be fitted in the fixed drawbar tow eye. Swinging must be possible, but play must be avoided. Play must also be absent in the tractor tow hook itself, both forward/backward and left/right, because it will otherwise lead to inaccurate control in tracking machines.

WZ00232,0000308-19-29SEP11

Coupling to the Tractor

The machine must be coupled to the tractor to enable a flat (water level) position of the sprayer behind the tractor.



WZ290102228-UN-040CT11



WZ290102229—UN—04OCT11



Possible Configurations

A—Drawbar **B—Tow Eye Support Frame** C—Tow Eye

The height of the tow eye can be set in four positions within a vertical range of 20 cm as follows.

- 1. The tow eye (C) can be fitted to the support frame (B) in two positions as the support frame can be rotated 180°. This allows a height difference of 50 mm.
- 2. The tow eye support frame (B) can be connected in four different height positions (in 50 mm steps) to the drawbar dependent on its orientation.

The maximum height of the tow eye is approx. 70 cm with most tires, when the sprayer is level.

Tow Eye — Specification Support Frame — Specification CAUTION: Never adjust the support frame (six bolts) or tow eye (eight bolts) into a position where all bolts are not used.

WZ00232.0000309-19-05OCT11

Hydraulic Jack Support



Hydraulic lines



Hydraulic line Identification



Hydraulic Jack Support Fully Raised - Transport Position



WZ290102439

WZ290102439—UN—03DEC13 Hydraulic Jack Support Lowered

A—Green Hydralic line - Lower Support B—Yellow Hydralic line - Rise Support C—Hydraulic Jack Support Fully Raised - Transport Position D—Hydraulic Jack Support Lowered

- IMPORTANT: Ensure the Hydraulic Jack Support is fully raised (transport position) before moving the sprayer with the tractor.
- IMPORTANT: Park the sprayer on level firm ground when uncoupling. Rise the drawbar high enough with the jack support to uncouple from the tractor.

Connect the Green (A) and Yellow (B) Hydraulic lines to a double-acting selective control valve (SCV) on the tractor for jack support operation.

Once the machine has been coupled, the support leg can be raised into the machine with the hydraulics (SCV).

CAUTION: Never disconnect the sprayer when the boom is not in the transport position.

WZ00232,00004DC-19-03DEC13

Uncoupling the Sprayer









WZ290102237-UN-040CT11

A—Yoke Mount B—Park Brake Shaft C—Yoke and Shaft Connected

CAUTION: Do not enter area between the tractor and the sprayer during manoeuvring.

CAUTION: Never uncouple the machine when the spray booms are folded out.

CAUTION: Shut off the engine and wait for all moving parts to come to a standstill before disconnecting PTO shaft, Hydraulic Pump Drive, or Air Compressor options.

- IMPORTANT: Refit protective caps to avoid damage and contamination of connectors.
- IMPORTANT: To help prevent unauthorized use of the sprayer when it is not in use or is stored, fit a lock to the tow eye.

NOTE: The brake system may be oil or air pressurized.

- 1. Park on hard level ground.
- 2. To apply the park brake, release yoke from mount (A) and align yoke with the shaft (B), push forward until shaft is housed (C) in the yoke. Turn the yoke clockwise until resistance is felt; the park brake is now applied. Chock the wheels.
- 3. Disconnect the following items, refit caps and stow:
 - a. Brake lines.
 - b. Hydraulic hoses.
 - c. Travelling light cable.
 - d. Steering rod automatic tracking system (if fitted).
 - e. Electrical connector (12 V and CAN Bus).
 - f. Emergency brake cord (if fitted).
 - g. PTO shaft (if fitted).
- 4. Extend hydraulic support leg until the sprayer is supported.
- 5. For fixed tow eye couplings, remove retaining pin

from coupling and move tractor slowly forward to clear sprayer.

6. For ball-type couplings, release lock and raise sprayer with the hydraulic support leg until coupling is free of ball, then move tractor forward to clear sprayer.

WZ00232,000030B-19-24AUG18

Raising Up the Machine



A—Lifting Points

CAUTION: Raise up machine with tractor coupled.



NOTE: To adjust track width with sliding axle, refer to "Track Width Adjustment with Sliding Axle" in this section.

Raise the machine at indicated points (A) on the axle.

WZ00232,000030C-19-04OCT11

Track Width Adjustment with Fixed and Steered Axle



IMPORTANT: The maximum permissible track is the figure given in column B in the table below for the type of axle described.

With the fixed axle fitted with row crop tires and wheels, the track width can be adapted by exchanging the left and right wheels. Due to the spherical shape of the flange, there are two possible track widths (depending on the tires used). See table below.

If the machine is fitted with flotation tires, only the larger track width is possible (see column B in the table below).

If the wheels are reversed to adjust the track width, make sure that the machine is secured when jacked up. Always place additional support blocks under the axle.

The specified torque for the wheel nuts (M22x1.5) is 480

 $N \cdot m$. The nuts must be tightened in a cross pattern and checked regularly.

	Track Width Possibilities		
Type of Axle	А	В	
Fixed and Steered Axle 180/210 cm	180 cm	210 cm	
Fixed and Steered Axle 200 cm	—	200 cm	
Fixed and Steered Axle 195/225 cm	195 cm	225 cm	

WZ00232,000030D-19-19OCT11

Reflector Plates



WZ290102240—UN—05OCT11 Front Reflector Plate 2.55 m



Rear Reflector Plate 2.55 m



Rear Reflector Plate 3.00 m

A—Reflector Plate 2.55 m B—Reflector Plate 3.00 m

If the transport width of the sprayer exceeds 2,55 m, the sprayer is fitted with reflector plates (A) for road transport¹. With double folding booms the structure width is 2,55 m, but with wide tires and/or wider track widths transport width can exceed 2,55 m.

The position of the reflector plates should be adjusted to the selected track width and fitted tires, in such a way that the edges of the reflector plates are in line with the outer edges of the wheel fenders or tires.

WZ00232,0000408-19-11NOV12

Hydraulic Connection - Electro-Hydraulic

CAUTION: Pressurised hydraulic liquids may penetrate the skin and cause serious injury. Release the pressure before disconnecting any hydraulic or other hoses. Tighten all connections before allowing the pressure to build up. Keep hands and body away from openings and nozzles which eject pressurised liquids. When looking for any leakage, do not use your hands, use a piece of paper or cardboard.

ANY liquid penetrating the skin must be removed surgically within a few hours to prevent inflammation and serious injury.



Electro-Hydraulic Operation

Connect hydraulics for electro-hydraulic operating system.

The hydraulic hoses are provided with coloured protective caps. The protective cap colours have the following meaning:

- red = pressure connection
- blue = pressureless return connection
- yellow = signal line

WZ00232,000041A-19-23JUL13

¹ Depending on road traffic legislation in the different countries

Hydraulic Connection - Tractor Selective Control Valves

CAUTION: Pressurized hydraulic liquids may penetrate the skin and cause serious injury. Release the pressure before disconnecting any hydraulic or other hoses. Tighten all connections before allowing the pressure to build up. Keep hands and body away from openings and nozzles which eject pressurized liquids. When looking for any leakage, do not use your hands, but a piece of paper or cardboard.

ANY liquid penetrating the skin must be removed surgically within a couple of hours to prevent inflammation.



X9811—UN—23AUG88

Connection on Machines with Hydraulic Operation by Tractor Selective Control Valves



WZ290201303

WZ290201303—UN—19FEB02 A—Spray boom height adjustment connection B—Spray boom folding/unfolding connection

- C—Spray boom tilt connection
- Connect hydraulics for height adjustment (A).
- Connect hydraulics for spray boom folding/unfolding (B).
- Connect hydraulics for controlling spray boom tilt (C).

The hydraulic hoses have been provided with coloured protective caps. The protective cap colours have the following meaning:

- red = double-acting selective control valve pressure connection, spray boom folding/unfolding
- blue = double-acting selective control valve return connection, spray boom folding/unfolding
- black = single-acting selective control valve connection, spray boom height adjustment
- yellow = double-acting selective control valve pressure connection, spray boom tilt
- green = double-acting selective control valve return connection, spray boom tilt

Connection on Machines with Hydraulic Selector (using the MFC)



WZ290201463

WZ290201463-UN-21AUG13

A—Spray boom height adjustment connection B—Spray boom folding/unfolding connection

- Connect hydraulics for height adjustment (A).
- Connect hydraulics for spray boom folding/unfolding (B).

The hydraulic hoses have been provided with coloured protective caps. The protective cap colours have the following meaning:

- red = double-acting selective control valve pressure connection, spray boom operation
- blue = double-acting selective control valve return connection, spray boom operation
- black = single-acting selective control valve connection, spray boom height adjustment
- yellow = double-acting selective control valve pressure connection, hydraulic drawbar steering (optional)
- green = double-acting selective control valve return connection, hydraulic drawbar steering (optional)

Connection on Machines with Electro-Hydraulic Operation (MFC)

Connect hydraulics for electro-hydraulic operating system.

The hydraulic hoses are provided with coloured

protective caps. The protective cap colours have the following meaning:

- red = pressure connection
- blue = pressureless return connection

WZ00232,0000419-19-21AUG13

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

Coupling Brake Hoses

NOTE: The brake system may be oil or air pressurized.

Hydraulic braking system (Not for Germany)

IMPORTANT: Check that all hose connections are clean.





A—Stowage Point for Oil Pressure Brake Hose B—Hydraulic Emergency Brake Valve C—Driving Position (Vertical) D-Rope

To be able to use oil pressure braking, the hydraulic hose connected to the brake valve has to be connected to the tractor (see tractor manual).

If the hose is disconnected, connect the quick-coupling tip to the proper position (A) on the stowage point.

Unlocking the park brake:

 Turn park brake yoke anti-clockwise to release the park brake.

Attaching the emergency brake:

- Ensure hydraulic emergency brake valve (B) is vertical, this is the driving position (C).
- Fasten rope (D) to the tractor.

When uncoupling the machine, remove the rope and put the machine on the park brake by turning the park brake yoke clockwise, thus applying the brake.

Pneumatic braking system



A—Command Line with Yellow Coupling B—Air Supply Line with Red Coupling

IMPORTANT: Before connecting the hoses of the pneumatic brake system, verify that the couplings are clean. Immediately following disconnection of the hoses, the dust caps must be mounted onto the couplings. The tractor must be fitted with a 2-line air pressure system. When attaching the air pressure hoses, do not use the black connection option.

When connecting the air pressure hoses to the tractor, first attach the command line with the yellow coupling (A) and next the supply line with the red coupling (B), see also tractor manual. For other types of fittings contact your dealer.

Hydraulic Emergency Brake Valve

WZ00232,0000311-19-14NOV11

A—Hydraulic Emergency Brake Valve

- **B**—Driving Position (Vertical)
- C—Pressure Relief Pump
- D—Accumulator E—Rope
- F—Emergency Brake Activation (Horizontal)

Before Driving

- Ensure emergency brake valve (A) is in driving position (B)
- Connect rope (E) to the tractor
- Operate the brakes of the tractor to load the accumulator (D). Oil will flow through the hand pump check valves to the accumulator
- Release the brakes

Emergency Brake Activation

- The rope (E) is tightened and turns the emergency brake valve to brake position (F). Retaining pin will be pulled out of the valve
- The emergency brake valve closes the connection to the tractor and connects the accumulator to the brake cylinders
- Pressurized oil from the accumulator flows through the emergency brake valve to the brake cylinders and applies the brakes

Relieve pressure from quick coupler

- Due to internal leakage of the emergency brake valve the disconnected brake line and cylinders can become pressurized by the remaining accumulator pressure
- To relieve the pressure from brake line, push the pressure relief pump knob (C) several times. This will pump the oil from the brake line back into the accumulator
- Placing the valve in the brake position while pumping will decrease the amount of pump strokes needed to connect the brake line. After the brake line has been connected to the tractor, the valve has to be turned back to driving position again

WZ00232,0000313-19-06OCT11

Hydraulic Pump Drive (Option)



Hydraulic Pump Drive



Hydraulic Lines Identification

- A—Hydraulic Motor
- B-Hydraulic Block with Check Valve and Over Speed Protection
- C—Return Line
- D—Pressure Line
- E—Piston Diaphragm Pump with Speed Sensor
- F—Pressure Line Stowed Red Cap labelled with a P Decal G—Return Line Blue Cap labelled with a T Decal

S-Return Line - Blue Cap labelled with a T Decal

IMPORTANT: Refer to the tractor Operator's Manual for the hydraulic connection for a hydraulic motor or hydrostatic drive for correct operation.

IMPORTANT: Always start the pump at the lowest possible speed, idle the tractor engine.

The system comprises of a hydraulic motor (A) which has a check valve fitted in the hydraulic block (B) to prevent reverse rotation of the motor if the hydraulic connections are mixed up. The system is equipped with an over speed valve to protect the piston diaphragm pump (E). The hydraulic pump drive has a separate system from that of the main hydraulic system for the sprayer. This system is only intended for use with sprayers that are fitted with the Electrical-Hydraulic system. See **Operation of Hydraulic Functions** in the **Preparing the Tractor** section.

The hydraulic pump dive system will work with all tractors that have a closed circuit (CC). For open center (OC) and load sensing (LS) consult your John Deere Dealer for tractor compatibility. The hoses have decals

placed on them to identify functionality and for correct connection to the tractor hydraulics system.

Hydraulic hose connection for the pressure line (F) is through the tractor SCV system with a ½" connection. The return line (G) is also connected to the tractor SCV system through a ½" connection. The pump speed in rpm can be seen on the display in the **Sprayer - Main** page when the **Solution Pump Speed** icon is selected (see **Sprayer - Main** in **Sprayer Control System** section). In the **Diagnostics** screen for the **Sensor Status** the rpm of the pump can be seen in **Solution Pump Speed**.

For adjusting the Over Speed Protection see Hydraulic Pump Drive - Over Speed Protection in the Preparing the Tractor and Adjustments section.

WZ00232,000054D-19-15SEP15

Electrical Connection



A—GreenStar display connected to implement CAN Bus B—Multi-Function Control (MFC)

- Connect the public road travelling lights on the tractor.
- Connect the CAN-Bus communication cable with plug from the sprayer to the connector on the tractor.
- Connect the GreenStar display (A) to the implement CAN Bus.
- Connect the Multi-Function Control **MFC** (B) to the tractor CAN Bus line by connecting the cable from the **MFC** to the T-splitter cable.
- Connect display to vehicle wiring harness

WZ00232,000041B-19-21AUG13

Coupling and Uncoupling of the Sprayer

Attaching Display - 1100



Back of Implement Display 1100

A—Display mounting holes B—Display connector

The back of the display contains:

- Display Mounting Holes—attach to bracket on machine (M5 screw).
- Display Connector—connects vehicle wiring harness plugs with display for system power and communication.

WZ00232,000041E-19-30SEP16



PC10857GC-UN-280CT08

- 4. Position the display so that it is comfortable to reach and does not obstruct your view.
- IMPORTANT: Display must be connected to SWITCHED and CONSTANT power. This allows the display to shutdown properly and save data. When the key is switched off, a 'Saving Settings' message will appear on the screen.
- NOTE: Bracket and harness are sold separately.

WZ00232,000041D-19-19DEC13

Attaching Display - GS2 1800



PC10857GA-UN-280CT08

A—Corner Post Mounts B—Wing Nuts (2 Used) C—Vehicle Display Connector D—Connector on Display

- 1. Attach bracket to corner post mounts (A).
- 2. Attach display to bracket using the wing nuts (B) (provided with display).
- 3. Attach harness to the corner post connector (C) and the lower connector on the back of the display (D).

Attaching Display - GS3 2630



PC12702-UN-20JUL10

A—Display mounting holes

- B—Secondary navigation C—Primary Display connector
- D—Video Connector
- E—USB Connections
- F—Ethernet Connector
- G—USB Connector (Future Use)

Backside of Display contains:

• Display Mounting Holes—attach to bracket on machine.

- Secondary Navigational Point—provides backup navigation with display.
- Display Connector—connects vehicle wiring harness plugs with display for system power and communication.
- Video Connector—connects video source to display.
- USB Connections—holds USB drive used for data collection and saving selected display and implement settings.

NOTE: It is recommended to use John Deere USB drives purchased from a John Deere dealer. Other USB drives may not be compatible.

- Ethernet Connector—for advanced AMS applications if tractor is JDLink[™] equipped.
- USB Connector—with an adapter, a USB cable can be used in the future.

NOTE: Backside of display will have label containing display model and serial number.

WZ00232,000041C-19-05NOV14

Automatic Tracking System

NOTE: The automatic tracking system is optional equipment.

The steering rod (A) is connected to the tractor with pin joints.

To uncouple the machine, only the steering rod on the tractor side needs to be disconnected. The steering rod is uncoupled by pulling spring clip (B) from the front pin joint.

WZ00232,0000314-19-05OCT11

PTO Shaft Connection (Option)

CAUTION: Shut off the engine and wait for all moving parts to come to a standstill before disconnecting PTO shaft.

Connect the PTO shaft to the tractor and to the pump of the sprayer according to the instructions in the separate operator's manual of the PTO shaft. The side with the wide-angle coupling should be fitted at the tractor side.

WZ00232,00005D0-19-21MAY15



A—Steering Rod B—Spring Clip WZ290102245-UN-050CT11

JDLink is a trademark of Deere & Company

Public Road



CAUTION: Stopping distance of towed loads increases with speed, weight and when driving downhill. Towed loads that are too heavy for the tractor or are towed too fast can cause loss of control. Exercise care when deciding equipment and load combinations.

IMPORTANT: The selective control valves of the tractor which are needed to operate the spraver should be placed in neutral position and locked when travelling on public roads or when not in use.

IMPORTANT: The tractor's brake pedals must be coupled together by means of the pedal coupler when driving on public roads.

When travelling on public roads, the relevant traffic regulations must be obeyed. Transport with tanks empty on surfaces with extreme slopes of greater than 20° for the Custom Union only. Observe the maximum speed allowed for the machine.

Refer to tractor's operating manual for additional information.

WZ00232.0000540-19-09OCT14



WZ290101717

WZ290101717-UN-07SEP05

A—Plug for Public Road Travelling Lights B—Pin Layout for Light Plug (Vehicle Side)

When travelling on public roads, plug (A) for travelling lights must be connected to the tractor.

When travelling on public roads, the relevant traffic regulations must be obeyed. In some countries, it is required to have a beacon light due to the width of the machine.

The pin layout of the light plug is indicated in the table.

Pin layout of 7-pole light plug			
Number	Code	Function	Cable Color
1	L	Flashing light left	Yellow
2	54G	Constant current	Blue
3	31	Ground	White
4	R	Flashing light right	Green
5	58R	Lighting right	Brown
6	54	Braking light	Red
7	58L	Lighting left	Black

WZ00232,0000315-19-07OCT11

Hydraulic Braking System (Not For Germany)



Public Road Travelling Lights



WZ290100021-UN-280CT98



WZ290102242—UN—16NOV11



A—Hydraulic Brake Cylinder B—Hydraulic Emergency Brake Valve C—Pressure Relief Pump Knob D—Driving Position E—Rope F—Park Brake

In the case of hydraulic braking system (optional) hydraulic cylinders (A) have been fitted as brake cylinders. On fixed axles these cylinders are fitted in the middle of the axle. On sliding and steering axles they are fitted to the drum brakes on the axle ends. The brake cylinders are operated by a trailer brake valve on the tractor.

Park and Emergency Brake for Hydraulic Brake System

CAUTION: Before travelling on public roads, always fasten the emergency brake rope to the tractor and engage the catch.

The hydraulic braking system is also fitted with an emergency and park brake, which are located on the front of the machine.

- Release the yoke from the mount and align the yoke with the shaft, push forward until shaft is housed in the yoke.
- Turn the yoke clockwise until resistance is felt; the park brake is now applied. Chock the wheels.

To unlock the park brake:

• To release the park brake, the procedure for engaging the park brake is performed in reverse order.

Hydraulic Emergency Brake Valve

Before Driving

- Ensure emergency brake valve (B) is in driving position (C)
- Connect rope (D) to the tractor
- Operate the brakes of the tractor to load the accumulator. Oil will flow through the hand pump check valves to the accumulator
- Release the brakes

Emergency Brake Activation

- The rope (D) is tightened and turns the emergency brake valve to brake position. Retaining pin will be pulled out of the valve
- The emergency brake valve closes the connection to the tractor and connects the accumulator to the brake cylinders
- Pressurized oil from the accumulator flows through the emergency brake valve to the brake cylinders and applies the brakes

Relieve pressure from quick coupler

- Due to internal leakage of the emergency brake valve the disconnected brake line and cylinders can become pressurized by the remaining accumulator pressure
- To relieve the pressure from brake line, push the pressure relief pump knob (C) several times. This will pump the oil from the brake line back into the accumulator
- Placing the valve in the brake position while pumping will decrease the amount of pump strokes needed to connect the brake line. After the brake line has been connected to the tractor, the valve has to be turned back to driving position again

Before travelling on public roads, the park brake must be unlocked and rope (D) must be fastened to the tractor. This emergency brake facility ensures activation of the brakes by the rope in the event of breakage, loss or detachment of the pulled machine during road transport.

Engaging the park brake:





E—Compressed-Air Storage Tank F—Drain Valve G—Test Connection H—Shunting Valve I—Brake Cylinders J—Quick-Release Valve

The crop sprayer may also be fitted with a 2-line (nonseparated) pneumatic braking system (optional). For this purpose, the tractor must be equipped with an air pressure system with an external connection.

When connecting the air pressure hoses to the tractor, first attach the command line (yellow coupling) and then the supply line (red coupling).

When disconnecting the air pressure hoses from the tractor, first detach the supply line (red coupling) and then the command line (yellow coupling).

Driving position:	From the tractor, compressed air is pressed to the trailer brake valve (D) via the supply line coupling (A). Via connections on the trailer brake valve, the compressed air flows to the air storage tank (E).
Brake position:	When operating the brake valve of the tractor, air is pressed to the trailer brake line (B) and the trailer brake valve (D). As a result, this valve sends the compressed air to the brake cylinder (I) via quick-release valve (J).
Release position:	When releasing the air from the trailer command line (B), the trailer brake valve (D) is reversed, so that the air pressure on the brake cylinders (I) is removed via quick-release valve (J).
Function on loss or detachment of the trailer:	When releasing the air from the trailer supply line (A), the trailer brake valve (D) is reversed, so that the machine is automatically braked.
Shunting valve function:	To be able to move the pulled machine after detachment without the tractor, the shunting valve (H) must be operated. This reverses the trailer brake valve, enabling the air to flow from the brake cylinders. If the machine is attached once again, the release valve will automatically return to its initial position as the control knob jumps out. Now the machine is ready for braking again.

Brake Power Regulator





A—Brake Power Regulator B—Control Lever

The brake cylinder pressure on the sprayer is slightly higher than the brake pressure on the tractor (leading), which prevents the sprayer from closing in on the tractor during braking. To prevent the wheels from blocking, the brake pressure can be pre-set according to the weight of the machine with the control lever (B) on the brake power regulator (A). In the case of higher wheel loads, the wheels are able to absorb higher brake forces. By means of control lever (B) it is possible to set the brake power to zero load (not used), partial load (empty to halffull tank) of full load (full tank), thus aligning the brake power to the wheel load.

Shunting without Air Brakes Connected



A—Release Valve Control Knob

WZ290102249-UN-06OCT11

IMPORTANT: When travelling on public roads, the release valve control knob must always be in the out position.

When the machine is detached, it can be braked by pulling down the release valve control knob (A). Pushing the control knob upward will vent the brake system, enabling movement of the machine. On a detached machine, this procedure may be repeated up to 8 times before the pressure in the compressed air storage tank becomes too low to operate the brake system.

Compressed Air Storage Tank



A—Drain Valve

The compressed air storage tank is located at the rear of the machine behind the solution tank. In the bottom of the compressed air storage tank is a drain valve (A). Pushing the pin will drain any condensed water from the tank. This water must be removed daily to prevent corrosion, freezing and a reduced air capacity.

Chocks



WZ290102251-UN-06OCT11

A—Chocks

Machines with pneumatic braking system are provided with two chocks (A) that may be placed behind the wheels as an extra security for when the machine has been uncoupled. The chocks are located on the platform.

WZ00232,0000317-19-06OCT11

Pneumatic Braking System - Option from Model Year 2019



A—Supply Line (Red) B—Command Line (Yellow) C—Air Brake Filter D—Trailer Brake Valve E—Compressed-Air Storage Tank F—Drain Valve G—Test Connection H—Shunting Valve I—Brake Cylinders J—Relay Valve K—Trailer Brake Release Valve L—Load Sensing Valve

The crop sprayer may also be fitted with a 2-line (nonseparated) pneumatic braking system (optional). For this purpose, the tractor must be equipped with an air pressure system with an external connection.

When connecting the air pressure hoses to the tractor, first attach the command line (yellow coupling) and then the supply line (red coupling).

When disconnecting the air pressure hoses from the tractor, first detach the supply line (red coupling) and then the command line (yellow coupling).

Driving position:	From the tractor, compressed air is pressed to the trailer brake valve (D) via the supply line coupling (A). Via connections on the trailer brake valve, the compressed air flows to the air storage tank (E).
Brake position:	When operating the brake valve of the tractor, air is supplied to the trailer brake line (B) and to the trailer brake valve (D). As a result, this valve sends the compressed air to the load sensing valve (L) which automatically controls the braking force depending on the vehicle load. The relay valve (J) receives the input from the load sensing valve (L) and supplies air to the brake cylinders (I) from the air storage tank (E).
Release position:	When releasing the air from the trailer command line (B), the trailer brake valve (D) is reversed, so that the air pressure on the brake cylinders (I) is removed via the relay valve (J).

Function on loss or detachment of the trailer:	When releasing the air from the trailer supply line (A), the trailer brake valve (D) is reversed, so that the machine is automatically braked.
Shunting valve function:	To be able to move the pulled machine after detachment without the tractor, the shunting valve (H) must be operated. This reverses the trailer brake valve, enabling the air to flow from the brake cylinders. If the machine is attached once again, the release valve will automatically return to its initial
	position as the control knob jumps out. Now the machine is ready for braking again.

Brake Power Regulator



A—Brake Power Regulator

WZ290102683—UN—14DEC18

The brake cylinder pressure on the sprayer is slightly higher than the brake pressure on the tractor (leading), which prevents the sprayer from closing in on the tractor during braking. To prevent the wheels from blocking, the brake pressure is adjusted by the Load Sense Valve according to the weight of the machine. With higher wheel loads, the wheels are able to absorb higher brake forces.

Shunting without Air Brakes Connected



A—Release Valve Control Knob

WZ290102684—UN—14DEC18

IMPORTANT: When travelling on public roads, ensure the release valve control knob (A) is in the down position.

When the machine is detached, it can be braked by pulling down the release valve control knob (A). Pushing the control knob upward will vent the brake system, enabling movement of the machine. On a detached machine, this procedure may be repeated up to 8 times before the pressure in the compressed air storage tank becomes too low to operate the brake system.

Load Sense Valve



A—Load Sensing Valve

WZ290102685-UN-14DEC18

The Load Sensing Valve (A) provides automatic braking force control. The size of the force depends on the sprayer load on the suspended axle. The valve is located behind the compressed air storage tank.

Relay Valve



A—Relay Valve

WZ290102686—UN—14DEC18

The Relay Valve (A) rapidly increases or decreases the air pressure to shorten the response and pressure buildup times in the air braking system. The valve is on the front center of the axle.
Transport

Compressed Air Storage Tank



WZ290102250—UN—06OCT11

A—Drain Valve

The compressed air storage tank is at the rear of the machine behind the solution tank. On, the bottom of the compressed air storage tank is a drain valve (A). Pushing the pin up or sideways drains any condensed water from the tank. This water must be removed daily to prevent corrosion, freezing, and a reduced air capacity.

Chocks



A—Chocks

Machines with pneumatic braking system are provided with two chocks (A) that may be placed behind the wheels as an extra security for when the machine has been uncoupled. The chocks are located on the platform.

WZ00232,0000793-19-18DEC18

Beacon Light



A—Beacon Light

A beacon light is available as option and is located on the left of the center frame.

NOTE: Refer to the tractor Operator's Manual to operate the beacon light.

WZ00232,0000318-19-06OCT11

Hydraulic Pump Drive - Over Speed Protection



Hydraulic Pump Drive - Over Speed Protection

A—Over Speed Protection B—Cap C—Lock Nut

IMPORTANT: Ensure that oil is at operating temperature before commencing adjustment.

IMPORTANT: When using the Hydraulic Pump Drive or adjusting the over speed protection ensure the Solution Pump shaft speed does not exceed 540 rpm. The Solution Pump is at risk of damage above 540 rpm.

The tractor SCV is capable of delivering more hydraulic oil then is required for use by the hydraulic pump drive hence the over speed protection (A) for the solution pump. Delivering more oil with the SCV then that set by the **Over Speed Protection** will not alter the solution pumps rotation but will increase the oil temperature.

The factory adjusts the over speed protection to 540 rpm. This setting will cover a majority of tractor configurations, however it is recommended to check the setting and adjust as required. Use the display either on the **Sprayer - Main** page or the **Diagnostics - Sensor Status** to view the **Solution Pump Speed**.

For optimum use set the SCV to a higher setting and then reduce until the solution pump shaft speed starts to lower. The SCV is now delivering enough oil for the hydraulic pump drive to use and not additionally increasing the oil temperature.

To adjust the Over Speed Protection (A):

- 1. Remove the cap (B).
- 2.Loosen the lock nut (C) and with a hexagonal wrench adjust the over speed protect.
- 3.If the **Solution Pump Speed** is lower than 540 rpm, increase the adjustment until 540 rpm appears on the display. Decrease when above 540 rpm.

- 4. Tighten the lock nut (C) and replace the cap (B) when adjustment is complete.
- IMPORTANT: The SCV must be adjusted to a level lower than that of the Over Speed Protection.

WZ00232,0000559-19-31MAR15

Adjusting The Spray Boom Transport Position



Steel Cable First Boom Segment



Boom Rest



Transport Lock

A-Steel Cable with Connection Slots

- B—Boom Support Height Adjustment
- C—Support Rod on the Spray Boom
- D—Telescopic Transport Lock Parallelogram

The transport height of the spray boom and upward angle can be adjusted in order to prevent interference between the tractor cab and the spray boom during transport. The steel cables (A) (left and right) between the spray boom arms and the centre frame can be connected in three different slots, to allow a higher or lower transport position of the spray boom. When the spray boom is folded and supported by the boom support rolls, the steel cables may not be tensioned. Only during the boom folding action, the steel cable may be under tension. When the steel cable connection is changed also the position of the boom supports with rollers should be adjusted. This can be done by means of the retractable boom supports (B) which can be fixed into different slots and are secured with a nut and bolt.

CAUTION: Using a position lower than the factory setting, care must be exercised not to damage the sprayer components.

It could be necessary to adjust the position of the support rod (C) on the spray boom. The support rods are fixed to the spray boom arms with two brackets. The telescopic transport lock (D) of the parallelogram height adjustment can be fitted in different positions, to determine the rear height and angle of the spray boom arms when folded in. If the transport lock is free, the position of the hook can be adjusted and fixed with two nuts and bolts for each side.

WZ00232,0000319-19-07OCT11

WZ290102255

Spray Boom Alignment

WZ290102255—UN—07OCT11



WZ290101031-UN-20OCT00



WZ290101032—UN—20OCT00



WZ290102256-UN-07OCT11

A—Boom Stop between Center Frame and First Boom Segment B—Boom Stop between First and Second Boom Segment C—Spindle D—Boom Stops Obstacle Protection (Two Pieces)

- -Boom Stops Obstacle Protection (Two Pieces)
- E—Adjustable Rod End Obstacle Protection
- NOTE: After the first 8 hours of operation the spray boom alignment needs to be checked and if required adjusted and then every 50 hours thereafter.

The spray boom must be aligned both horizontally and vertically.

The center frame, first boom segment and second boom segment must be aligned.

The first boom segments (left and right) must be aligned to the center frame by adjusting the boom stops (A) between the center frame and the first boom segments.

The second boom segments (left and right) must be

aligned with the first boom segments by adjusting the boom stops (B). The spindle (C) in the folding mechanism between the first and second boom segment must be tightened to prevent play between the boom segments. Adjust by hand to make tight and then make a half turn with a spanner to secure. Improper adjustment will cause damage to brackets and hydraulic cylinder.

For sprayers with triple folding booms, the same adjustment has to be made for the third boom segment. The third boom segments (left and right) must be aligned with the second boom segments by adjusting the boom stops. The spindle in the folding mechanism between the second and third boom segment must be tightened to prevent play between the boom segments.

The boom breakaway system has to be aligned and tightened in both horizontal and vertical direction. The boom stops between the outer obstacle protection segment and the first part of the second boom segment need to be tightened, both in forward and rearward direction (D). The vertical alignment of the obstacle protection boom segment must be carried out with the adjustable rod end (E). If there is too much movement at the boom breakaway protection, tighten the two bolts at position (D)



F—Adjustable Connection Rod for Vertical Boom Alignment

• The vertical alignment of the left and right boom segments must be carried out with the adjustable connection rod (F) and the corresponding adjusting nut.

WZ00232,000031A-19-07OCT11

Adjusting the Center Frame



A—Guiding Pin Pendulum Arm B—Guiding Strip

There needs to be sufficient clearance between the guiding pin of the pendulum arm (A) and the guiding strip (B), when the boom is unfolded. The function of the guiding pin of the pendulum arm is to support and prevent the center frame from moving rearwards, when the boom is folded in, just before the boom lies on the supports. During this stage, the guiding pin will touch the guiding strip on the horizontal square guiding tube.

WZ00232,000031B-19-07OCT11

Balancing The Spray Boom



WZ290700169

WZ290700169—UN—14OCT10







A—Balancing Weight B—Boom Tilt Cylinder

- C—Piston Rod Connection
- **D—Hydraulic Cylinder Connection**
- E—Pendulum Arm
- F—Boom Tilt Switch

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, since serious damage may be caused to the spray boom and suspension.
- IMPORTANT: To avoid damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.
- NOTE: The compression springs may not be fitted to the boom suspension system to balance the spray boom.

To balance the spray boom, proceed as follows:

- Drive with the sprayer onto level ground and unfold the spray boom.
- Unlock the spray boom suspension (lock cylinder needs to be disengaged completely).
- Set the boom tilt in the center position (no bias) with the Multi-Function Control lever MFC. See Multi-Function Control Lever (MFC) - Control Layout and Boom Tilt Correction in the section Operation

of the Machine. In this position the spray boom must be perpendicular to the pendulum arm (E). If this is not the case, the boom tilt potentiometer should be calibrated. See Boom Tilt Calibration in the section Sprayer Control System.

For sprayer using **SCV Hydraulics** or **Selector Hydraulics** (via MFC), the tractor SCV must be used to position the boom tilt the center position "0".

- Check that the spray boom is level. If the spray boom leans to one side, adjust the piston length via the boom tilt switch (F). To level the boom, move the balancing weight (A) in the opposite direction on the spray boom. Tighten the balancing weight on the spray boom when the correct position has been found. When the boom is level the boom tilt potentiometer should be calibrated.
- With the boom tilt cylinder (B) in the center position, the pendulum arm (E) should be vertical and the boom should be level.

WZ00232,00004DD-19-03DEC13

Adjusting The Boom Suspension



A—Springs B—Swivel Arm C—Square Frame D—Holder E—Strip F—Disk

The boom suspension system has to be adjusted to the field conditions.

As delivered from the factory, the boom suspension is not fitted with springs. This is the recommended adjustment to work with the sprayer on flat fields.

For working on hilly fields (more than 5% slope) a special kit with two compression springs is delivered with the sprayer.

The two springs (A) need to be fitted between the swivel arm (B) and the square frame (C). Unscrew the M-12 bolts on the holders (D) at the outer ends of the square frame and remove the retaining strip (E). Put the spring (on both sides) between the disk (F) and the holder (D) and secure it with the strip (E) and bolt. With these

compression springs fitted into the boom suspension system, the spray boom will follow the slope better, without having to operate the boom tilt correction continuously.

OUCC002,0002EEA-19-18OCT10

Adjusting The Automatic Tracking System



WZ290102227-UN-14NOV11



WZ290102259

WZ290102259-UN-070CT11 Tracking Sensor Alignment

Straight Driving Cal.

- 1. Drive straight ahead with the tractor
- 2 Ensure that sprayer is following the track of the tractor
- If needed, use the manual 3. steering to make a correction. Then press the "CAL" button.
- 4.



WZ290401567-UN-210CT11

- A—Pivoting Arm R. -Support Sleeve
- C--Ball

D—Pivoting Arm Alignment (90° to the Drawbar Center)

NOTE: Ensure that the pivoting arm is aligned at 90° to the drawbar center (D).

After the crop sprayer has been connected (see section Coupling and Uncoupling of the Sprayer) the procedure below must be followed to adjust the automatic tracking system:

- Drive straight ahead with the tractor.
- Ensure that the sprayer is following the track of the • tractor.
- If required, use the manual steering button on the MFC to make a correction with electro-hydraulic system.
- Ensure the sprayer pin joints for the steering rod are at right angles to the sensor pivot point and the drawbar center. Adjust steering rod, if required to achieve this.
- In the Steering calibration screen on the tractor cab display (Machine Settings - CAL button [A] - Steering) press the CAL button to enter the new setting.

WZ00232,00004DE-19-03DEC13

Steered Axle - Stop Bolt Adjustment



WZ290201453

WZ290201453-UN-310CT12 Stop Bolt Adjustment



Stop Bolt Location

L—Stop Bolt Adjustment

X—Lock Nut

The steering angles are adjusted with the stop bolt for

the tire in use to prevent a possibility of interference with the machine. The amount of angle available for steering depends on the tire size and the track width. Use the charts below to check the stop bolts adjustment (check both stop bolts are adjusted to the same distance).

IMPORTANT: Always verify the clearance distance between the machine and the tire when adjusting.

IMPORTANT: 710/70R38 tire is for use only with the 944 and 952 Trailed Sprayers.

Stop Bolt Adjustment		
Adjustment ^a		
Lock Nut, 3 washers (24M7559)		
Lock Nut, 2 washers (24M7559)		
Lock Nut, washer (24M7559)		
Lock Nut only		
Bolt, 2 washers (24M7559)		
Bolt only		

^aAdjustment varies due to tire pressure, machine load, and the tire manufacture size differences.

	Steered Axle Track Widths				
	1.8 m (5 ft. 11 in.)	1.95 m (6 ft. 5 in.)	2.0 m (6 ft. 7 in.)	2.1 m (6 ft. 11 in.)	2.25 m (7 ft. 5 in.)
Tire Option	Angle Limit	Angle Limit	Angle Limit	Angle Limit	Angle Limit
VF380-90R46	19°	19°	19°	19°	19°
480/80R46	15°	19°	19°	15°	15°
520/85R42	15°	19°	19°	15°	15°
520/85R46	12°	12°	12°	10°	10°
620/70R38	14°	19°	19°	19°	19°
620/70R42	12°	19°	19°	19°	19°
710/70R38	10°	15°	17°	17°	17°

Steering Angles for Tire Size & Track Width

	Steered Axle Track Widths				
	1.8 m (5 ft. 11 in.)	1.95 m (6 ft. 5 in.)	2.0 m (6 ft. 7 in.)	2.1 m (6 ft. 11 in.)	2.25 m (7 ft. 5 in.)
Tire Option	Radius	Radius	Radius	Radius	Radius
VF380-90R46	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	9.6 m (31 ft. 6 in.)
480/80R46	9.6 m (31 ft. 6 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	9.6 m (31 ft. 6 in.)	9.6 m (31 ft. 6 in.)
520/85R42	9.6 m (31 ft. 6 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	9.6 m (31 ft. 6 in.)	9.6 m (31 ft. 6 in.)
520/85R46	11.8 m (38 ft. 8 in.)	11.8 m (38 ft. 8in.)	11.8 m (38 ft. 8in.)	14.2 m (46 ft. 7 in.)	14.2 m (46 ft. 7 in.)
620/70R38	10.1 m (33 ft. 2 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)
620/70R42	11.8 m (38 ft. 8 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)	7.5 m (24 ft. 7 in.)
710/70R38	14.2 m (46 ft. 7 in.)	9.6 m (31 ft. 6 in.)	8.5 m (27 ft. 11 in.)	8.5 m (27 ft. 11 in.)	8.5 m (27 ft. 11 in.)

Theoretical Turning Radius for Tire Size & Track Width

WZ00232,0000512-19-12DEC16

Machine Composition

Basic Machine

The basic machine comprises a steel frame and a polyethylene solution tank. The tank has a nominal content of 6200 liters for the M962 and M962i models, 5200 liters for the M952 and M952i models, and 4400 liters for the M944 and M944i models. The solution tank with a hinged lid, basket strainer, liquid level indicator, pressure agitation and internal tank rinsing system is mounted to the frame, along with a 620 liter rinse tank and a 18 liter hand wash tank.

Pump

The M900 and M900i series trailed sprayer has two piston diaphragm pumps with a capacity of 280 liters per minute each. Diaphragm pump 1 is the spraying pump and pump 2 is the auxiliary pump for agitation, rinse and chemical inductor, both pumps together are used to fill the tank. The pumps are on the drawbar which are driven either by the tractor PTO or by a hydraulic pump drive. The PTO shaft has a single wide angle coupling (1-3/8" with six splines). The PTO shaft has a separate operator's manual, supplied in a plastic bag attached to the PTO shaft.

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.

Drawbar

The drawbar is mounted to the front of the frame. The drawbar is available as fixed version. Different kinds of drawbar tow eyes can be fitted to the drawbars (see **Drawbar Tow Eyes** in the section entitled **Coupling and Uncoupling of the Sprayer**), to connect the sprayer to the different kinds of tractor draw hooks. The drawbar has an integrated hydraulic leg support which is operated by the tractor SCV.

Axle

The M900 and M900i series trailed sprayers can be equipped with different types of axles:

- fixed axle (10-bolts) for track width 1.80-2.10 m (with a maximum speed of 40 km/h)
- fixed axle (10-bolts) for track width 2.00 m (with a maximum speed of 40 km/h)
- fixed axle (10-bolts) for track width 1.95-2.25 m (with a maximum speed of 40 km/h)
- steered axle (10-bolts) for track width 1.80-2.10 m (with a maximum speed of 40 km/h)
- steered axle (10-bolts) for track width 2.00 m (with a maximum speed of 40 km/h)
- steered axle (10-bolts) for track width 1.95-2.25 m (with a maximum speed of 40 km/h)

The axles have drum brakes with an internal speed sensor. Hydraulic or pneumatic brake systems are available.

The axles are fitted to the frame with a double link connection. The axles are equipped with special polyurethane dampers.

Tires and Wheels

The trailed sprayers can be fitted with various row crop tires or flotation tires. The wheels and rims are welded together. Wheels and tires are available as 40 km/h version. For the M900 and M900i series high speed axle, the wheel connection has 10 bolts.

Although the tires and wheels are rated as 40 km/h, the maximum load the tires and wheels can carry at these speeds is limited. Therefore the axle load, tire pressure and load index of the tire determine the maximum speed (or maximum load).

Control System

The control system comprises the pressure regulator and

main shutoff

located on the left side of the machine and

a pressure gauge located on the front of the sprayer.

The control system comprises two pressure regulators and the remainder of the valves of the Solution Command System on the left side of the machine; the main shut-off valve is located on the 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 Control lever (MFC) and display (Implement Display 1100, GreenStar 2 1800 display or GreenStar 3 2630 display) fitted in the cab are connected to the spray rate control unit via the CAN Bus. The Implement Display 1100 is intended for the M900 only. The application rate control for M900 and M900i series is available with a pressure sensor and flow sensor. All these sensors are located 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 meters and a transport width of 2.55 meters. Triplefolding booms are available with working widths from 27 to 40 meters, and a transport width of 3.00 meters.

The spray boom has a hydraulic height adjustment by means of 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. Extra features available for the spray boom 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 and independent raising and lowering of the spray boom arms left and right (variable geometry).

The spray boom is fitted with stainless steel spray lines, sub-divided into a number of sections. Single or multiple

nozzle holders with various nozzles can be fitted to the spray line. The spray lines can be fitted with end caps or connections for the recirculation system.

WZ00232,00005D8-19-02JUN15



Functional Diagram — Manual System with Ring Line Circulation and Twin Diaphragm Pumps

40-3

3-

4-

9—Pressure Sensor	33—Rinse Connection for Closed Chemical Filling System
10—Flow Sensor	34—Fill Connection for Closed Chemical Filling System
11—Pressure Filter	35—Filling Hose with Strainer and Float
12—Transfer Valve with Hose Connection	36—Diaphragm Pump 1 (Spraying Pump)
13—Self Rinsing Pressure Filter Valve (Option)	37—Diaphragm Pump 2 (Auxiliary pump for Agitation, Rinse and
14—Rinsing Head in Filling Opening with Tenter	Chemical Inductor)
15—Shut-Off Valve (Rinsing Head in Fill Opening)	38—Filling Hose Connection with Shut-Off Valve
16—Injector Chemical Inductor	39—Non-Return Valve
17—Rotating Tank Rinsing Nozzle	40—Primary Pressure Regulator
18—Solution Tank	41—Suction Filter
19—Liquid Level Indicator (Solution Tank)	42—Electric Agitation Valve (Option)
20—Injector Non-Return Valve	43—Return Selection Valve (Tank/Pump)
21—Basket Strainer	44—Pressure Selection Valve
22—Hand Wash Tank	45—Protective Clothing Locker for Clean and Used Clothing
23—Drain Tap (Hand Wash Tank)	46—Injector Shut-Off Valve
24—Hydro Injectors for Agitation	47—Shut-Off Valve (Chemical Inductor Rinse/Flush)
25—Rinse Tank	48—Container Rinsing Head (Chemical Inductor)
26—Non-Return Valve (Rinse Tank)	49—Inductor Rotating Rinse Nozzle
27—Suction Selection Valve	50—Rinse Nozzle Shut-Off Valve
28—High Pressure Cleaner (Option)	51—Tenter for Chemical Inductor
29—Spray Rate Regulator (SRR)	52—Spray Gun for Chemical Inductor
30—Pressure Relief Valves (10 bar)	53—Pressure Line
31—External Pump Filling Connection with Shut-Off Valve	54—Suction Line
32—Rinse Tank Quick-Fill Connection	55—Return Line

WZ00232,0000496-19-29MAY15



Functional Diagram — Manual System with Pressure Circulation and Twin Diaphragm Pumps

2-

3 4

9—Master/Circulation Valve	34—Rinse Connection for Closed Chemical Filling System
10—Pressure Sensor	35—Fill Connection for Closed Chemical Filling System
11—Flow Sensor	36—Filling Hose with Strainer and Float
12—Pressure Filter	37—Diaphragm Pump 1 (Spraying Pump)
13—Transfer Valve with Hose Connection	38—Diaphragm Pump 2 (Auxiliary pump for Agitation, Rinse and
14—Self Rinsing Pressure Filter Valve (Option)	Chemical Inductor)
15-Rinsing Head in Filling Opening with Tenter	39—Filling Hose Connection with Shut-Off Valve
16—Shut-Off Valve (Rinsing Head in Fill Opening)	40—Non-Řeturn Valve
17—Injector Chemical Inductor	41—Primary Pressure Regulator
18—Rotating Tank Rinsing Nozzle	42—Suction Filter
19—Solution Tank	43—Electric Agitation Valve (Option)
20—Liquid Level Indicator (Solution Tank)	44—Return Selection Valve (Tank/Pump)
21—Injector Non-Return Valve	45—Pressure Selection Valve
22—Basket Strainer	46—Protective Clothing Locker for Clean and Used Clothing
23—Hand Wash Tank	47—Injector Shut-Off Valve
24—Drain Tap (Hand Wash Tank)	48—Shut-Off Valve (Chemical Inductor Rinse/Flush)
25—Hydro Injectors for Agitation	49—Container Rinsing Head (Chemical Inductor)
26—Rinse Tank	50—Inductor Rotating Rinse Nozzle
27—Non-Return Valve (Rinse Tank)	51—Rinse Nozzle Shut-Off Valve
28—Suction Selection Valve	52—Tenter for Chemical Inductor
29—High Pressure Cleaner (Option)	53—Spray Gun for Chemical Inductor
30—Spray Rate Regulator (SRR)	54—Pressure Line
31—Pressure Relief Valves (10 bar)	55—Suction Line
32—External Pump Filling Connection with Shut-Off Valve	56—Return Line
33—Rinse Tank Quick-Fill Connection	

WZ00232,0000498-19-29MAY15



Functional Diagram — Automated System with Ring Line Circulation and Twin Diaphragm Pumps

40-7

3-

4-

9—Pressure Sensor	35—Filling Hose with Strainer and Float
10—Flow Sensor	36—Diaphragm Pump 1 (Spraving Pump)
11—Pressure Filter	37—Diaphragm Pump 2 (Auxiliary pump for Agitation, Rinse and
12—Transfer Valve with Hose Connection	Chemical Inductor)
13—Self Rinsing Pressure Filter Valve (Option)	38—Filling Hose Connection with Shut-Off Valve
14—Rinsing Head in Filling Opening with Tenter	39—Non-Return Valve
15—Shut-Off Valve (Rinsing Head in Fill Opening)	40—Primary Pressure Regulator
16—Injector Chemical Inductor	41—Electric Tank/Pump Selector Valve
17—Rotating Tank Rinsing Nozzle	42—Suction Filter
18—Solution Tank	43—Electric Agitation Valve
19—Liquid Level Indicator (Solution Tank)	44—Electric Return Selection Valve (Tank/Pump)
20—Injector Non-Return Valve	45—Pressure Selection Valve
21—Basket Strainer	46—Protective Clothing Locker for Clean and Used Clothing
22—Hand Wash Tank	47—AutoDilute/Rinsing Pump
23—Drain Tap (Hand Wash Tank)	48—Non-Return Valve
24—Hydro Injectors for Agitation	49—Injector Shut-Off Valve
25—Rinse Tank	50—Shut-Off Valve (Chemical Inductor Rinse/Flush)
26—Non-Return Valve (Rinse Tank)	51—Container Rinsing Head (Chemical Inductor)
27—Suction Selection Valve	52—Inductor Rotating Rinse Nozzle
28—High Pressure Cleaner (Option)	53—Rinse Nozzle Shut-Off Valve
29—Spray Rate Regulator (SRR)	54—Tenter for Chemical Inductor
30—Pressure Relief Valves (10 bar)	55—Spray Gun for Chemical Inductor
31—External Pump Filling Connection with Shut-Off Valve	56—Pressure Line
32—Rinse Tank Quick-Fill Connection	57—Suction Line
33—Rinse Connection for Closed Chemical Filling System	58—Return Line

33—Rinse Connection for Closed Chemical Filling System
34—Fill Connection for Closed Chemical Filling System

WZ00232,0000497-19-29MAY15



Functional Diagram — Automated System with Pressure Circulation and Twin Diaphragm **Pumps**

2-

3 4

9—Master/Circulation Valve	35—Fill Connection for Closed Chemical Filling System
10—Pressure Sensor	36—Filling Hose with Strainer and Float
11—Flow Sensor	37—Diaphragm Pump 1 (Spraying Pump)
12—Pressure Filter	38—Diaphragm Pump 2 (Auxiliary pump for Agitation, Rinse and
13—Transfer Valve with Hose Connection	Chemical Inductor)
14—Self Rinsing Pressure Filter Valve (Option)	39—Filling Hose Connection with Shut-Off Valve
15—Rinsing Head in Filling Opening with Tenter	40—Non-Return Valve
16—Shut-Off Valve (Rinsing Head in Fill Opening)	41—Primary Pressure Regulator
17—Injector Chemical Inductor	42—Electric Tank/Pump Selector Valve
18—Rotating Tank Rinsing Nozzle	43—Suction Filter
19—Solution Tank	44—Electric Agitation Valve
20—Liquid Level Indicator (Solution Tank)	45—Electric Return Selection Valve (Tank/Pump)
21—Injector Non-Return Valve	46—Pressure Selection Valve
22—Basket Strainer	47—Protective Clothing Locker for Clean and Used Clothing
23—Hand Wash Tank	48—AutoDilute/Rinsing Pump
24—Drain Tap (Hand Wash Tank)	49—Non-Return Valve
25—Hydro Injectors for Agitation	50—Injector Shut-Off Valve
26—Rinse Tank	51—Shut-Off Valve (Chemical Inductor Rinse/Flush)
27—Non-Return Valve (Rinse Tank)	52—Container Rinsing Head (Chemical Inductor)
28—Suction Selection Valve	53—Inductor Rotating Rinse Nozzle
29—High Pressure Cleaner (Option)	54—Rinse Nozzle Shut-Off Valve
30—Spray Rate Regulator (SRR)	55—Tenter for Chemical Inductor
31—Pressure Relief Valves (10 bar)	56—Spray Gun for Chemical Inductor
32—External Pump Filling Connection with Shut-Off Valve	57—Pressure Line
33—Rinse Tank Quick-Fill Connection	58—Suction Line
34—Rinse Connection for Closed Chemical Filling System	59—Return Line
	WZ00232,0000499-19-29MAY15

Pressure Circulation Option



Pressure Circulation Diagram

A—Air from Reservoir Tank B—Nozzle with Pneumatic Opening

C—Air Valve Manifold

D—Circulation Line

E-Master/Circulation Valve,

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

WZ290201427-UN-19FEB08

F—Feed Line G—Pressure Sensor H—Solution Tank I—Flow Meter

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.

WZ00232,0000162-19-06NOV14

Avoid Contact with Chemicals, Including Pesticides





TS272-UN-23AUG88

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

1. When operating in an environment where harmful

chemicals are present, wear a long-sleeved shirt, long-legged trousers, shoes, and socks.

- 2. If chemical label requires respiratory protection, wear an appropriate respirator in the cab.
- 3. Wear personal protective equipment as required by the chemical label 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.
- 4. Before re-entering the cab, remove 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.

WZ00232,00003F0-19-06NOV12

Chemical in Use



Chemical in use data sheet Container

A—Container for Chemical Data Sheets

IMPORTANT: Always keep the data sheet(s) of the chemical in use current. The data sheets content must reflect the contents of the solution tank. Chemical data sheets NOT IN USE must not be placed in the container.

To display the name of chemical in use, insert chemical data sheet(s) into the container affixed to the front of the sprayer platform.

WZ00232,00003CC-19-29OCT12

Components of the Solution System—Overview



WZ290102402

Overview of Manual Solution System - Twin Pumps

WZ290102402-UN-18NOV13

- 1—Diaphragm Pump 1 (Spraying Pump) 2—Diaphragm Pump 2 (Auxiliary pump for Agitation, Rinse and
- Chemical Inductor)
- A—Primary Pressure Regulator Valve (10 bar) B—Spray Rate Regulator (SRR) C—Hand Wash Tank 20 L

- D—Injector Shut-Off Valve E—Electric Agitation Valve (Option)
- F—Return Selection Valve (Tank/Pump)
- G—Ecomatic Rinse Connection H—Ecomatic Suction Connection with Shut-Off Valve
- I-Inductor Cover Rinse Nozzle Shut-Off
- J—Pressure Relief Valve (10 bar)

The Operator's Station for the Solution System is located on the front left of the machine.

- K—Pressure Selection Valve
- L—Transfer Connection Shut-Off Valve
- **M—Solution Tank Transfer Connection**
- N—Suction Selection Valve O—Suction Filter
- P-Rinse Tank Fill Connection with Shut-Off Valve
- Q—External (Hydrant) Filling Connection with Shut-Off Valve R—Filling Connection with Shut-Off Valve
- S—Tap Hand Wash Tank
- T—Pressure Filter with Self Rinsing Option U—Flushing Nozzle Shut-Off
- V—Chemical Inductor
- W—Spray Gun for Chemical Inductor



WZ290102403

Overview of Automated Solution System - Twin Pumps

WZ290102403-UN-18NOV13

- 1—Diaphragm Pump 1 (Spraying Pump)
- 2—Diaphragm Pump 2 (Auxiliary pump for Agitation, Rinse and Chemical Inductor)
- A—Primary Pressure Regulator Valve (10 bar)

- B—Spray Rate Regulator (SRR) C—Hand Wash Tank 20 L D—Injector Shut-Off Valve E—Electric Agitation Valve (Option)
- F—Electric Return Selection Valve (Tank/Pump) G—Ecomatic Rinse Connection
- H-Ecomatic Suction Connection with Shut-Off Valve
- I-Inductor Cover Rinse Nozzle Shut-Off
- J—Pressure Relief Valve (10 bar)
- K—Pressure Selection Valve

L—Transfer Connection Shut-Off Valve **M—Solution Tank Transfer Connection N—Suction Selection Valve** O—Suction Filter P—Rinse Tank Fill Connection with Shut-Off Valve Q—External (Hydrant) Filling Connection with Shut-Off Valve R—Filling Connection with Shut-Off Valve S—Tap - Hand Wash Tank T—Pressure Filter with Self Rinsing Option U—Flushing Nozzle Shut-Off V—Chemical Inductor W—Spray Gun for Chemical Inductor X—Filling Pump Select Switch - External Pump

WZ00232,000049A-19-27NOV13

Solution System Panel - AutoFill Switch (Option)



A-Select Filling Pump - Automatic Filling

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

IMPORTANT: Only add chemical just before field use and not before. Follow the chemical manufacturer's instructions for mixing the spray solution to obtain the desired application rate and effect.

- NOTE: Switches with an OFF position (indicated with a "**O**") should be returned to the OFF position after use.
- 1. In Job Settings softkey [G] select Tank Filling [A]. Set the **Desired Tank Content** in liters before filling commences.
- 2. Operate engine at low idle.

CAUTION: Filling valve of solution tank fill connection can contain chemical solution which may be hazardous to personal health. Care should used when removing the fill connection cap.

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

NOTE: To aid filling set the agitation ON, this will remove the air from the system to bring the pumps up to full capacity.

- 3. Open lock levers and remove fill connection cap.
- 4. Connect external fill hose to filling adapter and close lock levers.
- 5. Set filling pump switch (A) on the Solution System Panel to ON . The electric valves in the system configure to allow the liquid to enter the solution tank.

- 6. Observe the solution tank level indicator (if the indicator does not move within 20 seconds, switch ON the agitation until indicator moves and then switch OFF agitation, if required). When the desired tank volume has been reached, set the filling pump switch (A) to OFF (0 on the bottom of the switch). The electric valves return to their previous state of operation.
- 7. Close external fill hose supply.
- 8. Open lock levers and disconnect external fill hose from filling adapter carefully.
- 9. Refit fill connection cap and Close lock levers.

To add chemicals to the solution tank via the inductor. see Chemical Inductor in this Section.

WZ00232,00004B0-19-02DEC13

Solution Tank



W7290102405-UN-21NOV13

A-Ladder **B**—Filling Platform

The machine is fitted with a polyethylene solution tank with a nominal tank volume of 6200 L for the M962 and M962i, 5200 L for the M952 and M952i, and 4400 L for the M944 and 944i. The maximum tank volume is at least 5% larger than the nominal volume of 6200 L, 5200 L or 4400 L. This extra volume is required for possible foaming. Allow for this when filling the tank, i.e. do not fill the tank with more than the nominal volume.

The tank is mounted on the frame and is fully enclosed in supporting brackets at the sides and front. The filling opening can be reached via the ladder (A) on the front of the machine, up the steps to the filling platform (B). When driving with the sprayer, the ladder should always be raised and locked, for safety and to avoid damage.

NOTE: Due to the production process (special moulding procedure), the maximum tank volume may vary. the nominal volume + 5% will always be maintained.

WZ00232,00005EA-19-02JUN15

Filling Opening



CAUTION: You must not enter the tank for cleaning or repair!





WZ290102267

WZ290102267-UN-14NOV11

A—Basket Strainer **B**—Additional Vent C—Hinged Tank Lid (Closed)

The raised filling opening has a diameter of 40 cm and has a hinged tank lid with a vent and a basket strainer (A). The cover can be opened by turning it in the direction of the OPEN arrow and then pulling it up. The cover is closed by pressing down the cover and then turning in the direction of the CLOSE arrow. An additional tank vent (B) is fitted near the tank lid for

sufficient ventilation when filling the tank at high capacity. The tank lid (C) on all models is integrated into the tank shape.

WZ00232,0000342-19-14OCT11

Liquid Level Indicator (Solution Tank)



A-Liquid Level Indicator

WZ290102268-UN-14OCT11

The level of liquid in the solution tank is measured by floats fitted centrally in the tank. The floats are attached with a cable to a white ball located inside the level indicator tubes. The tank contents are read on the indicator on the front left of the solution tank. The level indicator tubes (A) are graduated in 10 L intervals 50-100 L. Thereafter in 50 L intervals 100-1000 L and then in 100 L intervals for the remaining tank content.

Liquid Level Indicator Ranges in Liters R944i R952i R962i 0-2000 0-2000 0-2400 1800—4400 1600—5200 2000-6200

WZ00232.0000579-19-06JAN15

Digital Tank Level Indicator



A—Tank level sensor

WZ290102269—UN—14OCT11

A tank pressure sensor fitted in the bottom of the tank makes it possible to read the actual tank volume accurately in the cab display. The tank pressure sensor is a very sensitive electronic component and must not be struck or cleaned with high pressure, as the sensor could be damaged.

WZ00232,00004B3-19-21NOV13

Agitation



A—Double and Single Agitation Nozzles

Effective agitation is very important in gaining a homogenous spraying liquid, particularly for suspensions and emulsions. Inadequate agitation can result in crop damage, inadequate effect of the chemical and blockage of the machine.

The agitation liquid is tapped off before the spray pressure regulator and guided at increased pressure through double nozzle. This 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.** tab in **Job Settings**. For further information on agitation control, see **Agitation, Working Lights and F-Switch** in **Sprayer Control System** section in this manual.

WZ00232,00004B4-19-21NOV13

Chemical Inductor



290102419

WZ290102419—UN—21NOV13





WZ290102273-UN-14OCT11



WZ290102406—UN—21NOV13

A—Chemical Inductor with Cover

B—Locking Device

C—Inductor Rotating Rinse Nozzle (Shut-Off valve Located on the Cover)

- D—Flushing Nozzle Shut-Off Valve (Closed Position)
- E—Chemical Inductor Injector
- F-Rinsing Head with Tenter Frame
- G—Flushing and Bridging Nozzle
- H—Spray Gun
- I—Handle
- J—Mounting Bracket

A 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.

This system makes it possible to work from ground level 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 system (A) comprises an inductor hopper with cover with a capacity of approximately 50 liters. The hopper contains flushing nozzles (G), a container rotating rinsing head (F) with tenter frame for flexible containers rinsing such as bags and sacks and a sieve plate for preparing powdered (solid) chemicals into solution.

The inductor hopper is set to the working position by pushing the inductor slightly forward and unlocking the transport device (press catch (B) down) 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 inductor chemical injector (E) allows the content of the hopper to enter the solution tank.

To supply rinse water to the flush nozzles, the **Suction Selection Valve** needs to be set to **Suction of Rinse Water**. Open flushing nozzle shutoff valve (D) in order to let water into the inductor via the flushing nozzles (G) to prepare a solution and dilute the crop protection chemicals. The flushing nozzles (G) will also rinse clean the inductor walls. Close the inductor cover and open the shut-off valve (on inductor cover) for the inductor rotating rinse nozzle (C) to completely clean the inductor. Close all shut-off valves when finished.

IMPORTANT: Before using ensure the Suction Selection Valve has been set to Suction of Rinse Water. Close the Solution Tank Filling Opening Lid.

Operate only with the cover closed and close all manual shut-off valves for flushing nozzles when finished.

The inductor chemical injector (E) is fitted in the raised filling opening of the solution tank, to suck up the dissolved chemicals from the inductor hopper and convey them into the tank via the basket strainer.

The rinsing head (F) is controlled by the chemical inductor and rinsing head switch valve in the supply line which is operated by pressing down the metal ring around the rinsing head. The valve will automatically spring close again when this ring is released. The rinsing system can be simply used by placing the container over the rinsing head and onto the metal ring. Hold the container firmly and press down to open the valve so that the rinsing head flushes the inside of the container clean. This takes around 30 seconds. Raise the container and the rinse water will automatically stop.

The spray gun (H) can be used for rinsing the interior of the chemical inductor. The spray gun can only be operated when the chemical inductor is activated. To operate the spray gun, remove from the mounting bracket (J) and squeeze the handle (I) to activate.

Rinsing Empty Containers



WZ290102420-UN-29NOV13

The rotating rinsing head (F) has a shut-off valve in the supply line which is operated by pressing down the metal ring around the rinsing head. The shut-off valve will automatically spring close again when this ring is released. The rinsing system can be simply used by placing a container, for example, over the rinsing head onto the metal ring. Press the container down to open the shut-off valve so that the rinsing head flushes the inside of the container clean. The shut-off valve will automatically close when the (clean) container is

released. A frame is available to hold empty bags etc. open while they are being flushed clean.

WZ00232,000049D-19-19DEC16

Primary Pressure Regulator



-Adjusting Screw **B**—Pressure Regulator

WZ290102407—UN—21NOV13

The liquid is displaced from the spraving pump to a primary pressure regulator (B) which ensures that pressure higher than the set spraying pressure is always available for a number of functions. This pressure regulator is factory set at 10 bar. It can be changed by turning the adjusting screw (A). Tightening the adjusting screw increases the pressure, while loosening the adjusting screw reduces the pressure. It is not recommended to adjust the regulator higher than 10 bar.

WZ00232,00004B1-19-21NOV13

under higher pressure to the agitator injectors (C), to the tank rinsing heads (B) or to the chemical inductor (A), or pressureless return to solution tank (for filling) (D). The position of the arrow on the handle of the pressure selection valve indicates the direction towards which the liquid is displaced (see illustration).

WZ00232,00004C0-19-28NOV13

Return Selection Valve



A-Return Selection Valve **B**—Return Flow to Tank C-Return Flow to Suction Side of the Pump

The **Return Selection Valve** is located at the front side of the operator's station. This valve determines the return flow direction of the pressure regulator. When valve (A) is set in position (B), the liquid returns into the tank. When valve (A) is set in position (C), the liquid returns to the suction side of the pump.

WZ00232,00004C1-19-28NOV13

Pressure Selection Valve



A—Chemical Inductor

WZ290102433-UN-28NOV13

B—Tank Rinsing -Agitation (and spraying) C-D-Pressureless Return to Solution Tank

The pressure line of the primary pressure regulator is connected to the pressure selection valve, the return line is connected to the spray pressure regulator. All important functions can be operated using the pressure selection valve . Depending on the position of this pressure selection valve, the liquid will be displaced

Pressure and Flow Measurement



WZ290102504-UN-19MAY15



WZ290102480-UN-28JUL15

A—Digital Pressure Sensor B—Flow Sensor

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

WZ00232,00005DC-19-29MAY15

Pressure Filter



A—Pressure Filter B—Filter Cup C—Drain

IMPORTANT: Clean filter daily.

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.

A 50 mesh filter is fitted as standard. This filter has a mesh width of 280 micron (0.28 mm) and is suitable for flat fan nozzles of the 02 type (or comparable sizes) and larger. A finer 80 mesh filter can be fitted for smaller nozzles. This filter has a mesh width of 180 micron (0.18 mm). If the machine is equipped with either the pressure circulation system or the ring line circulation system, there is a non-return check valve mounted in the return line.

The filter must be flushed and cleaned regularly after each use (see also the safety and rinsing guidelines from the chemical manufacturer). This can be done simply by unscrewing the filter cup (B) and removing the filter element out of the cup. Regular cleaning and draining the filter with the drain valve will prevent silting up which could damage the filter.

Refer to **Filter Cleaning** in **System Rinse** in this section.

NOTE: Refer to recommendation on the label of the chemical product used for cleaning and operator safety.

WZ00232,00004B8-19-27NOV13

Electrical Boom Section Valves



WZ290102081—UN—29JAN08



Pneumatic Valves - Pressure Circulation System

A—Electrical Boom Section Valves B—Retaining Clip

Fluid is transported to the left and right spray boom segments from the pressure filter. Using the boom section valves (A), between 6 and 13 sections can be operated, dependent on the version. The **Sprayer Control System** is capable of controlling up to 15 boom sections (L7-L6-L5-L4-L3-L2-L1-C-R1-R2-R3-R4-R5-R6-R7). If the machine is equipped with the ring line

circulation system, the sections are shut on/off by electrically operated two-way ball valves integrated in the spray boom. If the machine is equipped with the pressure circulation system, the sections are shut on/off by electrically operated two-way pneumatic valves.

In the event of section valve failure the electric motor can be removed by removing the retaining clip. The valve can be manually operated with a pair of pliers.

For further details refer to Sprayer - Main and Spray Boom Sections Enable and Disable in the Sprayer Control System section and Operating IBS in Operation of the Machine section.

WZ00232,00004B9-19-21NOV13

Hand Washing Tank



A—Hand Washing Tank B—Filling Opening with Cap C—Drain Tap

CAUTION: Fill only with clean water from the main water supply, this water is intended for washing and not for drinking.

There is a separate 20 liter hand washing tank (A) with tap (C) on the left-hand side of the machine, for personal hygiene and protection.

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

WZ00232,00004BA-19-22NOV13

Rinse Water Tank



VZ290102410

WZ290102410-UN-22NOV13





WZ290102412—UN—22NOV13 A—620 L Rinse Water Tank

B-Rinse Water Tank Fill Connection

C—Rinse Water Tank Level Indicator

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

Rinse water tank (A) is located on the front right of the machine, it provides a supply of clean rinse water for infield cleaning.

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

The tank is filled via the rinse tank fill connection (B) or via a filling cap situated on top of the tank. An overflow for the tank is also fitted.

The Suction Selection Valve of the suction unit must be set to Suction from Rinse Water Tank.

The Return Selection Valve (Manual or Electrical) is used to determine whether the returned liquid from the spraving pump is pumped to the solution tank - Return Flow to Tank - or back to the suction side of the pump -**Return Flow to Suction Side of the Pump** (circulation). The electric version of the selection valve

automatically switches between the two outputs as required by the software.

The rinse water tank level indicator (C) is located also on the front right of the machine and is graduated in 50 L intervals.

Dilution of Residual Liquids (with Empty Solution Tank)

The following procedure provides important information about dilution of the residual spraying liquid and cleaning of the complete sprayer, it covers:

- Steps which need to 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 available water of the rinse tank to clean the sprayer

IMPORTANT:

Pay attention to the following points:

- Crop protection chemicals and spray solutions which adhere to the tank walls, hoses and spray lines need to be cleaned more intensively with cleaning agents and require longer rinsing.
- Cleaning agents can be added to the rinse tank at the beginning of the cleaning procedure below. (Also see Cleaning the Machine in section Working with the Machine).
- The more rinse water is used, the better the residual spray liquids will be diluted.
- It is recommended to perform the cleaning procedure twice if the machine is strongly polluted (also check the instructions of the chemical products whether any specific cleaning method needs to be considered).

Dilution of Residual Liquids and Cleaning **Procedures**



WZ290102425-UN-27NOV13



WZ290102426-UN-27NOV13





A—Return Selection Valve

- B-Return Flow to Suction Side of the Pump
- C—Master Valve Switch
- **D—Suction Selection Valve**
- E-Return Flow to Tank

- F—Pressure Selection Valve G—IBS Reset Button I—Suction from Rinse Water Tank II—Suction of Solution Tank 1—Chemical Inductor
- 2—Agitation
- 3—Pressureless Return to Solution Tank
- 4—Tank Rinsing Nozzles

CAUTION: Please refer to the label of chemical product used for recommendation on cleaning and operator safety.

IMPORTANT: This is a manual procedure for dilution of residual liquids. For sprayers with AutoDilute refer to AutoDilute in this section.

In order to avoid draining undiluted residues, the residual liquid must be diluted with water from the rinse tank and then sprayed onto the field.

The high level view of the dilution is to use 600 liters of rinse water in five steps of 200-100-100-100 liters. Each step will be drawn in from the rinse tank and then sprayed out the boom. Spraying the machine empty between steps helps dilute the second pump lines. The M900 second pump does not spray, it only recirculates inside the sprayer. Therefore the procedure that follows needs care to dilute this area and to spray the residual out.

The following conditions must be met to perform the dilution of residual spray liquids procedure:

- Spray out the solution in the solution tank completely without agitation and with the Return Selection Valve (A) in the position to the Suction Side Of The Pump (B) (circulation).
- Ensure that the rinse water tank is full of rinse water (620 Litres).
- Then switch OFF the Solution Pump.
- Check all boom sections are enabled.
- Close the **Master valve** with switch (C) on the Multi-Function Control lever.

NOTE:

• On the M900 and M900i machines with electric agitation ON/OFF the Auto Agitation Stop must be disabled, see Machine Settings, Tank tab.

Dilution of Residual Spray Liquids

Follow steps 1 to 19 to completely clean the sprayer internally.

- Set the Suction Selection Valve (3" Banjo valve) to Suction of Rinse Water. The pumps can draw water from the rinse tank
- 2. For a Manual solution system set the Pressure Selection Valve to Agitation and the Return Selection Valve to Return Flow to the Tank. For sprayers with Electric Agitation set the Pressure

Selection Valve to Agitation and set Agitation ON with tractor cab display.

- On the display go to Job Settings [G] then to System Rinse [D] and select Machine Rinsing. See System Rinse later in this section for more information.
- 4. Engage the Solution Pump at 300 RPM.
- 5. Set the **Suction Selection Valve** (3" Banjo valve) to **Suction of Rinse Water**. The pumps can draw water from the rinse water tank.
- 6. Draw **50 litres** of rinse water. Note for steps **16-17-18 and 19** draw **100 litres** of rinse water.
- 7. Press **Start** on the **Machine Rinsing** screen on the display. This will close the circulation valve located on the centre frame of the boom.
- 8. Increase the pressure by pressing the UP arrow button in **Machine Rinsing** on the display until the **Pressure Relief Valve** opens. Do not exceed 12 bars system pressure. Decrease the pressure quickly after the **Pressure Relief Valve** has opened in order to close it again. This cleans the line between the valve and the solution tank.
- For a Manual solution system set the Return Selection Valve at the operator station to the Suction Side of the Pump. For sprayers with Electric Agitation set the Agitation OFF with tractor cab display.
- 10. Then move the **Pressure Selection Valve** to **Pressureless Tank Filling** for 5 seconds. The pressureless filling hose (short hose) is rinsed with rinse water.
- 11. Place the **Pressure Selection Valve** on **Chemical Inductor**. This is a one time operation in this process
 - a. Fill inductor hopper for 8 seconds.
 - b. Use the **Spray Gun** for 5 seconds.
 - c. Use the Container Rinsing Head for 2 seconds.
 - d. Use the **Inductor Rotating Rinse Nozzle** in the cover for 2 seconds.
 - e. Empty the Chemical Inductor using the Chemical Inductor Injector.
- 12. Move the Suction Selection Valve to Suction of Solution Tank and set the Pressure Selection Valve to Tank Rinsing Nozzles. The rinsing of the tank walls begins.
- 13. Allow tank rinsing to continue to suit customer preferences. The time for this is highly dependent on what solution is in the sprayer. This step creates additional cleaning time of the tank walls.
- 14. Place the **Pressure Selection Valve** on **Chemical Inductor**.
- 15. Spray out the residual spray liquid on to the field using the **Master Valve Switch** located on the MFC. Spray until the spray pressure drops under 0.3 bar to remove as much liquid as possible from the sprayer. Close the Master Valve.

- 16. Repeat steps 1 to 15 to spray out the residual spray liquid on to the field. Steps 10 and 11 are not required anymore in this procedure.
- 17. Repeat steps 1 to 15 to spray out the residual spray liquid on to the field. Steps 10 and 11 are not required anymore in this procedure.
- 18. Repeat steps 1 to 15 to spray out the residual spray liquid on to the field. Steps 10 and 11 are not required anymore in this procedure.
- 19. Repeat steps 1 to 15 to spray out the residual spray liquid on to the field. Steps 10 and 11 are not required anymore in this procedure.



- A—System Rinse (softkey [D]) B-Select Rinse Program - Machine Rinsing
- C—On Screen Instructions
- **D**—Electric Agitation Button Switch Off
- E-Increase Regulator Pressure
- F—Decrease Regulator Pressure
- G—Start Button
- H-Cancel Button Returns The Master Valve to Original Position

For other types of cleaning of the machine see System Rinse (Filter Cleaning and Machine Rinsing) and System Rinse with AutoDilute (AutoDilute, Continuous Dilution, Filter Cleaning and Machine Rinsing) in this section

Preparing Small Amounts of Spraying Liquid on the Field



WZ290102428-UN-28NOV13



WZ290102429-UN-28NOV13

A—Suction Selection Valve **B**—Pressure Selection Valve

- C—Return Selection Valve
- D—Return Flow to Tank

E-Return Flow to Suction Side of the Pump

If it becomes apparent during spraying that there is not enough spraying liquid in the tank, an extra amount of spraying liquid can be prepared using the rinse tank.

- Set the Suction Selection Valve (A) to suction from Rinse Water tank, set the Return Selection Valve to return flow to suction side of the **Pump** (circulation) (E) and set the Pressure Selection Valve (B) to Pressureless Return To Solution Tank.
- Run the pump at idle speed. The spraying tank will now be (re-)filled with water from the rinse tank.
- Now add a measured amount of chemicals to the tank. Pay attention to the correct concentration! The empty packaging must be cleaned with the rinse head in the chemical inductor or with the rinse head in the filling opening.

Cleaning the Machine While the Tank is Empty or Full

NOTE: Please refer to recommendation on label of chemical product used for cleaning and operator safety.

Rinsing of the machine with an empty tank must be carried out as for dilution of the residual liquids (see Dilution of Residual Liquids and Cleaning **Procedures** in this section). The rinsing water can be drained and collected via the drain valve, as described in Suction Unit in this section, or preferably sprayed out over the field.

If the tank is still partially filled, the machine can be cleaned as follows (for example upon interruption of the spraving work).

Suction Selection Valve (A) to suction from Rinse Water tank, set the Return Selection Valve to return flow to suction side of the Pump (circulation) (E) and set the Pressure Selection Valve (B) to Chemical Inductor in order to close it. This prevents clean water from entering the solution tank and therefore diluting the spraying liquid, while also preventing wastage of clean water.

• Turn on the pump at low speed and open the main shut-off valve (and boom section valves) while driving so that the complete pressure hoses, spraying hoses and nozzles are flushed. This prevents deposits in the hoses, which might result in blocked nozzles. Check that the chemical mix in the solution tank can be left without it settling out or decomposing. (See chemical manufacturer's guidelines on label).

Rinsing the Empty Packaging

If the filling water is not externally sucked in via the pump, the empty packaging must be rinsed with clean water from the rinse tank. This can be done using the rinse head in filling opening or in the chemical inductor.

• Set Suction Selection Valve (A) to suction from Rinse Water tank, set the Return Selection Valve to return flow to suction side of the Pump (circulation) (E) and set the Pressure Selection Valve (B) to Chemical Inductor. Have the pump run on idle speed, so that the rinse tank does not empty too quickly.

External Cleaning of the Machine

CAUTION: Before cleaning, set the Suction Selection Valve (A) to suction from Rinse Water Tank and rinse spray lines with clean water.

IMPORTANT: Use "Machine Rinsing" by pressing "Start" in the "System Rinse" screen on the display for "Job Settings" when using the wash brush. If electric agitation is fitted to the machine select "Agitation" to OFF. This operation stops rinse water returning to the solution tank which will dilute the contents.



A—Quick Release Connector B—Ball Valve C—Washing Brush

External cleaning of the machine must take place in the field to avoid discharge of crop protection chemicals into the mains water network or surface water. To wash the sprayer in the field, a spray nozzle with hose reel can be mounted as an accessory connected to connection (A). A brush (C) can be connected to quick release

connector (A) (see also Hose Reel with Washing Brush and Spray Nozzle in section Accessories).



- A—System Rinse (softkey [D])
- B—Select Rinse Program Machine Rinsing C—On Screen Instructions
- D—Electric Agitation Button Switch Off
- E—Increase Regulator Pressure
- F—Decrease Regulator Pressure
- G—Start Button

H—Cancel Button - Returns The Master Valve to Original Position

- IMPORTANT: Use "Machine Rinsing" by pressing "Start" in the "System Rinse" screen on the display for "Job Settings" when using the wash brush. If electric agitation is fitted to the machine select "Agitation" to OFF. This operation stops rinse water returning to the solution tank which will dilute the contents.
- IMPORTANT: Use the increase and decrease regulator pressure buttons in "Machine Rinsing" to adjust the pressure for use of the hose reel and wash brush.

Internal Cleaning of the Tank



A—Rotating Tank Rinsing Nozzle

Two tank rinsing nozzles (A) have been fitted in the tank for internal cleaning of the solution tank. These allow for internal rinsing of the tank using clean water from the rinse tank. See **System Rinsing** in this section.

WZ00232,0000662-19-19DEC16

Solution Tank Rinsing Nozzles



A—Upper Rinsing Nozzles

Two tank rinsing nozzles (A) have been fitted in the tank at two levels for internal cleaning of the solution tank. These allow for internal rinsing of the tank using clean water from the rinse tank.

WZ00232,0000663-19-19DEC16

Solution Tank Rinsing

Refer to "System Rinse" in the "Operation of the Machine" section.

WZ00232,000034F-19-17OCT11

Electrical Operation Group

The electrical operation group comprises a pressure regulator, main shut-off valve, boom section valves, Multi-Function Control lever **MFC** with tractor cab display and also electric valves as part of the Solution System. The return liquid from the primary pressure regulator is displaced to the spray pressure regulator via a pressure hose. The pressure regulator deposits the superfluous spray liquid back into the solution tank, pressureless. On opening the main and boom section valves, the liquid is displaced from the pressure regulator via the pressure filter on the left front side of the machine to the spray nozzles, at the set spraying pressure.

WZ00232,00004A0-19-22NOV13

Fuses

Fuses:

F11 너 풍 54 위·····	+12V F1 SENSORS 5A
℠ [₩]	EPM F2 BASE 5A
	EPM F3 SCS 5A
F14 // 🔂 📑	
F15 t	BOOM F5 TRAC 5A
F16	J → ^{30A} ^{F6} 5A
F17 L1-L5 +	F7
F18 15A R1-R5	F8
F19 C-L6/7	F9
F20 15A M+	F10 WZW16006

WZ290201485

WZ290201485—UN—07JAN15



WZ290102494—UN—28JAN15

The fuse box (A) is on the right side of the machine, under the access panel by the Rinse Water Tank.

	Fuse Layout		
Fuse	Rating	Function	
F1	5 amp	Power supply (30 A power supply) for sensors having a supply voltage of 12 V	
F2	5 amp	Power supply (30 A power supply) for EPM base	
F3	5 amp	Power supply (30 A power supply) for EPM for Solution Command System (SCS)	
F4	5 amp	Power supply (30 A power supply) for EPM for TwinFluid™ System (only for 9xxiTF)	
F5	5 amp	Power supply (30 A power supply) for BoomTrac™ (optional)	
F6	5 amp	Electronic power (30 A power supply) for	

	Fuse Layout		
Fuse	Rating	Function	
		SRC control unit (ELX and EPM for Solution Command System)	
F11	5 amp	Valve power for the Solution Pump (ground is controlled by control unit) PowrSpray	
F12	5 amp	Power for the Fill Pump (ground is controlled by the control unit) PowrSpray	
F13	5 amp	Valve Power for Variable Geometry and Boom Height Adjustment Hydraulics (ground is switched by control unit)	
F14	10 amp	Power for work lights at the operator's station	
F15	10 amp	Valve Power for Automatic Variable Geometry Control	
F16		Not Used	
F17	15 amp	Section Valve Power for L1, L2, L3, L4 and L5	
F18	15 amp	Section Valve Power for R1, R2, R3, R4 and R5	
F19	15 amp	Section Valve Power for C, L6, L7, R6 and R7	
F20	15 amp	Power to Master Valve for a Standard Spray System, where the Master Valve is placed in the front area of the machine.	
		Power to the Master Valve for a Ring Line or Pressure Circulation System, where the Master Valve is placed at the Center-Frame of the machine.	
		Power to the Electric Agitation Valve (option)	
		Power to the Electric Main Fill Valve (AutoFill option)	

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

WZ00232,000057D-19-21MAY15

Multi-Function Control (MFC) - Control Layout



MFC Control Layout



NOTE: External rate sensors should be connected to the RS232 connection of the GreenStar display (bundle from AMS should be used). In the sprayer **External Target Rate Source** field on the display should be set to **AppI.map**. In Machine Settings - General in the Speed Source field the Tractor Wheel selection should not be used as there is no input available when using the Multi-Function Control.

	MFC with Electro-Hydraulic System		
A	Boom tilt (position in display), with Button 1 (Boom lock/ unlock)		
В	Boom section indexing (IBS) right		
С	Boom centre section (IBS) ON/OFF		
D	Boom section indexing (IBS) left		
E	Boom raise/lower, with Button 1 (inner boom fold/unfold)		
F	Left boom raise/lower, variable geometry, with Button 1 (fold/unfold left outer boom)		
G	Right boom raise/lower, variable geometry, with Button 1 (fold/unfold right outer boom)		
Н	Spray master valve ON/OFF		
I	Icon - spray master valve		
J	Manual control - drawbar steering, with Button 1 (drawbar centring)		
ĸ	Button 1 - Centre drawbar steering in conjunction with Switch J (steer left or steer right), with switch A (boom lock/ unlock)		
L	Button 2 - Automatic/Manual drawbar steering, hold 1 s to change to automatic or press briefly to change to manual		

Н	ydraulic Selector using the Multi-Function Control
В	Boom section indexing (IBS) right
С	Boom centre section (IBS) ON/OFF
D	Boom section indexing (IBS) left
E	Engage or disengage inner boom folding (fold or unfold)
F	Engage or disengage left outer boom folding (fold or unfold)
G	Engage or disengage right outer boom folding (fold or unfold)
J	Engage or disengage boom tilt function
Н	Spray master valve ON/OFF
I	Icon - spray master valve
K&L	No function

Tractor Selective Control Valves (SCV)	
В	Boom section indexing (IBS) right
С	Boom centre section (IBS) ON/OFF
D	Boom section indexing (IBS) left
Н	Spray master valve ON/OFF
I	Icon - spray master valve

WZ00232,0000468-19-30SEP13

Spray System Master On/Off Switch





WZ290401568

WZ290401568-UN-210CT11

A—Spray Master Switch (On/Off) B—Boom Sections Spraying (Blue Cone)

Press switch (A) to turn enabled boom sections ON and press again to turn OFF.

LED in center of switch will illuminate when switch is ON.

A cone (in blue) below the active section (dark background with lighter text) indicates the section is spraying when the master valve (A) is switched ON.

WZ00232,00003FE-19-07NOV12

Agitation, Working Lights and F-Switch

For further information, see Agitation, Working Lights and F-Switch in Sprayer Control System section of this manual.

WZ00232,00004A1-19-19NOV13

Control Group



D—Spray Master Switch ON/OFF

WZ290700048-UN-30MAR10

The electrical control group comprises an electrical pressure regulator, an electrically operated main shut-off valve, a pressure gauge and a pressure filter mounted on the left front side of the machine.

Electrical Pressure Regulator

The pressure regulator has three functions:

- Setting the required spraying pressure
- Maintaining the set pressure at a constant level
- Safety valve

The pressure regulator has a capacity of 400 l/min and is a directly-operated ball valve regulator with a special shaped ball to allow for accurately setting a spray pressure within a range of 0 to 8 bar.

Do not set a pressure higher than 8 bar due to the maximum permissible pressure on some components.

The pressure regulator is fitted with a 12 V electrical motor to allow for remote control. On the control panel, the working pressure can be raised or lowered by setting the AUTO/MAN toggle switch to manual mode (MAN) and by raising or lowering the pressure using the (+) or (-) keys.

A damaged diaphragm or incorrect fitting of a diaphragm will result in leakage. This becomes apparent when liquid flows out of the leakage hole on the spring holder.

Electrical Main Shut-Off Valve

Operation of the main shut-off valve takes place from the control box in the cab. The main shut-off valve is an electrically-operated ball valve.

When the spray MASTER switch (D) on the Multi-
Function Control lever (MFC) is in the open position, the LED in the center of the switch (D) is illuminated, the liquid is pumped at the set pressure via the pressure line filter to the boom section valves. The flow of liquid not sprayed flows via the pressure regulator into the return line. The liquid can be returned to the solution tank or to the suction side of the pump.

When the spray MASTER switch (D) on the MFC is in the closed position, the LED in the center of the switch (D) is not illuminated, the liquid is circulated at low pressure and flows back to the tank or to the suction side of the pump (depends on the setting of the circulation valve).

Manual and Digital Pressure Measurement



WZ290102504-UN-19MAY15



A—Digital Pressure Sensor B-Flow Sensor

spray boom.

The spraying pressure is indicated digitally via the Implement Display 1100 or the GreenStar displays. For that purpose, the machine is fitted with a digital pressure sensor (A) which is mounted to the rear center of the

Both a pressure sensor and a flow sensor are fitted to the machine. The pressure measured by the pressure sensor will be given on the display.

Analogue Pressure Measurement



A—Analogue Pressure Gauge

The analogue pressure gauge (A) fitted to the front of the machine is for monitoring purposes only. The pressure gauge is located near the pressure regulator and displays the pressure at that point (in bar). The spraying pressure given on the Implement Display 1100 or the GreenStar display is very accurate and is always lower during spraving due to pressure losses in the line. Depending on the output, the spraying pressure at the nozzles will always be slightly lower than the pressure on the display due to pressure losses in the lines and the presence of diaphragm non-return valves in the nozzle holders. Make allowances for this when calibrating the spray nozzles.

A glycerine damped pressure gauge with a 100 mm housing and a phased scale of 0 to 10/25 bar is fitted as standard. The scale is divided into four color zones. Make sure the pressure is always set in the green zone (1 to 10 bar). From 0 to 10 bar, the scale is divided into steps of 0.2 bar (accuracy: 1.0% of 10 bar, i.e. 0.1 bar).

Sprayers with pressure based regulation (with digital pressure sensor) are delivered with a calibration pressure gauge (used for the calibration of the pressure sensor only). Also refer to Testing of the Machine in the section Maintenance or Liquid Pressure Calibration in the section Sprayer Control System.

NOTE: Remove the pressure gauge for winterization to prevent damage. See the section on Storage for further information.

Pressure Filter





WZ290101059

WZ290101059-UN-200CT00

-Pressure Filter Α-**B**—Filter Element C—Filter Cup

NOTE: See System Rinse in this section for Filter Cleaning.

The pressure filter (A) is important for spraying without blockages, and provides the last central filtering before the liquid is moved to the nozzles.

A 50 mesh filter (blue) is fitted as standard. This filter has a mesh width of 280 micron (0.28 mm) and is suitable for flat fan nozzles of the 02 type (or comparable sizes) and larger.

For finer mesh filters to use with smaller nozzles sizes refer to the SprayerPartner catalog.

The filter must be cleaned regularly (in any case after each use: see also the safety guidelines from chemical manufacturer). This can be done simply by unscrewing the filter cup (C) and removing the filter element (B). Regular cleaning of the filter will prevent silting up, which could break the filter.

Self Rinsing Pressure Filter

CAUTION: For cleaning and operator safety refer to chemical product information.



-Pressure Filter Δ. R. -Filter Cup

-Valve

WZ290102414-UN-22NOV13

NOTE: See System Rinse in this section for Filter Cleaning.

The pressure filter (A) is important for spraying without blockages, and provides the last central filtering before the liquid is moved to the nozzles.

A 50 mesh filter (red) is fitted as standard. This filter has a mesh width of 280 micron (0.28 mm) and is suitable for flat fan nozzles of the 02 type (or comparable sizes) and larger. A finer 80 mesh filter (blue) can be fitted for smaller nozzles. This filter has a mesh width of 180 micron (0.18 mm). To activate the continuous rinsing process during spraying open valve (C). This enables the liquid to flow into the tank.

The filter must be flushed and cleaned regularly (in any case after each use; see also the safety and rinsing guidelines from the chemical manufacturer). This can be done simply by unscrewing the filter cup (B) and removing the filter element out of the cup. Regular cleaning and opening the valve of the filter will prevent silting up, which could break the filter.

WZ00232,00005DD-19-29MAY15

Operating IBS (Index Boom Sections)



Pneumatic Valves - Pressure Circulation System



WZ290700057-UN-22MAR10 Electrical Boom Section Valves (Ring Line)



A—IBS Left Button B—IBS Reset Button C—IBS Right Button D—Electrical Boom Section Valves (Ring Line) Fluid is transported to the left and right spray boom

segments from the pressure filter. Using the boom section valves (D), between 4 and 13 sections can be operated, dependent on the version.

The MFC is capable of controlling 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 ball valves integrated on the spray boom.

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

There are three buttons to operate this function.



N64668-UN-16DEC03



WZ290401569-UN-210CT11

EXAMPLE: If you are coming upon an angled boundary and you would like to shut off sections in sequence from left to right, press and release IBS right button (A) once to shut off left-hand breakaway boom section (B) (L4 on display). Press and release button (A) again to shut off section (C) (L3 on display). Continue to press and release button (A) to shut off remaining sections across the entire boom.

Once all sections have been shut off, press and release button (A) again to turn **ON** section (B), then (C) and so on.

If only a few sections have been turned off using button (A), you can turn them back on in sequence one at a time using IBS left button (I) or turn them all back ON at once using IBS reset button (J).

Sections can be shut OFF from the right-to-left using button (I).

- NOTE: The edge nozzles will shut off when the breakaway boom sections are switched OFF.
- NOTE: Refer to Section ON/OFF Softkey Layout in Sprayer Control System Section.

WZ00232,00004BC-19-28NOV13

A—IBS Right Button

- B-Left-Hand Breakaway Boom Section ("L4" on Display)
- -Left-Hand Boom Section ("L3" on Display) C-
- 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) –Right-Hand Breakaway Boom Section ("R4" on Display) н-I-IBS Left Button

J—IBS Reset Button

Protective Clothing Locker



WZ290102415-UN-22NOV13



A—Protective Clothing Lockers B-Clean Clothing Locker C—Used Clothing Locker **D**—Locker Fastener

CAUTION: Do not store used clothing in the clean clothing locker.

A clothing locker (A) is located on the left-hand side of the machine on the right side of the chemical inductor. The locker provides a place to stow protective clothing, as well as other parts as nozzles, filters, and cleaning brushes. The clothing locker (A) is divided into two halves, the left side is intended for clean protective

clothing (B) and the right for used protective clothing (C). The clothing locker has a door which is held closed by a fastener (D).

WZ00232,00004A3-19-22NOV13

Chemical Transport Compartment



WZ290102417

W7290102417-UN-22NOV13



WZ290102418-UN-22NOV13

- A—Chemical Transport Compartment
- -Compartment Lock C—Compartment Storage

The chemical transport compartment is located on the right side of the vehicle, access is through a door which is fitted with a lock (B).

The compartment contains 250 liters or 250 kg of storage (C) for chemicals. Chemical products with container sizes of 5, 10 and 20 L should be possible to transport.

WZ00232,00004A4-19-29NOV13

Pressure Circulation System (Option)

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.

Air Filters



Air Filters Assembled



Air Filters - Bowls Removed



WZ290102307-UN-16NOV11

A—Body B—Sight Glass C—Air Filter 0.01 Micron

D—Air Filter 5 Micron E-Bowl

-Filter Elements

-Air Reservoir Drain Valve

CAUTION: To stop the charging of the system air pressure:

- Switch off tractor to turn off the tractor compressor or the on-board air compressor.
- Disconnect air brake pressure hoses from tractor.

CAUTION: Always completely relieve system air pressure before performing any work.

The air filtration system consists of two parts, the air filter (C) with a 0.01 micron cartridge (white) and air filter (D) with a 5 micron cartridge (green). To relieve the system air pressure switch off the air compressor (switch off tractor) and open the drain valve (G) on the air reservoir.

Each filter bowl (E) has a sight glass (B) at which the moisture level can be checked. Keep the level below the bottom of the air filter element (F).

Check daily for excessive moisture buildup.

Clean or replace filters when dirty.

Disassembly procedure for access to the filter:

- Ensure air pressure has been relieved.
- Remove bowl (E) push up into body (A) and turn counterclockwise.
- Unscrew filter element (F) for cleaning or replacement.

Cleaning:

- Sight glass (B) with warm water only.
- Rinse and dry parts blow internal passages in body (A) with clean dry compressed air.
- Air filter elements (F) blow air through filter element from the inside out to remove surface contaminants.
- Inspect parts replace worn or damaged parts.

For the maintenance of the pneumatic pressure lines, see **Pneumatic Pressure Lines and Air Nozzle Shut-off** under the **Lubrication** in the **Maintenance** section.

On-Board Air Compressor



WZ290102308—UN—16NOV11



WZ290102309

WZ290102309—UN—16NOV11



WZ290102310

WZ290102310-UN-16NOV11

A—Air Compressor B—Hydraulic Motor C—Air Reservoir

CAUTION: Switch off tractor to turn off on-board air compressor.

CAUTION: Air compressor is hot when in operation. Allow to cool down before checking or performing maintenance.

The on-board air compressor is fitted to sprayers with pneumatic operated nozzles and hydraulic braking system. The air compressor (A) is located on the sprayer platform. It is driven by a hydraulic motor (B) run by the sprayer hydraulic system. An air reservoir (C) is located on the rear of the sprayer axle to supply the required air to the section valves for the operation of the pneumatic nozzle bodies.

Check oil level daily (on level ground) in the crankcase and, if necessary, top up to upper mark on the dipstick, use PLUS 50 or Torq-Gard Supreme. Remove shield lower fastener and lift up to gain access.

Oil change intervals:

- After first 20 hours of operation.
- Subsequent oil changes after every 500 hours of operation.

Air filter element inspection and replacement:

• Check daily for cleanliness.

- Gently clean element with a clean dry air line when required.
- Element damaged or too dirty to clean replace element.

WZ00232,00003F6-19-30JAN15

Suction Unit

Suction Unit for Sprayers



WZ290102431

WZ290102431-UN-28NOV13

A—Suction Selection Valve **B**—Filling Hose Connection C-Suction Filter

The suction unit of sprayers comprises of a Suction Selection Valve (A), a Suction Filter (C) and a filling hose connection (B). The suction unit is constructed in such a way that liquid can be sucked either from the solution tank, from an external source or from the rinse tank.

Suction Selection Valve



WZ290102432

WZ290102432-UN-28NOV13 -Suction Closed - Filter Cleaning / Manual Machine Filling B—Suction of Spray Liquid (Solution Tank) C-Suction from Rinse Water Tank

The position of the handle of the Suction Selection Valve indicates the direction from which the liquid is sucked (see illustration).

The liquid will always flow through the suction filter (30 mesh) in order to protect the pump against contamination in the liquid. The 30 mesh suction filter has a mesh width of 420 micron. A decal with symbols is fitted on the Suction Selection Valve, showing the various positions.

Suction Filter



WZ290102421-UN-22NOV13

A—Suction Filter B—Drain Tap

IMPORTANT: Clean filter daily.

Filters are used to help keep dirt and debris from entering and damaging the solution pump, nozzles, and other components. The filter elements need removing and cleaning to maintain optimum solution flow. To avoid spillage of chemicals while cleaning the filters, turn the Solution Pump Off, 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 liquid from filter housing with the drain tap (B) (use a bucket or container for the liquid). Unscrew the filter housing to remove the filter element.

External Filling Connection



A—Filling Hose B-Strainer

C—Integrated Float

A filling hose can be attached to the external connection point. The external connection point has a 2" female thread. The trailed spraver is fitted with either a camlock coupling, a B/C Storz coupling or with a firebrigade coupling. These male couplings are screwed in the thread and have a blind cap to close the filling connection if no filling hose is connected.

Use the correct diameter filling hose, as too narrow a

filling hose will cause excessive wear to the pump. Make sure couplings and hose connections are kept clean, to ensure effective sealing. If this is not the case, air will be sucked in, which may damage the pump.

The 2" filling hoses supplied by John Deere are not fitted with couplings. A separate kit with a female coupling and hose barb with either a camlock, B/C Storz or firebrigade connection is supplied together with the filling hose. These couplings have to be fitted to the filling hose. The filling hoses (A) are 6 or 9 meters long, and are fitted with a strainer (B).

Tank Drain



A—Rope

WZ290101741—UN—26AUG05

The tank can be drained with a remote controlled drain valve operated by pulling up rope (A) on top of the tank.

WZ00232,00005DE-19-29MAY15

Transfer Valve to Pump Liquid Back to Storage Tank (Option)



A—Transfer Valve B—Hose Connection

The transfer valve with hose connection can be used to pump remaining liquid (e.g. liquid fertilizer) from the

solution tank back to a storage tank. There is a 1.5" hose connection (B) available, to which different kinds of couplings can be attached, like Kamlock (quick release coupling), Firebrigde and C-coupling (Storz). These couplings are delivered separately (male and female parts with hose barb and hose clamps). The male coupling should be screwed into the 1.5" thread connection on the left front side of the sprayer and the female coupling with hose barb should be connected to a delivery hose with the hose clamps.

To pump the remaining liquid from the solution tank back to a storage tank, connect the delivery hose to the transfer valve connection and open the transfer valve (A). Open the main shut-off valve and close the boom section valves, agitation and set the circulation valve to **Return to Tank** (where fitted). Let the pump run, so the liquid can be pumped back to the storage tank.

NOTE: The transfer valve should be properly rinsed after use. This can be done by setting the suction valve from the pump to rinse water. If rinse water is purged out via the transfer valve (A), it can be closed. The machine can be rinsed as described in the section **Working with the Machine**.

WZ00232,00004BD-19-27NOV13

Solution Pump Recommendations

To ensure 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, see **Working with Boom Rinse** in **System Rinse** in this section.

To rinse entire system including the solution tank, see **System Rinse** in this section.

Winterize pump properly.

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

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

WZ00232,00004A8-19-27NOV13

Pump



WZ290300053

- 1—Accumulator 2—Delivery Connection 3—Pump Housing 4—Refill Reservoir 5—Cylinder Lining 6—Cylinder Head 7—Suction Connection
- 8—Eccentric Shaft
- 9—Ball Bearing

The 900 series is equipped with two piston diaphragm pumps with a capacity of 280 liters per minute each at 540 rpm. As the sprayer has two pumps, they will both be used for delivery of the spraying liquid to the boom and for agitation. Both pumps together are used to fill the tank. The pumps are located in the **Solution Control System** and are driven by a hydraulic pump. The maximum pressure of the pumps is 20 bar. 10—Needle Bearing 11—Piston Pin 12—Drive Rod 13—Piston 14—Piston Seal 15—Diaphragm 16—Centering Disk 17—Nut WZ290300053-UN-280CT98

Starting the Pump





WZ290201438

WZ290201438—UN—25MAR11

A—Oil Level Upon Standstill B—Oil Level Upon Starting C—Oil Level During Work D—Diaphragm Attaching Point

When the pump is idling (A), the space between the pistons and the diaphragms will fill with oil from the refill reservoir on the pump. When the pump is subsequently activated and the diaphragms are directly subjected to counter pressure from the liquid, the diaphragms will be pressed against the piston. This will press the superfluous oil back into the refill reservoir (B). The larger the length of piston stroke and diaphragm diameter, the greater the amount of oil displaced. This displacement of oil may take some time, depending on the temperature of the oil. The pressure on the diaphragm will be increased considerably while this superfluous oil is being displaced into the refill reservoir.

After a few revolutions, the diaphragm lies completely against the piston (C).

Using the Pump



A—Pump Oil Reservoir

- Always check the oil level before operation of the pump. The oil level in the reservoir (A) needs to be between the minimum and maximum level indices. Repeat the level check with the pump in operation. The amount of oil may decrease after the first hours of operation due to deformation of the diaphragms in contact with the chemical product (causing more oil to be used). See also section **Maintenance**.
- Filling via the pump. Always begin filling at low speed until the pump is fully filled with liquid and the liquid flows into the tank. Only increase the pump speed after the pump is completely filled.
- In event of breakage of a diaphragm, the oil changes color and turns white. In this case, the pump needs to be stopped immediately and the diaphragms need to be replaced by your John Deere dealer. There are three different types of diaphragms available: Fitted as standard are HPDS diaphragms also available are Nitril Buna diaphragms , and white Desmopan diaphragms for corrosive chemicals. Due to the hardness of the diaphragms, the wear will be increased.

Pump Diaphragms Types		
Description	Part Number for a set of 6 diaphragms	
HPDS diaphragms - fitted as Standard	WZW13765	
Desmopan diaphragms	WZ3023026	
Nitril Buna diaphragms	WZ3023051	

Pressure Accumulator



A—Pressure Control Valve B—Pressure Accumulator

WZ290100055-UN-280CT98

The piston diaphragm pumps are fitted standard with a pressure accumulator (B), which ensures a regular flow of liquid, by evening out the pressure pulses.

The recommended air pressure is depending upon the spraying pressure (see table below).

Spraying pressure	Air pressure
1 - 3 bar	0 - 1 bar
3 - 12 bar	1 - 3 bar
12 - 20 bar	3 - 4 bar

The pressure in the accumulator can be measured and corrected via valve (A) located on the pressure accumulator.

NOTE: The pre-pressure should be checked with the machine turned off.

Check the valve for leakage. The needle on the pressure gauge must be more or less motionless during spraying.

WZ00232,00004BE-19-03JAN17

Spray Boom





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 from 24 to 30 meters with a transport width of 2.55 meters
- triple-folding booms from 27 to 40 meters with a 3.00 meter transport width.

The functions are electro-hydraulically operated by means of the Multi-Function Control lever (**MFC**).

In the transport position, the spray booms are divided into two or three segments on each side above 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 13 spray line sections, depending on the version.

The outer spray boom segments (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 completely protected along the whole boom width, in order to avoid damage to the nozzles as they move forward during spraying.

The hydraulic functions of the sprayer are operated by (depending on the type of equipment):

- the tractor selective control valves directly.
- the tractor selective control valves by means of a hydraulic selector control via the Multi-Function Control (MFC)
- electro-hydraulically with the Multi-Function Control (MFC)

Section division of spray boom		
Spray boom	No. of sections	Section widths (m)
Double folding booms:		
24/12 m	4	6-6-6
24/12 m	6	4-4-4-4-4
24/12 m	8	3-3-3-3-3-3-3
27/15 m	9	3-3-3-3-3-3-3-3
28/14 m	7	4-4-4-4-4
28/14 m	8	3-4-4-3-3-4-4-3
30/15 m	9	3-4.5-3-3-3-3-4.5-3
Triple folding booms:		
27/18 m	7	4.5-4.5-3-3-4.5-4.5
27/21 m	9	3-3-3-3-3-3-3-3
28/20 m	7	4-4-4-4-4
30/21 m	9	4.5-3-3-3-3-3-3-4.5
32/21 m	8	4-4-4-4-4-4
33/21 m	9	3-3-4.5-4.5-3-4.5-4.5-3-3
33/21 m	11	3-3-3-3-3-3-3-3-3-3
36/24 m	9	4-4-4-4-4-4-4
36/24 m	12	3-3-3-3-3-3-3-3-3-3-3-3
39/27 m	9	4.5-4.5-4.5-3-4.5-4.5-4.5-4.5
39/27 m	13	3-3-3-3-3-3-3-3-3-3-3-3
40/27 m	13	3.5-3-3-3-3-3-3-3-3-3-3-3-3-3-5

Height adjustment



WZ290102312-UN-18NOV11

A—Parallelogram Linkage B—Cylinder

C—Transport Lock

D—Pressure Accumulator

The spray boom is adjustable in height by means of a parallelogram linkage (A) with two hydraulic cylinders (B). The height adjustment system has a pressure accumulator (D) which functions as a shock absorber for the spray boom. The cylinders allow for height adjustment of the spray boom of 2 m. The hydraulic hose of the height adjuster must be connected to a single-acting selective control valve on the tractor for sprayers with hydraulic operation (with or without hydraulic selector).

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 will release. The spray boom can be folded out in the highest position. If the spray boom arms are folded out, the transport lock will be pulled back automatically by means of a hydraulic cylinder connected to the spray boom arms (left and right).

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) will be locked by the transport hooks. Also the outer boom segments will be locked if the folded boom is lowered. Please see also Adjusting the spray boom transport position in the section Adjustments.

Folding and unfolding with double folding booms

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, since serious damage may be caused to the spray boom and suspension.
- **IMPORTANT:** To avoid damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.



WZ290101367

WZ290101367-UN-10JAN02



WZ290101664-UN-01MAR05



A-Connecting Rod between Boom Arms B—Pendulum Lock Cylinder C-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.

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 locking mechanism consists of a fixed support bracket underneath the boom (C).

NOTE: For the folding and unfolding of the boom with different types of hydraulic operation see Folding and unfolding with triple folding booms which follows for further information.

Folding and unfolding with triple folding booms



- **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 damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.



WZ290101367-UN-10JAN02





WZ290101375

WZ290101375-UN-10JAN02 -Connecting Rod between Boom Arms B—Pendulum Lock Cylinder Boom Locking Device for Inner Boom Segments -Boom Locking Device for Outer Boom Segments D-

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.

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

Hydraulic Operation with Tractor Selective Control Valves

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

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

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

The hydraulic operation of the spray boom can be performed directly with the tractor selective control valves. The following connections are required on the tractor:

- one single-acting selective control valve for boom height adjustment
- one double-acting selective control valve for boom folding (left and right)
- · one double-acting selective control valve for boom tilt

To unfold or fold the boom always raise the parallelogram to its highest position before unfolding or folding. This will ensure the boom does not come into contact with the other parts of the sprayer.

Hydraulic Operation with Hydraulic Selector using the MFC



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

- **IMPORTANT: Unfolding and folding the boom must** be done with the spray boom in its highest position. Damage to the boom and the vehicle will result when this is not carried out.
- IMPORTANT: Only the outer sections of this boom should be unfolded or folded individually.



- A—Switch to select folding boom in/out
- B—Switch to select folding left boom tip in/out
- C—Switch to select folding right boom tip in/out
- D—Switch to select boom tilt left/right

In case of machines hydraulically operated via the tractor selective control valves in combination with the MFC hydraulic selector, the following tractor selective control valves are required:

- 1 single-acting selective control valve for hydraulic boom height adjustment
- 1 double-acting selective control valve for all spray boom functions

With the hydraulic selector, the operator can select the hydraulic function to be controlled with the double-acting selective control valve of the tractor:

- boom folding
- boom tilt
- boom folding tips

Electrically controlled check valves direct the oil flow from the double-acting selective control valve of the tractor to the selected cylinder(s).

By selecting the required switch, the corresponding function can be activated by operating the connected double-acting selective control valve on the tractor. A function is active if the switch is held for more than 2 seconds, a graphic will appear on the **Sprayer Main** page to show the selected function is active. Only one switch may be activated at the same time, except the switches for the folding boom tips (B) and (C) which can be operated simultaneously (boom tips cannot be folded individually).

If more than one function is selected at the same time (for example boom folding and boom tilt), no function will work.

When changing from one hydraulic function to another the display will show the words **Hydraulic Function Transition**, this is to indicate that the new selection will be available after the previous function has been disengaged.

To unfold or fold the boom always raise the parallelogram to its highest position before unfolding or folding. This will ensure the boom does not come into contact with the other parts of the sprayer.

NOTE: If the spray boom is in the transport position, no function can be operated (locked with safety switch), except boom raise.

Boom unfolding/folding with folding boom tips with the MFC



A-Electro-Hydraulic Control Valve Block

The folding and unfolding of the boom is operated by the Multi-Function Control lever **(MFC)**. The electro-hydraulic control valve block (A) is fitted on the rear of the parallelogram height adjustment, underneath a protective cover.

The hydraulic hoses for the electro-hydraulic control must be connected to a single or double-acting selective control valve and a pressure-free return line. The appropriate control valve needs to be activated constantly to supply the electro-hydraulic control valve block with oil.

Proceed as follows to unfold and fold the spray booms:



MFC - Switches



Boom Tilt Switch - Right



A--Spray Boom Switch - Raise

- B—Button 1
- C--Spray Boom Switch - Lower
- D-Left Boom Switch Lower Left Boom
- E-Right Boom Switch Lower Right Boom
- F—Boom Tilt Switch Right G—Boom Pendulum Unlocked

Electro-Hydraulic - Boom Unfold with the MFC

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

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

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

- 1. Press Spray Boom Switch (A) to raise boom to highest position.
- 2. Press and hold **Button 1** (B) and the lower part of Spray Boom Switch (C) until the inner booms are fully unfolded.
- 3. Press and hold Button 1 (B) and the lower part of Left Boom Switch (D) and Right Boom Switch (E) until the outer booms are fully unfolded.

For Asymmetric Boom Unfold use the required switch (D) for left or (E) for right to unfold the outer boom.

- 4. Press Spray Boom Switch (C) without button 1 to position nozzles at desired working height.
- 5. Press Button 1 (B) and Boom Tilt switch Right (F) to unlock the boom pendulum. Display shows the status of the pendulum lock (G) as unlocked.
- 6. Press Left Boom Switch (D) to lower (adjust) left boom tip to desired working angle. Press **Right** Boom Switch (E) to lower (adjust) right boom tip to desired working angle.



WZ290401571

WZ290401571—UN—210CT11



WZ290103587—UN—06NOV08 Boom Tilt Switch - Left

A—Button 1

- B-Left Boom Switch
- C—Right Boom Switch
- D—Spray Boom Switch Raise/Lower E—Boom Tilt Switch - Left
- F—Boom Pendulum Locked

Electro-Hydraulic - Boom Fold with the MFC

- IMPORTANT: Unfolding and folding the boom must be done with the spray boom in its highest position. Damage to the boom and the vehicle will result when this is not carried out.
- IMPORTANT: Before folding in booms, the boom tilt correction should have no bias set, the boom should be level to the vehicle. See Boom Tilt Correction in this section.
- IMPORTANT: To avoid damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.
- IMPORTANT: Only the outer sections of this boom should be unfolded or folded individually.

To Fold in

- Raise boom to its highest height with the upper part of the Spray Boom Switch (D), ensure there is no boom tilt bias on the boom.
- 2. Press **Button 1** (A) and **Boom Tilt switch Left** (E) to lock the boom pendulum. Display shows the status of the pendulum lock (F) as locked.
- 3. Push and hold **Button 1** and the upper part of **Left Boom Switch** (B) and **Right Boom Switch** (C) together until outer sections are fully folded in.

For **Asymmetric Boom Fold In** use the required switch for left or for right to fold in the outer boom first.

- 4. Press and hold **Button 1** (A) and the upper part of **Spray Boom Switch** (D) until the inner booms are fully folded.
- 5. Release **Button 1**, press the lower part of the **Spray Boom Switch** (D) to lower boom into cradle.

Electro-Hydraulic - Boom Tips Fold in with the MFC



A—Spray Boom with Tips Folded in

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, since serious damage may be caused to the spray boom and suspension.

The sprayer is fitted with independent folding and unfolding of the outer boom segments, to spray with a reduced working width (A). Please see also **Spray Boom** in this section for the reduced working widths in the table with section divisions.

Proceed as follows to fold in and out the outer boom segments simultaneously:



WZ290401571

WZ290401571-UN-210CT11





WZ290103587—UN—06NOV08



A—Button 1 **B—Left Boom Switch - Fold** -Right Boom Switch - Fold D—Sprav Boom Switch E-Boom Tilt Switch F—Boom Pendulum Lock

To Fold in

- **IMPORTANT:** To avoid damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.
- IMPORTANT: Before folding in booms, the boom tilt correction should have no bias set, the boom should be level to the vehicle. See Boom Tilt Correction in this section.

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

- 1. Raise boom to its highest height with the upper part of the Spray Boom Switch (D), ensure there is no boom tilt bias on the boom.
- 2. Press Button 1 (A) and Boom Tilt switch Left (E) to lock the boom pendulum. Display shows the status of the pendulum lock (F) as locked.
- 3. Push and hold Button 1 (A) and the upper part of Left Boom Switch (B) and Right Boom Switch (C) together until outer sections are fully folded in.
- 4. Release Button 1 (A), press the lower part of the Spray Boom Switch (D) to position nozzles at desired working height.

5. Press Button 1 (A) and Boom Tilt switch - Right (E) to unlock the boom pendulum. Display shows the status of the pendulum lock (F) as unlocked.



WZ290401571

WZ290401571-UN-210CT11





A—Button 1

- B-Left Boom Switch Unfold
- C-Right Boom Switch Unfold
- **D**--Spray Boom Switch
- -Boom Tilt Switch F-
- F—Boom Pendulum Lock

To Unfold

- **IMPORTANT:** To avoid damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.
- IMPORTANT: Only the outer sections of this boom should be unfolded or folded individually.

- 1. Press the upper part of **Spray Boom Switch** (D) to raise boom to highest position.
- 2. Press **Button 1** (A) and **Boom Tilt switch Left** (E) to lock the boom pendulum. Display shows the status of the pendulum lock (F) as locked.
- 3. Press and hold **Button 1** (A) and the lower part of **Left Boom Switch** (B) and **Right Boom Switch** (C) until the outer booms are fully unfolded.
- 4. Press the lower part of **Spray Boom Switch** (D) without button 1 to position nozzles at desired working height.
- 5. Press **Button 1** (A) and **Boom Tilt switch Right** (E) to unlock the boom pendulum. Display shows the status of the pendulum lock (F) as unlocked.

Electro-Hydraulic - Independent Folding Boom Tips



A—Spray Boom with Independent Folding Tips

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

IMPORTANT: Spraying and driving with one outer boom segment folded in needs be done with the greatest caution, since the pendulum system is blocked. Drive slowly and avoid rough tracks or serious damage may be caused to the spray boom and suspension.

The sprayer with electro-hydraulic control is fitted with independent folding and unfolding of the outer boom segments left/right, to spray along obstacles in the field.

Proceed as follows to fold in and out the outer boom segments independently:



WZ290401571

WZ290401571-UN-210CT11



WZ290103587—UN—06NOV08



- WZ290700055-UN-22MAR10
- A—Button 1 B—Left Boom Switch - Fold
- C-Right Boom Switch Fold
- D-Spray Boom Switch
- E—Boom Tilt Switch
- F—Boom Pendulum Lock

To Fold in

- IMPORTANT: To avoid damaging the locking mechanism and machine, always raise the boom to its highest position before folding or unfolding.
- IMPORTANT: Before folding in booms, the boom tilt correction should have no bias set, the boom should be level to the vehicle. See Boom Tilt Correction in this section.
- IMPORTANT: Only the outer sections of this boom should be unfolded or folded individually.

- 1. Raise boom to its highest height with the upper part of the Spray Boom Switch (D), ensure there is no boom tilt bias on the boom and drawbar is in the central position.
- 2. Press Button 1 (A) and Boom Tilt switch Left (E) to lock the boom pendulum. Display shows the status of the pendulum lock (F) as locked.
- 3. For Asymmetric boom fold, press and hold Button 1 (A) and press the upper part of Left Boom Switch (B) or **Right Boom Switch** (C) until outer section is fully folded in.
- 4. Release Button 1 (A), press the lower part of the Spray Boom Switch (D) to position nozzles at desired working height.
- 5. Press Button 1 (A) and Boom Tilt switch Right (E) to unlock the boom pendulum. Display shows the status of the pendulum lock (F) as unlocked.



WZ290401571

WZ290401571-UN-210CT11





A—Button 1

- B-Left Boom Switch Unfold
- C--Right Boom Switch - Unfold D-Spray Boom Switch
- E—Boom Tilt Switch
- F—Boom Pendulum Lock

To Unfold

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

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

- 1. Press the upper part of Spray Boom Switch (D) to raise boom to highest position. The drawbar must be in central position.
- 2. Press Button 1 (A) and Boom Tilt switch Left (E) to lock the boom pendulum. Display shows the status of the pendulum lock (F) as locked.
- 3. For Asymmetric boom fold, press and hold Button 1 (A) and press the lower part of Left Boom Switch (B) or **Right Boom Switch** (C) until outer section is fully unfolded.
- 4. Release Button 1 (A), press the lower part of the Spray Boom Switch (D) to position nozzles at desired working height.
- 5. Press Button 1 (A) and Boom Tilt switch Right (E) to unlock the boom pendulum. Display shows the status of the pendulum lock (F) as unlocked.

Electro-Hydraulic - Variable Geometry



WZ290101170-UN-13NOV01









WZ290101173-UN-13NOV01



A—Cylinder Variable Geometry

B—Cylinder Connection Slots

- C—Spray Boom with Positive Correction
- D—Spray Boom with Negative Correction
- E—Spray Boom with Independent Correction Left and Right

F—Left Boom Switch

G-Right Boom Switch

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

Sprayers with electro-hydraulic control can be fitted with independent raising and lowering of the spray boom arms left and right (variable geometry). This can be used to spray in sloping and irregular fields to adjust the correct height of the nozzles above the ground.

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

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

When the spray boom is folded out fully, the left and right spray booms can be raised or lowered by operating upper or lower part of the **Left Boom Switch** (F) and **Right Boom Switch** (G) on the **MFC**.

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



A—Accumulators B—Adjustable Restrictors

WZ290700188—UN—19OCT10

The variable geometry is equipped with accumulators (A) and adjustable restrictors (B). The speed of variable geometry can be adjusted with these restrictors to match spraying conditions. When the restrictors are turned clockwise the oil flow will be increased, when turning counter-clockwise the oil flow will be decreased. Both restrictors need to be equally adjusted.

WZ00232,00004BF-19-03DEC13

Boom Suspension System



-UN-190CT10 WZ290700189-



WZ290101678

WZ290101678-UN-10FEB05



A—Bearing Pendulum System

- B—Swivel
- C—Shock Absorbers for Horizontal Movements
- D—Anti-Yaw System E-
- -Polyurethane Dampers (Anti-Yaw System) -Shock Absorbers for Vertical Movements

G—Dampening Hydraulic Cylinders

The spray booms of the 900-series trailed sprayers are fitted with a central pendulum and anti-yaw boom suspension system. This boom leveling system allows for working on uneven ground (vertical movements) and prevents yawing of the spray boom (horizontal movements).

The central pendulum boom suspension (A) with shock absorbers (C) ensures that the machine can rotate around its longitudinal axis without any effect on the spray boom. The spray boom will therefore remain horizontal, if properly adjusted.

Yawing of the spray boom is avoided due to the complete suspension frame being held in two ball bearings (D). This allows the machine to move around its vertical axis in relation to the spray boom, without causing the spray boom to yaw. Depending on boom type and size, the polyurethane dampers (E) work as shock absorbers for the anti-yaw system supported by shock absorbers (F) or by dampening hydraulic cylinders (G).

IMPORTANT: Fast driving and rough terrain may cause center frame to strike against frame. Reduce speed to avoid damage.

NOTE: For horizontal and vertical movements either a single or double shock absorber (C) and (F) is fitted dependent on boom size. Triple folding booms are equipped with hydraulic vaw dampening cylinders (G).

Important information on the boom suspension system



A—Guiding Pin (Pendulum Arm) B—Guiding Strip

- There should be no contact pressure between the guiding strip (B) and the guiding pin (A) of the pendulum arm for the swinging system to function effectively. Take note of the following points in order to achieve this:
- The spray boom must be aligned straight, see Spray Boom Alignment in the section entitled Adjustments.
- The machine must be coupled to the tractor in such a

manner that the machine does not lean forwards or backwards.

During spraying, spray boom movement can be minimized by heeding the following advice:

- Drive at a regular speed
- Limit your steering movements
- When needing to turn, do so smoothly.
- For optional steered axle, use the HMS function (if equipped).

Boom Suspension Kit For Slopes

A—Boom Suspension Kit For Slopes

For working on slopes (more than 5 %) a boom suspension kit is delivered with the sprayer and recommended to be used. This kit contains two springs (A), which are fitted to the suspension system in addition to the shock absorbers. The springs ensure that the spray boom will follow the slope better, without having to operate the boom tilt correction too much. The boom suspension will be slightly less sensitive, but pendulum action still remains possible. The springs can be fitted or removed according to the field conditions.

The springs are designed for working on hilly fields and therefore should be removed for working on flat fields.

WZ00232,000065E-19-13DEC16



WZ290700193-UN-19OCT10

Boom Tilt Correction



Boom Tilt Correction

WZ290103582-UN-100CT08

CAUTION: Never adjust the tilt of the spray boom near obstacles or in the area of electrical power lines.

IMPORTANT: Before folding in the boom, remove any boom tilt, ensure boom is level.





WZ290700194-UN-19OCT10

B-Boom Tilt Indication, Sprayer Main Page C—Hydraulic Boom Tilt Cylinder

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

When the spray boom is folded out fully, the spray boom can be tilted by operating the **Boom Tilt Switch** (A) located on top of the MFC.

Pressing the left side of the **Boom Tilt Switch** (A) will move the left boom tip down and raise the right tip. Pressing the right side of the Boom Tilt Switch (A) will have the opposite effect, the right boom tip will move down and the left tip will raise.

Hold the **Boom Tilt Switch** (A) until the desired tilt has been achieved. A boom tilt indication (B) can be found on the GreenStar™ display to monitor the boom position on Sprayer Main Page.

To level the boom press the center (left and right in unison) of the Boom Tilt Switch (A), press for 1 sec. to level the boom (the operation will start as soon as the switch is pressed, if released within the 1 sec. the operation will stop). This operation will automatically level the boom in relation to the vehicle. This is a useful function to perform before folding in the spray boom.

NOTE: The boom tilt indication will show the desired position of the boom. With BoomTrac™ option fitted the boom tilt indication will show the actual position of the boom.

WZ00232,000065F-19-13DEC16

Spray Line and Nozzle Holders



WZ290100089-UN-280CT98



A—Boom Tilt Switch

GreenStar is a trademark of Deere & Company BoomTrac is a trademark of Deere & Company



A—End Stop B—Blind Cap

The 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.

The nozzle holders are fitted with a diaphragm valve, to prevent 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 defrosting. 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.



WZ290101581-UN-08NOV02



WZ290101583

WZ290101583—UN—08NOV02



90101584

WZ290101584—UN—08NOV02

A—Multiple Nozzle Holder B—Spring Clip C—Plug

Revolving nozzle holder

Revolving nozzle holders can be fitted to the machine as an alternative. With such a revolving nozzle holder (A), the carrousel can be rotated to choose a different nozzle. The carrousel may only be turned when it is not under pressure (i.e. do not move the carrousel while spraying!)

The revolving nozzle holders have five nozzle connections.

The nozzle pointing downwards is the one which is active. There is a blind position between each spraying position.

The carrousel can easily be removed from the nozzle holder once the retaining 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 pre-set 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.

Make sure 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 for various types of nozzles.

TwinSelect In Cab Nozzle Control



TwinSelect In Cab Nozzle Control - Nozzle Body

A—Bank 1 (Nozzle Preset 1) B—Bank 2 (Nozzle Preset 2 to 5) C—Revolving Nozzle Holder

The nozzle control option gives the operator a choice of nozzles to spray from, either Bank 1 or Bank 2 from within the cab while the master valve is open (spraying). This is ideally suited for switching between fine and course droplets to reduce drift when spraying at the field edge or when near water. This is a factory installed option for pressure circulation booms.

For further information operation and control see **TwinSelect In Cab Nozzle Control** in the **GreenStar Sprayer Control System** section.

NOTE: For, a triple fold spray boom the second segment (middle spray boom arm) requires nozzle extensions for Bank 1 and 2.

Position Bayonet Caps on Nozzle Holders



A—Protective Cap

WZ290101585-UN-08NOV02

NOTE: Do not use the protective cap placed in the nozzle body as "blind" position, the cap will be pushed out of the nozzle body. Crop damage may occur.

The 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 filled 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 e.g. with a small screwdriver.

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, etc.

For further information contact your local dealer.

WZ00232,0000581-19-05MAR15

Replacing Nozzles

NOTE: 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. Therefore, it is extremely 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. However, 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 disease. This can require another trip across the field with the subsequent fuel and labor costs, as well as the use of more chemical or pesticide. This added expense is much more than the expense of replacing nozzles.

WZ00232,0000357-19-14JAN15

Checking and Replacing Worn Nozzles



A—New Spray Nozzles B—Worn Spray Nozzles

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 very erratic output overlapping and under applying.

A major cause of improper spray application is nozzle wear. Maintenance and timely inspection helps to identify worn nozzles and extend service life.

Over-application can 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 impact on crop yields

WZ00232,0000358-19-14JAN15

Calibrating Nozzles

Frequency of Calibration

Even though a sprayer's operation can be theoretically

C—Damaged Spray Nozzles

determined using mathematical formulas, there are still many reasons to verify that the output is what it should be. For example,

- wear (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 adequate for accurate 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 sprayer's 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

Verifying the results of an adjustment is standard procedure for all John Deere products. Never make adjustments to a sprayer without then 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

WZ00232,0000359-19-21OCT11

Filling Rinse Water Tank



WZ290102423-UN-27NOV13



WZ290102424-UN-27NOV13

A—Fill Connection Cap

- **B—Shut-Off Valve** C-Rinse Water Tank Level Indicator
- 1. Remove rinse tank fill connection cap (A).
- 2. Connect filling hose and open shut-off valve (B).
- 3. Fill the tank to the desired level, check the level indicator (C) which is located on the left side at the rear of the cab. The indicator is graduated in 50 liter intervals. The tank is also fitted with an overflow (the outlet is located on the other side of the vehicle to the left side of the fuel tank).
- 4. After the tank has been filled, close the shut-off valve (B).
- Remove the filling hose.
- 6. Refit fill connection cap (A).

Alternatively fill the tank via the filling cap situated on top of the tank.

WZ00232,00004A9-19-27NOV13

Manual Filling of the Solution Tank

- 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.
- **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: To improve the filling process set the agitation ON to remove the air from the system more quickly. Switch OFF agitation when no longer required.

Instructions on the manufacturer's container label, regarding mixing proportions, should be read and strictly followed. The concentrate should not be poured into the empty tank.

Filling Solution Tank - Without Using Filling Connection

NOTE: Refer to the Quick Reference Chart supplied with the sprayer to see the valve settings required for filling.

Use the following procedure to fill the solution tank through tank lid:

- 1. Open the tank lid.
- 2. Fill the tank to about half full with clean water.
- 3. Add the chemical concentrate (rinse the empty container with clean water).
- 4. Finish filling the solution tank with clean water.

Keep spray material away from skin. If spray material comes in contact with the body, wash it off immediately with clean water and detergent.

Filling Solution Tank - Using the Filling Connection

NOTE: Refer to the Quick Reference Chart supplied with the sprayer to see the valve settings required for filling.

40-57

Use the following procedure overview to fill the solution tank with the filling connection:

- 1. Connect the filling hose.
- 2. Set the **Pressure Selection Valve** to **Pressure less Filling**.
- 3. Place the Suction Selection Valve to Closed.
- 4. Open the shut-off valve on the Filling Connection.
- 5. Put the Return Selection Valve to Return flow to the Tank.
- 6. Engage the solution pump at low rpm (300) and increase for filling process.
- 7. Monitor the filling process with the Liquid Level Indicator.
- 8. At this point chemicals can be added, See **Chemical Inductor** in this section for further information.
- 9. When filling is complete stop the solution pump and close the **Filling Connection**.

Keep spray material away from skin. If spray material comes in contact with the body, wash it off immediately with clean water and detergent.

WZ00232,00005D9-19-29MAY15

Manual Drain







Drain Valve Location

A—Rope with Handle B—Drain Valve

> CAUTION: Drain the solution tank in a proper area to avoid personal and environmental contamination. Wear personal protective equipment for this procedure.



The tank can be drained with a remote controlled drain valve operated by pulling up rope (A) on top of the tank. The valve is spring loaded and will only stay open as long as the rope is pulled. Stow the handle after use.

The manual drain valve is in addition to the main electrically operated drain for the solution tank operated via the SolutionCommand panel. See **Draining Solution Tank** in the **Operation of the Machine** section for further information.

WZ00232,00004AE-19-19NOV13

System Rinse



A—System Rinse (Softkey [D]) B—Select Rinse Program C—Filter Cleaning D—Machine Rinsing

To add cleaning and rinsing the machine the **System Rinse** screen (A) has two options to select from:

- Filter Cleaning
- Machine Rinsing

Filter Cleaning



- A-System Rinse (Softkey [D]) **B—Select Rinse Program - Filter Cleaning**
- C—On Screen Instructions
- D--Start Button
- -Cancel Button Returns the Master/Circulation Valve to F-**Original Position**

To assist in cleaning the filter this programme isolates the solution tank (even when full).

Before starting the programme ensure that the:

1.PTO or the hydraulic pump drive is OFF

- 2.(Manual) agitation is OFF
- 3. Tank/Pump Selector Valve is set to return flow to suction side of the pump.
- Section valves are closed.

Follow the on screen instructions (C) to set the machine for cleaning the filter:

Ensure:

- PTO or hydraulic pump drive is OFF
- Manual agitation is OFF
- Tank/Pump Selection Valve in position to return liquid back to Suction Side of the Pump
- Sections vales are closed
- Suction valve is set to the closed position

Press Start (D) when ready to clean the filter. To stop the process at anytime press the **Cancel** button (E).

See Dilution of Residual Liquids and Cleaning Procedures, Agitation and Tank/Pump Selector Valve in this section for further information.

Machine Rinsing



A-System Rinse (Softkey [D])

- -Select Rinse Program Machine Rinsing B-
- C. -On Screen Instructions
- D--Electric Agitation Button - Switch OFF
- E—Increase Regulator Pressure F—Decrease Regulator Pressure
- G--Start Button
- -Cancel Button Returns the Master/Circulation Valve to H-**Original Position**

The rinse system will allow the rinsing of all lines and prevent backflow into tank on machines with either the Ring Line or the Pressure Circulation system. The Master valve can be opened to spray out the liquid while the pressure can be controlled manually via softkeys labelled (E) and (F). Note when this function is active on a Ring Line or the Pressure Circulation machine, the return line from the center-frame to the tank will not be rinsed.

This feature allows the operator to check other information such as L/ha (using the **Home** softkey) without stopping the programme. A status message will be shown that the programme is still active.

Follow the on screen instructions (C) to set the machine for rinsing:

- Start will set the Master/Circulation Valve to the Spray Position. Pressure will increase.
- Check manual agitation and return flow setting at the operator station for machines with manual agitation control.
- Set the Suction Valve to suction from the Rinse Water Tank

Press Start (D) when ready to rinse the machine. To stop the process at anytime press the Cancel button (E).

See Agitation and Tank/Pump Selector Valve in this section for further information.

WZ00232,00005DA-19-29MAY15

System Rinse with AutoDilute

AutoDilute is a factory installed option that can be fitted to the M900 series trailed sprayers. The system fully executes a sequential dilution and spray procedure from the cab with the most efficient use of the rinse tank content to minimize chemical pollution.

System Composition

A separate hydraulically driven pump (80 L/min) provides clean water from the rinse tank to the solution tank rinsing nozzles to dilute the solution tank content.

The diluted tank content is circulated through the complete sprayer plumbing including spray boom (up to section valves with ring line circulation and up to the nozzles with pressure circulation) using the piston diaphragm pump without spraying from the nozzles.

The AutoDilute calculator considers:

- The dead volume of the entire sprayer
- The dead volume of the boom
- The actual tank content
- The rinse tank content
- The clean water required for proper dilution, calculating the number of cycles to ensure a dilution factor X (depending on specific country legislation and chemicals used)

AutoDilute Components



A—Hydraulic driven water pump

WZ290700115-UN-30MAR10

Hydraulic Driven (Rinse) Water Pump: The hydraulic driven water pump is located below the solution tank. The pump has a direct connection to the rinse water tank. The pump supplies the solution tank rinse nozzles and delivers rinse water into the solution tank. To run the AutoDilute System effectively, ensure that there is a constant oil flow from the tractor to the sprayer.





CAUTION: In some countries there are regulations for the dilution factor, with which the remaining quantity can be deployed to the field.

CAUTION: In some countries it is not allowed to drain the remaining quantity. There are regulations for the dilution factor.

IMPORTANT:

Pay attention to the following points:

- Crop protection chemicals and spray solutions which adhere to the tank walls, hoses and spray lines need to be cleaned more intensively with cleaning agents and require longer rinsing.
- Cleaning agents can be added to the rinse tank at the beginning of the cleaning procedure.
- The more rinse water is used, the better the residual spray liquids will be diluted.
- It is recommended to perform the cleaning procedure twice if the machine is strongly polluted.
- In order to avoid draining undiluted residues, 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.

Select the AutoDilute System



NOTE: Ensure that all boom sections are enabled (appear black on the display), John Deere Section Control is turned Off, and the Spray Master Valve is closed.

To enter AutoDilute setting on the John Deere display system use the softkeys **Job Settings** [G] and **AutoDilute** [D].

In the field **Select Rinse System** on the **System Rinse** screen you can select between two different rinse operations:

• **AutoDilute** for rinsing and diluting the liquid on the complete machine.

- WZ290401520—19—17JUN11
- **ContinuousDilution** system to dilute the liquid on a machine, while spraying out the solution at the same time. Two different modes are available:
- ContinuousDilution with steps.
- ContinuousDilution without steps.
- Filter Cleaning isolates the filters from the solution tank for cleaning.
- **Machine Rinsing** for rinsing without circulation back to the solution tank.

Setting and Working with the AutoDilute System



System Rinse - AutoDilute

WZ290401520—19—17JUN11

 AutoDilute – function and parameter setting The functionality of the AutoDilute system is adjusted with three parameters.

- **Dilution Factor Spraying**: with this value you select with which dilution factor the remaining quantity in the solution tank is deployed after the first cycle of AutoDilute. No dilution occurs if a 1 is set in this field.

CAUTION: In some countries there are regulations for the dilution factor, with which the remaining quantity can be deployed to the field. The default value is a dilution factor of 6. - **Dilution Factor Draining**: with this value you select the dilution factor up to which the liquid in the system is diluted finally after all cycles have been completed.

CAUTION: In some countries it is not allowed to drain the remaining quantity. There are regulations for the dilution factor (the default value is 100).

- Rinse Tank Content has to be entered as a parameter in order to calculate the cycles required.



AutoDilute Start

• Working with AutoDilute

To thoroughly clean the sprayer, do the following:

- 1. Make sure that the solution tank has been sprayed completely empty, leave the solution pump running.
- 2. Enter **System Rinse** on the John Deere display and select rinse option **AutoDilute**.
- Enter the parameters for Dilution Factor Spraying, Dilution Factor Draining, and Rinse Tank Content.
- Press Calc. Rinse to check if the desired rinsing is possible with the preselected parameters and quantities.
- 5. If the desired dilution factor is possible, the number of cycles is shown on the display. To enter the first cycle press **Start**.
- 6. The field **Desired Tank Content** shows how many liters are needed from the rinse water tank to run the calculated cycles. Press **Start** to continue.
- The first cycle commences. The remaining quantity in the system is diluted to the **Dilution Factor Spraying** in the first cycle (factor 6 shown).
- After finishing the first cycle, the diluted solution in the tank has to be sprayed out by the operator. The solution is diluted to the selected **Dilution Factor Spraying** (factor 6 shown). Open the master valve to spray out the solution completely.
- 9. Between the cycles the remaining quantity has to be

sprayed out. The actual dilution factor is displayed to the operator after every cycle.

10. During the following cycles, the dilution of the remaining quantity continues in the same way until the **Dilution Factor Draining** is reached.



1. - Start Process

System Diluting	
1 2	1
Dilution 6 Factor	I
Desired 150 Tank Content	I
Cycle 1 of 3	I
Dilution has started. Tank filling is in progress.	I
///	
WZ290401440 WZ290401440—19—04.	JUL
2 In Progress	
System Diluting	
1 2	1
Dilution 6 Factor	
Cycle 1 of 3	I
Cycle 1 of 3 Spray the solution tank empty now and run the system rinse again.	

3. - Spray Solution Tank Empty

System Diluting		
Desired Tank Content	125	
Cyc le	2 of 3	
Press Start to the dilution	continue in process.	
1//	Start	
0401442		

4. - Start Next Cycle

The operator can decide after every cycle, to stop the AutoDilute process 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.

AutoDilute Dead Volume Factory Settings



Factory Settings - Boom 1 Tab

WZ290401445—19—08SEP10

CAUTION: The correct settings must be entered in "Factory Settings" for the machine to operate properly. Three parameters are used: **Boom Dead Volume** on **Boom 1** tab, **Machine Dead Volume** and **Dilute Pump Capacity** on **Tank 2** tab.


Factory Settings - Tank 2 Tab. Machine Dead Volume - 30 L, Dilute Pump Capacity - 80 L

The following table for M900 series give the values for

the relevant fields in **Factory Settings** for each model of machine and the configuration.

Model M944, M952, M962, M944i, M952i, & M962i Ring Line and Pressure Circulation System	Boom Dead Volume in liter	Machine Dead Volume in liter (2 Pumps)	Dilution Pump Capacity in L/min
Double folding boom			
24 / 12 m with 4 sections	45	30	80
24 / 12 m with 6 sections	46	30	80
24 / 12 m with 8 sections	46	30	80
27 / 15 m with 9 sections	49	30	80
28 / 14 m with 7 sections	51	30	80
28 / 14 m with 8 sections	51	30	80
30 / 15 m with 9 sections	53	30	80
Triple folding boom			
27 / 18 m with 7 sections	49	30	80
27 / 21 m with 9 sections	49	30	80
28 / 20 m with 7 sections	51	30	80
30 / 21 m with 9 sections	53	30	80
32 / 21 m with 8 sections	55	30	80
33 / 21 m with 9 sections	56	30	80
33 / 21 m with 11 sections	56	30	80
36 / 24 m with 9 sections	58	30	80
36 / 24 m with 12 sections	58	30	80
39 / 27 m with 9 sections	60	30	80
39 / 27 m with 13 sections	60	30	80
40 / 27 m with 13 sections	60	30	80

Setting and Working with the ContinuousDilution System

System Rinse		
Select Rinse Programme	Continuous Dilution	
Continuous Dilutio	on:	
Dilution Facto	r 2	ゑ■ 炎
Amount of Rin Water to U	se 300	
Make sure that of fresh water rins	sufficient amount is available in the e tank.	
When dilution i this page and p	s ready, return to ress "Stop" button.	
///	Stop Start	8:47

System Rinse - ContinuousDilution

WZ290700132-19-01JUN10

CAUTION: In some countries there are regulations for the dilution factor, with which the remaining quantity can be deployed to the field.

NOTE: Ensure that all boom sections are enabled (appear black on the display), John Deere Section Control is turned Off, and the Spray Master Valve is closed.

ContinuousDilution – function and parameter setting Two different modes are available:

• ContinuousDilution with Steps

Dilution Factor Spraying: When entering a value of **2** or **higher** for the dilution factor, the machine will perform the first dilution step.

It will fill in the amount of clean water that is needed via the tank rinse nozzles and the AutoDilute pump will dilute the whole machine liquid to the factor entered in Dilution Factor Spraying (agitation will be on, return back to tank).

When done, and the master valve is opened while on the main page, the machine can spray out the liquid but at the same time adding rinse water to the solution tank via the tank rinse nozzles Amount of Rinse Water to Use: water to use for the whole process.

When the amount of rinse water to use is used, the pump will be switched off. Make sure that a sufficient amount of fresh water is available in the rinse tank.

• ContinuousDilution without Steps

Dilution Factor Spraying: When entering a value of **0** or **1** for the dilution factor, the machine will go to the main page. When spraying, clean water is filled into the solution tank via the tank rinse nozzles and the AutoDilute pump.

Amount of Rinse Water to Use: water to use for the whole process.

When the amount of rinse water to use is used, the pump will be switched off. Make sure that a sufficient amount of fresh water is available in the rinse tank.

Messages in the message field on sprayer main page give information to the operator:

- ContinuousDilution active: The continuous dilution system is active. To stop, go back to Job Settings, System Rinse, ContinuousDilution, press stop.
- Tank level increasing check speed/rate: More flow is entering the solution tank than flow going out

via the spray nozzles. The operator has to ensure if this is desired or not.

- Tank level decreasing check speed/rate: More flow is going out via the spray nozzles than entering via the tank rinse nozzles. The operator has to ensure if this is desired or not.
- **Dilution pump is stopped:** The total amount of rinse water that was to be used is used and the pump is stopped. The system will stay in the continuous dilution mode.
- Close master to allow dilution: To ensure that liquid in agitation and return lines is also diluted, the master valve must be closed regularly. This message will come after a period, that is depending on the flow the machine is spraying. When master valve is closed, agitation will go on, return will go back to tank.

The operator is allowed to open the master valve before the message comes and the system will remain in the continuous dilution mode. The message will not come anymore if the operator opens/closes the master valve before/after the message appears.

- Open valve to spray: Spray out the diluted solution. Agitation will go off, and return will go back to suction side of pump.
- Not all sections open incomplete dilution: Not all section valves are open, which will affect the dilution system.



A—System Rinse (Softkey [D])

- B-Select Rinse Program Filter Cleaning
- C-On Screen Instructions
- D—Start Button
- E—Cancel Button Returns the Master/Circulation Valve to Original Position

To assist in cleaning the filter this function isolates the solution tank (even when full).

Before starting the programme ensure that the:

- 1.PTO or the hydraulic pump drive is OFF
- 2.(Manual) agitation is off

3. Tank/Pump Selector Valve is set to return flow to suction side of the pump.

4. Section valves are closed.

Follow the on screen instructions (C) to set the machine for cleaning the filter:

Ensure:

- PTO or hydraulic pump drive is OFF
- Manual agitation is OFF
- Tank/Pump Selection Valve in position to return liquid back to Suction Side of the Pump
- · Sections vales are closed
- Suction valve is set to the closed position

Press **Start** (D) when ready to clean the filter. To stop the process at anytime press the **Cancel** button (E).

See Dilution of Residual Liquids and Cleaning Procedures, Agitation and Tank/Pump Selector Valve in this section for further information.

Machine Rinsing



A—System Rinse (Softkey [D])

B—Select Rinse Program - Machine Rinsing

C—On Screen Instructions

- D—Electric Agitation Button Switch OFF
- E—Increase Regulator Pressure
- F—Decrease Regulator Pressure
- G-Start Button
- H—Cancel Button Returns the Master/Circulation Valve to Original Position

The rinse system will allow the rinsing of all lines and prevent backflow into tank on machines with **Ring Line**. The **Master** valve can be opened to spray out the liquid while the pressure can be controlled manually via softkeys labelled (E) and (F). Note when this function is active on a **Ring Line** machine, the return line from the center-frame to the tank will not be rinsed.

This feature allows the operator to check other information such as L/ha (using the **Home** softkey) without stopping the programme. A status message will be shown that the programme is still active.

Follow the on screen instructions (C) to set the machine for rinsing:

- Start will set the Master/Circulation Valve to the Spray Position. Pressure will increase.
- Check manual agitation and return flow setting at the ٠ operator station for machines with manual agitation control.
- Set the Suction Valve to suction from the Rinse Water Tank

Press Start (D) when ready to rinse the machine. To stop the process at anytime press the Cancel button (E).

See Agitation and Tank/Pump Selector Valve in this section for further information.

WZ00232,00005DB-19-20DEC16

Hydraulic Pump Drive (Option)



Hydraulic Pump Drive



Hydraulic Lines Identification

- A—Hydraulic Motor
- -Hydraulic Block with Check Valve and Over Speed Protection R-
- C-Return Line

- **D**—Pressure Line
- E—Piston Diaphragm Pump with Speed Sensor
- F--Pressure Line Stowed - Red Cap labelled with a P Decal
- G-Return Line Blue Cap labelled with a T Decal

IMPORTANT: Refer to the tractor Operator's Manual for the hydraulic connection for a hydraulic motor or hydrostatic drive for correct operation.

IMPORTANT: Always start the pump at the lowest possible speed, idle the tractor engine.

The system comprises of a hydraulic motor (A) which has a check valve fitted in the hydraulic block (B) to prevent reverse rotation of the motor if the hydraulic connections are mixed up. The system is equipped with an over speed valve to protect the piston diaphragm pump (E). The hydraulic pump drive has a separate system from that of the main hydraulic system for the sprayer. This system is only intended for use with sprayers that are fitted with the Electrical-Hydraulic system. See Operation of Hydraulic Functions in the Preparing the Tractor section.

The hydraulic pump dive system will work with all tractors that have a closed circuit (CC). For open center (OC) and load sensing (LS) consult your John Deere Dealer for tractor compatibility. The hoses have decals placed on them to identify functionality and for correct connection to the tractor hydraulics system.

Hydraulic hose connection for the pressure line (F) is through the tractor SCV system with a 1/2" connection. The return line (G) is also connected to the tractor SCV system through a 1/2" connection. The pump speed in rpm can be seen on the display in the Sprayer - Main page when the Solution Pump Speed icon is selected (see Sprayer - Main in Sprayer Control System section). In the Diagnostics screen for the Sensor Status the rpm of the pump can be seen in Solution Pump Speed.

For adjusting the Over Speed Protection see Hydraulic Pump Drive - Over Speed Protection in the Preparing the Tractor and Adjustments section.

WZ00232,000054D-19-15SEP15

Automatic Trailing Functions



WZ290401670

WZ290401670—UN—29JAN15







Manual Steered Axle Direction Control

A—Button 1 - Selection Switch

B—Button 2 - Automatic and Manual Steered Axle Control C—Manual Steered Axle Direction Control D—Steered Axle - Auto or HMS

The MFC and GreenStar display are used to control the automatic Steered Axle.

Button 2 (B) selection controls the manual and two types of automatic steering of the Steered Axle. Automatic **Auto** and Automatic **HMS** (Headland Management System) can be selected on the GreenStar display on **Job settings - Job 2** Tab **Steering** (D) field. Press **Button 2** for at least 1 second to switch to automatic mode.

Button 1 (A) when used in conjunction with the **top** or **bottom** on the manual Steered Axle direction control (C) will center the Steered Axle.

Manual Steered Axle direction control (C) has two selections, the **top** of the switch will steer the axle left while the **bottom** of the switch steers the axle right. This mode can be used to steer and correct the axle, e.g. when working on hillsides to correct the sprayer against drifting away or to manoeuvre the sprayer in field corners. When **top** or **bottom** of switch (C) is used in conjunction with **Button 1** (A), this will center the Steered Axle. During the process, the red and green indicators on the display will show the machine is centering.



WZ290700032—19—17JUN13

On the lower left of the **Sprayer Main** page (softkey **[F]** on GreenStar display), there are three symbols to indicate the current mode of the Steered Axle. The three circles will indicate which direction the Steered Axle is currently steering, the left or right circle will turn RED to show which is active and the centered position (middle symbol) will show a GREEN circle when active. A symbol of the axle and wheels of the sprayer will also appear with the active circle to show the steering direction.

The steering mode is indicated with a hand for manual, **AUTO** for automatic and **HMS** for automatic headland management system mode. When in either of the automatic modes the Steered Axle will be automatically steered so that the sprayer wheels follow the rear wheel tracks of the tractor exactly.

Spraying without HMS

When spraying in a straight line, it is recommended to switch OFF the tracking system (manual mode), to avoid excessive yawing of the spray boom.

The axle steering mode must be set to **AUTO** before turning at the field headland. The axle is then automatically steered. When starting on the next (straight) row, the automatic tracking system has to be switched OFF again by selecting manual mode (**Button 2**). When the manual Steered Axle direction control is used with **Button 1** (A) the Steered Axle centered, the sprayer runs straight behind the tractor.

Spraying with HMS

When the Steered Axle is set to **HMS** (Headland Management System) the operation of the Steered Axle at the headland, as described above, will be completely automatic when the Master valve is activated, as follows:

 Master valve ON (spraying), the Steered Axle will be switched OFF and the Steered Axle will be set back into central position. Manual steering can be used to perform hillside corrections. • Master valve OFF (turning), the Steered Axle will be switched to **AUTO** (automatic trailing) for making the turn at the headland.

When to use HMS or Auto

This is used for normal spraying in straight tramlines. It allows the operator to turn OFF the **Master** switch to stop spraying and the **Steering** is then automatically turn ON. When the headland turn is complete the **Master** is turned ON to spray and the Steered Axle locks when the steering is back in to the centre position.

Auto

Auto is used when the tramline is curved. The **Steering** is active all the time to follow the tramline.

If **Auto** is used on straight tramlines, **engage** and **disengage** Auto before and after the headland turn.

WZ00232,0000660-19-13DEC16

Axles



A—Suspended Axle

WZ290102359-UN-02NOV12

The 900 series trailed sprayers are equipped with different types of axles:

- fixed axle (10-bolts) for track width 1.80-2.10 m (with a maximum speed of 40 km/h)
- fixed axle (10-bolts) for track width 2.00 m (with a maximum speed of 40 km/h)
- fixed axle (10-bolts) for track width 1.95-2.25 m (with a maximum speed of 40 km/h)
- steered axle (10-bolts) for track width 1.80-2.10 m (with a maximum speed of 40 km/h)
- steered axle (10-bolts) for track width 2.00 m (with a maximum speed of 40 km/h)
- steered axle (10-bolts) for track width 1.95-2.25 m (with a maximum speed of 40 km/h)

The 10-bolt axles have a hub diameter of 280 mm and a wheel bolt diameter of 335 mm.

The axles comprise drum brakes with an internal speed sensor. The axles are fitted to the frame with a double

link connection. The axles are suspended with special polyurethane dampers. The axle suspension is completely free of maintenance.

WZ00232,00003DA-19-21MAY15

Sprayer Control System

Displays and Control



PC23195—UN—18OCT16 John Deere 4640 Universal Display



GreenStar



WZ290700080

WZ290700080—UN—26MAR10 GreenStar



John Deere Implement Display 1100

The following section provides specifications and operating parameters for the John Deere displays and sprayer control system.

The displays for the control system are an electronic module with a general purpose display and general purpose control (terminal) that can be used to display 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 is based in the receiver box of the machine and sends the information to the John Deere displays via the CAN bus between the tractor and the sprayer.

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

NOTE: All John Deere controllers include the Multi-Function Control lever **MFC** to setup and operate the sprayer.

WZ00232,0000430-19-16AUG18

John Deere Implement Display 1100 Operation



WZ290102379

WZ290102379—UN—01AUG13 1100 Display Main Features

A—Thumb wheel B—Application button C—Home button D—Accept button

The **Thumb Wheel** (A) provides on screen navigation and select function. To select the item highlighted on the screen press center of the thumb wheel.

The **Application Button** (B) toggles between the application (sprayer) control system and the display setup.

The **Home Button** (C) when pressed returns to the previous screen and if held captures a screen-shot for later viewing. The Cab harness must first have a USB storage device attached.

The **Accept Button** (D) is used to acknowledge the onscreen information for example an information or warning screen.

Softkeys A to H



WZ290102380

WZ290102380-UN-01AUG13

Eight softkeys are arranged in two vertical columns with A to D on the right side of the screen and E to H on the left.

The softkeys have the allocated function when an icon appears on screen beside the button. The layout of the 1100 display is similar to that of the GreenStar displays (which have ten softkeys), changing between 1100 display screens gives access to all available softkey selections that appear on the GreenStar displays. All the major processes are present on each of the function areas apart from **Sprayer Main** which does not show [E] **Machine Settings**.

Main Softkey Used:

A—Sprayer Main Page
B—Job Settings
C—Performance Data
D—Diagnostics
E—Machine Settings (not shown)
Also shown on Sprayer Main screen:

F—Boost Mode
G—Auto/Manual Pressure
H—Section Handling
The M700 series sprayer configuration with the 1100 display is not able to support the boom working lights feature as described later for the GreenStar displays.

NOTE: The GreenStar display format is used to the described the **Sprayer Control System** function in the rest of this section.

Back of the 1100 Display



Back of Implement Display 1100

General Information

A-Display mounting holes **B**—Display connector

The back of the display contains:

- Display Mounting Holes—attach to bracket on machine (M5 screw).
- Display Connector-connects the vehicle wiring harness with the display for system power and communication.

WZ00232,0000431-19-27AUG13



1—Display field -Menu field (softkevs) 2-

3—Time indicator

The John Deere Display is a multipurpose display with easy-to-use, menu-driven commands, with several information display fields. The page shown in display field (1) is the standard (default) sprayer main page layout. This can be changed to suit your needs and requirements via drop-down menus (see Main Page Layout (softkey [A]) in Machine Settings (softkey [H]).

Menu field (2) softkeys will cause another page to appear on screen or will start a process:

4—Home page

5—Application menu 6—Message field

- A—BoomTrac[™] or Automatic Boom Control Auto/ Manual
- B-Boost Mode
- **C**—John Deere Section Control ON/OFF (Option)
- D—Section ON/OFF Softkey Layout
- E—Regulation Setting Auto/Manual
- F—Sprayer Main Page (shown)
- **G**—Job Settings
- H-Machine Settings
- I-Performance Data

WZ290401692-UN-23AUG16

J—Diagnostics

Time Indicator (3) displays the current time.

Home page (4) allows operators to view their own assembled Home Page which is constructed with Layout Manager in the Application Menu (5).

The **Application Menu** (5) shows the operator a menu list of available applications.

Time indicator (3), **Home Page** (4) and **Application Menu** (5) appear on all screens.

Message Field (6) allows the operator to view cautions and warnings that may occur 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 M700 and M900 series versions of sprayers is designed for the Implement Display 1100 and the GreenStarTM 2 & 3 displays. Compatible (to ISO 11783) ISOBUS displays can also be with this application. The layout of the screens will be a slight variation on those shown in this documentation.

NOTE: There is **NO** Power On/Off switch for the display. Power is applied when the tractor is turned ON. At initial start-up the display will show the **Sprayer** -**Main** screen.

WZ00232,0000432-19-24AUG18

GreenStar is a trademark of Deere & Company

Sprayer - Main



Sprayer - Main can be found by selecting softkey [F] in the Menu field.

The layout display for each of the 6 display fields can be selected from a drop down menu (see **Main Page Layout** (softkey [A]) in **Machine Settings** (softkey [H]).

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 Tilt Indicator**. The indicator shows the current status of the boom tilt in relation to the sprayer. Manual adjustment of the tilt is done by means of the switch on top of the multifunction control (MFC).

When in manual mode, softkey [B] **Boost Mode** will not be visible.

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]. For the TwinSelect Automatic In cab nozzle control option this field is selectable when pressed to give a pop-up screen for Bank 1 or Bank 2 selection.

WZ290401579—UN—07DEC11

See **TwinSelect Automatic In Cab Nozzle Control** in this section for further information.

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. The spray quality can be either **Very Fine**, **Fine**, **Medium**, **Coarse** or **Extremely Coarse**.

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:

- Pendulum Lock
- 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) and the output is 12 V with a maximum current of 10 amp. Example: beacon light and additional lighting).

For further information see Agitation, Work Lights and F-Switch in this section.

Sprayer - Main Symbol List

 (\mathbf{A}) ⊕/∥ B C D E F G H L J K W/R L M N 0 Ρ Q Ынх

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 M900) K—Spray Boom Working Width L—Current Performance M—Total Sprayed Volume N—Spray Boom Height (Automatic Boom Control Only) O—Agitation Operating Pressure (Not used on the M900) P—Pump Speed

Q—Rinse Water Tank Contents (Not used on the M900)

 $\mathbf{A}-\mathbf{Applied}$ rate: shows the actual application rate in L/ha.

B — **Target rate**: shows the target application rate in L/ Ha. When spraying (main shut-off valve open), the operator can go directly to a boost selection screen (Boost Mode) by selecting softkey [D]. When not spraying, the operator can go to the **Job Settings** Menu by selecting softkey [G].

C — **Current speed**: shows the speed of the sprayer in km/h. If a simulated speed has been selected (see **General Settings** tab in **Machine Settings**) and the sprayer is not running, the simulated speed is shown.

D — **Sprayed area**: shows the sprayed area in hectares.

E — **Remaining area**: shows the remaining area that can be sprayed with the current tank content and actual application rate.

F — **Sprayed distance**: the distance 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.

 $\mathbf{H} - \mathbf{Actual}$ 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 M900.

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 option is fitted.

O — **Agitation Operating Pressure**: shows the working pressure of the agitation in bar. Not used on the M900.

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

Q — **Rinse Water Tank Contents**: shows the contents in liters. Not used on the M900.

WZ00232,00005DF-19-24AUG18

TwinSelect Automatic In Cab Nozzle Control



WZ290401644

WZ290401644-UN-18DEC13 Sprayer Main - TwinSelect Automatic Nozzle Control



WZ290401772-UN-07AUG18 TwinSelect Automatic - Banks 1 & 2 Operation Selection

- A-Nozzle Control Selectable Field
- -Select Bank 1 (Nozzle Preset 1) for Spraying B-
- -AUTO Button is only visible when Automatic Switching is
- Possible -Cancel Button - Clears the Pop-Up Screen
- D.
- E-Select Bank 1 and 2 to Spray Together (DUAL) F-Select Bank 2 (Nozzle Preset 2 to 5) for Spraying

To change the nozzle bank press the Nozzle Selection field (A), a pop-up screen appears. Select the bank required by pressing the relevant button.

- B-Select Bank 1 (Nozzle Preset 1) for Spraving
- C—AUTO Button is only visible when Automatic Switching is Possible
- D-Cancel Button Clears the Pop-Up Screen
- E—Select Bank 1 and 2 to Spray Together (

F-Select Bank 2 (Nozzle Preset 2 to 5) for Spraving The nozzle currently in the Nozzle Preset menu for that bank is selected and displayed in the nozzle selection

field (A). Ensure for bank 2 that the required nozzle selected is in the Nozzle Preset menu and the actual nozzle on the boom is in the spraving position. The Nozzle Preset menu can be found in Machine Settings on the Boom tab. See Nozzle Preset with TwinSelect Automatic In Cab Nozzle Control in this section for further information.

Nozzle Control field (A) and Job 1 tab reflect the selection made from Nozzle Selection Pop-Up screen. There are four possibilities for the field:

- Bank 1 Nozzle Preset 1 (nozzle number shown)
- Bank 2 Nozzle Preset 2 to 5 (nozzle number shown)
- DUAL Both Banks 1 and 2 work in unison
- AUTO Automatic Switching enabled, TwinSelect Automatic Settings button on Job 1 tab

Job 1 Settings for TwinSelect Automatic Nozzle Control



Job 1 - TwinSelect Automatic Settings



TwinSelect Automatic Switching Settings Screen

A—TwinSelect Automatic Settings Button

- B-Current Selected Nozzle and Bank or Mode (DUAL/AUTO)
- C—Bank 1 Spray Nozzle Minimum and Maximum Pressure Range in bar
- D—Bank 2 Spray Nozzle Minimum and Maximum Pressure Range in bar
- E—Automatic Switching Message Possible or Not Possible with Current Settings
- F-Green Arrows Indicating Automatic Switching is Possible

G—Minimum Speed in km/h for selected nozzle H—Maximum Speed in km/h for selected nozzle I—Minimum Speed in km/h for combined selected nozzles 1+2 J—Maximum Speed in km/h for combined selected nozzles 1+2

Job 1 tab shows the TwinSelect Automatic Settings Button (A) and current selected Preset Nozzle (B). Pressing TwinSelect Automatic Settings Button (A) opens the settings screen for TwinSelect Automatic Switching. The current Preset Nozzle field (B) also shows either Bank 1, Bank 2, when in DUAL Mode (Bank 1+2) or in Automatic Switching Mode.

TwinSelect Automatic Settings screen has various fields to insert the minimum and maximum pressure (bar) for the preset nozzle in the Bank 1 (C) and for Bank 2 (D).

After the settings are entered for each nozzle on the banks (C) and (D). The bar graph shows the minimum (G) and maximum (H) speed for each Bank and the combination (I) and (J). When there is more than a 0.5 km/h overlap between the banks Automatic Switching is possible. A message (E) tells the operator what is possible. Vertical green arrows (F) also shows that Automatic Switching is possible.

When there is not enough overlap to enable Automatic Switching, adjust the pressure ranges for Bank 1 and 2 until Automatic Switching is possible. Stay within the working pressure recommended for the type of nozzle.

The previous settings are retained from the last use of the TwinSelect Automatic Settings.

Position of Edge Nozzle TwinSelect



Position of Edge Nozzle - Machine Settings - Boom (Tab)

WZ290401775-UN-13AUG18

A—Machine Settings Softkey B—Boom Tab

In Machine Settings (A) on the Boom Tab (B), select which Bank the Edge Nozzle is positioned (Bank 1 or Bank 2) in field (C).

C—Position of Edge Nozzle TwinSelect - Bank 1, Bank 2 or Both Banks

Selecting 3 into the field (C) assigns the edge nozzle to both Banks. If either of the banks are active including both banks together are active, the edge nozzle is also active.

WZ00232,000051C-19-21DEC18

Section ON/OFF Softkey Layout



WZ290401579-UN-07DEC11



WZ290401457—19—10NOV08 Section ON/OFF Softkey Layout

Main Softkey Layout

Pressing softkey [D] from the Main Softkey Layout will lead 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 will be visible. Operating softkey will toggle the automatic or manual function of Boom Automatic Control.

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

Sequential Switching - Center to Outer Left [B] & Outer Right [G]: each section can be turned OFF sequentially from the center to the left outer sections [B] and to the right outer sections [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 - Outer Left to Center [C] & Outer Right to Center [H]: each section can be turned off sequentially from the left outer sections to the center [C] and from the right outer sections to the center [H] each time the softkey is pressed. All sections can be set ON by operating the IBS reset button on the multifunction control.

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

softkey will bring up another softkey menu for pressure settings control (see Pressure Setting Softkey Layout for further information).

Pressure Setting Softkey Layout [E]: selecting this



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 will change and a popup page will show the individual sections on the spray boom, each box has a position marked on it e.g. C (center) or L1 (left 1) and so on. Pressing the desired section will toggle its functional state, white backgrounds in the box indicates that it is disabled and with a black background that the section is enabled.

To remove the screen, press the **Enter** key on the bottom center of the popup.

WZ00232,000039C-19-24AUG18

Pressure Setting Softkey Layout



WZ290401579-UN-07DEC11



WZ290401603—UN—21DEC11

Pressure Setting Softkey Layout

Main Softkey Layout

Pressing softkey [E] from the Main Softkey Layout will lead 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 will be visible. Operating softkey will toggle 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] will lead to the Section ON/OFF Softkey Layout.

Regulation Setting Auto/Manual [E]: when in manual regulation, pressing **[E]** will change the operation mode to automatic regulation. Pressing **[E]** again will revert 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. Monitor the result on the sprayer main page.

Decrease Liquid Pressure [H]: press softkey to

WZ00232,000039D-19-24AUG18

Agitation, Work Lights and F-Switch



Agitation, Work Lights and F-Switch

WZ290401580-UN-07DEC11

1—Agitation Status ON/OFF and % of intensity 2—Work Lights ON/OFF

Agitation Status ON/OFF and % of intensity: this button is used to switch the electrical agitation ON or OFF. The button changes colour when active. Agitation Intensity is shown as a percentage in the button when active.

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

3—F-Switch (Free Function) ON/OFF

F-Switch (Free Function) ON/OFF is for an additional switched function as required by the operator for sprayer operation. The button changes colour 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.

WZ00232,00003FF-19-08NOV12

Boost Mode





WZ290700082-19-17JUN13

To get **Boost Mode** from sprayer main page select softkey [B]. The following softkeys will 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 is increased 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 is decreased by -10%.

Note that if the machine is set to manual, the softkey [B] for **Boost Mode** will not be visible.

OUCC020,0002449-19-20JUL10



WZ290401304—UN—19SEP06

Job Settings



WZ290700086

Job Settings allows the operator to prepare the sprayer for a new spray job. It can be entered by selecting softkey [G].

Three tabs are now visible on the display: **Job 1**, **Job 2** and **Agit.** (agitation performance control).

Job 1

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, etc.). The value in the window will change 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 (greyed out) and cannot be cleared (as it is used for data exchange with the documentation system).

Target Rate: which is in I/ha can be changed by selecting the field. A numeric keypad will appear, type in the required value and enter. The new value will now be used.

For the **TwinSelect Automatic In Cab Nozzle Control** selection option, the visible target rate is for the active

WZ290700086—19—17JUN13

selected nozzle. This might not be the nozzle visible in the selection box **Nozzle (Preset. . . . x)** on the display. When the nozzle is changed via the buttons 1 or 2 on the main page, the target rate for the selected nozzle will be used as stated in the **Machine Settings**, **Boom** tab, **Nozzle Presets**.

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 5 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 will appear, chose 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.

For the **TwinSelect Automatic In Cab Nozzle Control** selection option this field will only have Presets 2 to 5 for Bank 2 (Bank 1 has Nozzle Preset 1 allocated).

Density: is given in kg/l, 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 spraying with a pressure based regulation and when the specific gravity of the spraying liquid (e.g. liquid fertilizer) is different than 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 (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 SprayerPro automatic section control and registration of field operations (field totals) running on the sprayer (fields 1 to 16).

Control & Doc: for SprayerPro 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.

Please consult the manufacturer of the display if using a display other than a John Deere GreenStar[™] for proper functionality.

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.

Job 2



WZ290401698

A—Boom Height B—BoomTrac Working Mode C—Boom Headland Management D—Steering E—Boom Charge ON/OFF F—Boom Charge Speed (km/h) G—Boom Charge Width (%)

NOTE: For, Job 2 tab for John Deere TerrainControl[™] Pro and John Deere TerrainCommand[™] Pro see the Accessories Section of this manual.

Boom Height (A): displays the target nozzle height in

cm. If the machine is equipped with BoomTrac[™] 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

WZ290401698-UN-26AUG16

BoomTrac is a trademark of Deere & Company

target (crop or the soil).

See BoomTrac[™] or the Automatic Boom Height and Variable Geometry Control System (JD Preferred Partner) in **Accessories** for further information.

is added to the

BoomTrac Working Mode (B): select one of the following modes from the drop-down list: - **Tilt**; in this mode the boom tilt is automatically controlled by BoomTracTM.

- **Tilt + Height**; in this mode the boom tilt and boom height is automatically controlled by BoomTracTM.

Boom Headland Management (C): 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 will move to the height set for headland turns, see **Boom Height**. Used where the headland is empty to stop the boom over

tilting due to the height difference between crop and empty headland.

- **Raise & Tilt**; in this mode the boom moves to the height set for headland turns (see **Boom Height**) and the desired boom tilt position, see Boom Tilt Correction in Operation of the Machine.

NOTE: When the **Boom Headland Management** uses **Raise** in a function, the Raise Height [cm] is added to the Boom Height [cm].

Steering (D): two types of automatic steering of the drawbar can bee selected from the drop-down list: - HMS (Headland Management System see Automatic Trailing Function in Operation of the Machine.

- Auto see Automatic Trailing Function in Operation of the Machine.



WZ290401690

Job 2 with Boom Height Assist Option

WZ290401690-UN-30JUL15

A—Job 2 Tab B—Raise Height at Headland Turn [cm] C—Boom Headland Management ON/OFF

D—Steering E—Recirculation Pressure [bar]



WZ290401691

Job 2 without BoomTrac and Boom Height Assist

WZ290401691-UN-30JUL15

A—Job 2 Tab B—Steering

C—Recirculation Pressure [bar]

Boom Charge (Option)



- A—Boom Height B—BoomTrac Working Mode C—Boom Headland Management D—Steering
- NOTE: The Boom Charge option works with machines which have a Piston Diaphragm Solution Pump, an "i" Package, and Ring Line or Pressure Circulation Solution System present.

Boom Charge (E) sets a flow to ensure that one or more regulators are in position, close to the position which is required. When the Master Valve is opened the spray pattern is almost immediately at the required flow and pressure. The **Boom Charge** feature is design to be used with nozzle size 0.30 or larger. **Boom Charge (E)** is active 2 minutes after closing the Master Valve. After, the 2 minutes the system reverts to the default valve positions. The default value for the **Boom Charge Speed (km/h) (F)** (Spraying Speed) is 6 km/h and for **Boom Charge Width (%) (G)** is 80%.

IMPORTANT: Boom Charge requires that the Boom Charge Width % (G) is as close as possible to the actual proportion of the boom that is spraying. Having a balance between the two ensure the correction dosage is delivered from the spray nozzles while Boom Charge is active.

To activate Boom Charge select the check box (E). To

WZ290401698-UN-26AUG16

E—Boom Charge ON/OFF F—Boom Charge Speed (km/h) G—Boom Charge Width (%)

turn Off **Boom Charge** select check the box (E) again and the check mark is removed.

- 1. **Boom Charge OFF**; The **Spray Rate Regulator** (SRR) stays in last known position.
- 2. Boom Charge ON ; Boom Charge Speed (km/h) (F) is set to simulate the sprayer forward speed of a 'normal' run when the master valve is turned Off during the headland turn. Boom Charge (E) is active when the master valve is turned back ON and normal regulation has resumed. When the master valve is switched OFF, the system calculates and adjusts the SRR to a new position using the following inputs:
 - Boom Charge Speed (km/h) (F)
 - Nozzle Information
 - Target Rate
 - Boom Charge Width (%) (G) Percentage of boom length actually spraying. The percentage can vary as sections are disabled (or enabled) by the operator or by the Section Control (SprayerPro) options.

Boom Charge also works in conjunction with SprayerProTM or Section Control - OFF.

IMPORTANT: Entering in the Boom Charge Speed (km/h) a higher speed than the speed used during spraying can result in overdosing when Boom Charge is active. Overdosing can result when the Boom Charge Width % (G) is larger than the actual boom width.

Entering a lower speed than the speed used during spraying can consequently lead to an under dose condition. Droplet size changes as a result of the higher or lower solution system pressure.

Configure the Boom Charge Speed (km/h) (F) to the speed that the sprayer will start spraying after headland turn. Set the Boom Charge Width % (G) to the estimated number of active sections.

When Boom Charge (E) is used in combination with SprayerPro[™] or Section Control, the system is unable to 'see' how many sections have been switched Off by the SprayerPro[™] or Section Control software. By adjusting the figure in Boom Charge Width (%) (G) the operator can simulate the number of sections that are ON (similar to manually turning the section(s) ON or OFF). In this way the operator can control / avoid an under or overdose condition.

Set Boom Charge (E) to OFF when it is not required. Set to OFF when spraying has finished or when the Master Valve is OFF with the same speed and number of spray sections open.

With Boom Charge (E) ON, the Circulation Pressure is controlled via the Boom Charge Speed (km/h) (F). The higher the Boom Charge Speed (km/h) (F) setting and the Boom Charge Width % (G) the more pressure is available for Circulation Pressure (usually between 3 - 5.5 Bar). A higher Boom Charge Width results in more flow and a higher pressure. Circulation pressure is not visible when Boom Charge is ON.

Agit. (Agitation Control)



WZ290401643

A—Agitation Tank Level [L]

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]: set the required level in liters for the automatic agitation to stop. A caution message

WZ290401643-UN-03DEC13

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: to enable the automatic agitation stop check the box. Agitation will stop at the value set in the field above. A caution message Tank Agitation

SprayerPro is a trademark of Deere & Company

B—Auto. Agitation Stop

Stopped will be displayed on the screen, when the agitation has switched OFF automatically.

AutoFill Tank Filling

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

Automatic Tank Filling



Step 1 Automatic Tank Filling



Step 2 Automatic Tank Filling



WZ00232,00005E2-19-24AUG18

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 GreenStar 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 AutoFill Switch on the Solution System Panel.
- 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 AutoFill Switch on the Solution System 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 the AutoFill Switch on the Solution System Panel is ON.
Sprayer Main - when the AutoFill Switch on the

• Sprayer Main - when the AutoFill Switch on the Solution System Panel 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

See Filling Solution Tank in Operation of the Machine Section.

WZ00232,00004E1-19-02JUN15



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.

Nozzle Calculator

The nozzle calculator is a tool to help the operator make the correct job settings.

Target Rate: the target application rate (I/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.

WZ00232,00001F9-19-03SEP13



Machine Settings

WZ290700088-19-17JUN13



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 [H]. 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.

OUCC020,000244C-19-20JUL10

General Settings



WZ290700088

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

WZ290700088—19—17JUN13

selection, there is a corresponding wheel calibration pulse number. This allows quick selection of another set of wheels.

Hydraulic System selects the type of hydraulic system on the tractor, **Open Center**, **Closed Center** or **Load Sensing**. Enter the correct hydraulic system of the tractor which will pull the sprayer.

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

OUCC020,000244D-19-30OCT14

Boom Settings

Machine Se General	ettings Boom	Tank	Regul.	
	Section	R 1	\$	
Nozzl	zzles per Section e Spacing	6 50		
	[Cinij			123
Nozzle Presets	Out	er N. sets	BoomTrac	5:25am

WZ290700089

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).

WZ290700089—19—17JUN13

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.

Circulation Return Flow: Not Used.

Nozzle Presets: enter menu, a new screen will appear to change the nozzle preset configuration (nozzles on the sprayer).

Outer Nozzle Presets: enter menu, a new screen will appear to change the outer nozzle preset configuration (nozzles on the sprayer).

BoomTrac: enter menu, a new screen will appear to change the BoomTrac settings. This button is only visible if the BoomTrac system is fitted to the machine.

WZ00232,00003BD-19-21DEC11

Nozzle Presets



WZ290700090

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 preprogrammed 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

WZ290700090-19-26MAR10

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 (I/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).

OUCC020,000244F-19-20APR15

Nozzle Presets with TwinSelect Automatic In Cab Nozzle Control



WZ290401647

WZ290401647—UN—18DEC13 Nozzle Preset - Bank 1

幹 2	2 🔶	Nozzle Preset
\$	XR 80	Nozzle Type
¢	04 (Red)	Nozzle Size
]	1.29	Reference Flow [L/min]
]	2.00	Ref. Pressure [bar]
]	705	Target Rate Preset [L/ha]
]	75	Default Height [cm]

The functionality of the two **Nozzle Presets** menus is the same as previously described. The only difference is that for Bank 1 there is only one preset nozzle allowed as there is only one mounting for a nozzle on the nozzle body. For Bank 2 the menu has room for four nozzles in the menu (Nozzle Preset 2 to 5).

NOTE: Majority of operator's select a smaller nozzle size in Nozzle Preset for Bank 1. The larger nozzle sizes are set in Nozzle Presets 2 to 5 for Bank 2.

WZ00232,000051F-19-13AUG18

Outer Nozzle Presets

Outer Nozzle Presets	1
Nozzle Preset 1	
Nozzle Type AUIB 85	
Nozzle Size 2	
Reference Flow 0.00	
Ref. Pressure 0.00 [bar]	
	1:41pm

WZ290700091

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

WZ290700091-19-26MAR10

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.

OUCC020,0002450-19-20JUL10

BoomTrac[™]



NOTE: See John Deere TerrainControl[™] Pro option in the Accessories section of this manual for BoomCtrl Settings information.

The presets can be found on the **Spray Boom** tab in **Machine Settings**.

Boom Tilt Control; This allows the operator to change between two modes:

- AUTOMATIC: Boom tilt will be automatically controlled and adjusted via BoomTrac[™]. If BoomTrac is activated, it can be switched (temporarily) to manual control if required on the Sprayer Main page. In that case the boom tilt can be manually operated via the boom tilt switch on the Multi-Function Control lever (see Boom Tilt Correction in section Operation of the Machine). Boom tilt indicator on Sprayer Main shows actual position.
- **TOGGLE SWITCH**: the boom tilt will be manually controlled and adjusted via the boom tilt switch on the Multi-Function Control lever (see **Boom Tilt Correction** in section **Operation of the Machine**). Boom tilt indicator on **Sprayer Main** shows boom tilt preset.

Boom Tilt Control Regulation Factor

John Deere TerrainControl is a trademark of Deere & Company BoomTrac is a Trademark from Deere & Company WZ290700092—19—26MAR10

The boom tilt regulation factor is a factor to fine tune the tilt control. This value does not need to be changed under normal conditions. The value is factory set and related to the working width of the boom. By changing this value the sensitivity of the boom tilt regulation can be adjusted.

The factory settings are:

- For double folded booms: 60
- For triple folded booms: 40

Boom Height Control Dead Band

This value is factory set on 8 cm. In this case the automatic boom height control will not regulate the height when the actual height of the boom during working is within 8 cm of the target boom height. By changing this value the sensitivity of the boom height regulation can be adjusted. By selecting the field it can be opened and the value changed.

Raise Height at Headland Turn

A value to pre-set the height of the boom at the headland (master valve closed at headland) can be entered. This value determines the height of the boom above the spraying height when raised at the headland (with **Boom Headland Management** set to **Raise and Tilt** or **Raise and Stop**, see **Job Settings** in section the **Sprayer Control System**).
If the value is set to "0", the boom will not be raised at the headland.

WZ00232,000043D-19-17AUG18

Tank Settings



WZ290401584

A-Minimum Tank Alarm Level

Tank Settings tab can be found in Machine Settings.

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

B—Automatic Filling Offset

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

WZ00232,00003A2-19-09DEC11

WZ290401584-UN-09DEC11

Regulation Settings



WZ290700094

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

Liq. Regulation Factor: these factors determine the regulation speed of the pressure regulating valve for large deviations between the actual and target application rate (digits before decimal point) and for small deviations (digit after decimal point).

The factory sets the sprayer to $\mathbf{18}\ \mathbf{for}\ \mathbf{Coarse}\ \mathbf{and}\ \mathbf{5}\ \mathbf{for}\ \mathbf{Fine}.$

Coarse

• Coarse: Is a percentage of the target rate that the

WZ290700094-19-26MAR10

SRR goes to with maximum voltage e.g. Alternator output (14.0 volt). It is calculated with a fixed value of 5.

- Example: Coarse = 15, Fine = 7
- 15 * 5 = 75 or 75% (0.75) of target rate.
- With a target rate set at 400 L/ha
- 0.75 * 400 = 300 L/ha.
- The regulator will be powered at maximum alternator voltage up to 300 L/ha.

Course Factor (x5)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
% of Target Rate	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95

Regulation	Setting	-	Coarse
------------	---------	---	--------

Fine

- Fine: Is a percentage of a known voltage (12.0 volts) used to operate the SRR to the desired target rate. It is calculated with a fixed value of 10
- **Example**: Coarse = 15, Fine = 7

•	7 * 10 = 70. 70% (0.7)	of the	maximum	voltage	to	the
	regulator.					

- 0.7 * 12.0 volts = 8.40 volts.
- 8.40 volts are used to power the regulator into position for the final 25% (100 liters) of the target rate.

Fine Factor (x10)	1	2	3	4	5	6	7	8	9
% of Voltage	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8

Regulation Setting - Fine

NOTE: After **Coarse** and **Fine** adjustment, carry out a spray test in simulated speed with all sections spraying and then switching the sections off one by one. The regulator should remain stable throughout the test.



WZ290700094

Regulation Mode: 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 [%]: 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.

Anticipation Factor [%]: the position of the regulating valve is anticipated when turning boom section switches ON or OFF during turning on the headland with master valve OFF. This prevents a high start-up pressure after closing a lot of sections and then switching the master valve ON. The control unit uses the average speed of the last spray track as a basis for making the correction on the regulation valve. This last track should take at least 20 seconds to allow the control unit to calculate a realistic average speed. Also when slowing down at the end of a spray track, the control unit will move the

WZ290700094-19-26MAR10

regulating valve back to the flow corresponding with the average speed. The control unit waits 5 seconds after switching the master valve to the OFF position before the anticipation starts, and the anticipation handling stays active for maximum 10 minutes. The strength of the anticipation can be changed with an anticipation factor between 0% and 100%. When 0% is entered then the anticipation handling is disabled.

Default Valve Position [%]: on start-up of the control unit and after 2 minutes of non-spraying activity, the regulating valve is moved to a default position. This default position is programmable and has a value between 0% and 100%. When 0% is entered then this feature is disabled. Moving the valve to its default position is done by first turning the valve to the lowest flow position (the control unit uses the total valve turning time for this action). Then the valve is moved to the default position. For example, when 30% is entered and the valve time is 6 sec, then the valve is first turned in negative direction for 6 sec and then for 1.8 sec in positive direction.

Note Flow/Pressure Cross Check, Anticipation Factor, and Default Valve Position features are only available when the i-Features are activated.

OUCC020,0002453-19-11AUG16

Calibration

Sensor Calibra	to ate		\$	
Actual Calibr	ation	Values		
Flow [imp/L]	111	Hght.SSpac. [m]	18.0	[□□[鳧
L.P. LO Ref. [ADC]	2	B.HghtLO [cm]	45	
L.P. HI Ref. [bar]	2.1	B.HghtHI [cm]	244	[∽́°
L.P. HI Ref. [ADC]	12	B.Tilt-L [ADC]	200	
Wheel [imp/100m]	158	B.Tilt-R [ADC]	800	123
Tank Empty [ADC]	6	B.Tilt-C [ADC]	500	
Tank Min. [ADC]	12			2
Tank Max. [ADC]	56			1:4300
A.Fill.Off. [L]	20			

WZ290700095



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

WZ290401324—UN—110CT06 Buttons used in Calibration

The **Sensor Calibration** menu is entered via softkey [A] from **Machine Settings**. All calibration values of embodied sensors will be displayed here.

Sensor to calibrate: select from the drop down list the sensor required: Flow, Liquid Pressure, Wheel, Tank, Air Pressure, Boom Tilt and Boom Height.

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.

OUCC020,0002454-19-20JUL10

WZ290700095-19-26MAR10

Flow Calibration

ensor Calibratic	n		
Sensor to calibrate	Flow	\$	
Flow Sensor Pulses [pulse/L	569	AUTO	
			्रो
290401334			9:20

Sensor Calibration - Flow

WZ290401334—19—04OCT06

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 900 series trailed sprayers has a normal value of between 140 to 170 pules/L. Automatic - Flow Cal.







WZ290401336

WZ290401336—19—04OCT06



ibration 3
6,0 LOW
200
0
1,00

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.

WZ00232,0000219-19-15DEC16

Liquid Pressure Calibration



Sensor Calibration - Liquid Pressure

WZ290401338—19—04OCT06

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

Make sure that there is no pressure 0.0 bar (psi) applied to the liquid pressure sensor. Then start the calibration.
Make sure that there is no pressure 0.0 bar (psi) applied to the liquid pressure sensor. Then start the calibration.
Make sure that there is no pressure 0.0 bar (psi) applied to the liquid pressure sensor. Then start the calibration.
applied to the liquid pressure sensor. Then start the calibration.
(7290401339

WZ290401339—19—04OCT06 Automatic - Low Reference Step 1



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
---------------	----------	--------	-----	-----------	-------

Liq.Pressure	Low	Ref.Cal.
Liq. Pressure Sensor Low Reference Value [ADC]	0	
///		

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



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

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.

WZ00232,00005B0-19-21DEC18

Wheel Calibration



Sensor Calibration - Wheel

WZ290401344—19—03OCT06



Manual - Wheel Pulses

The **Wheel** calibration menu can be entered via the drop down menu in the field **Sensor to Calibrate**. Two options are available (**Manual** and **Automatic**) for the item listed.

Actual Wheel Used: select between two pulse values for the wheel sensor, indicated as **Narrow Tire** and **Wide Tire** from the drop down list in this field. For each selection, there is a corresponding wheel calibration pulse number. This allows for a quick selection of another set of wheels. **Manual - Wheel Pulses [pulses/100m]**: the number of wheel pulses generated by the wheel sensor per 100 m can be entered here with the numeric keys (the value can have one decimal place, giving a resolution of 1 pulse per 100m). The pulse number depends on the type of tire (circumference), the number of pulses per tire revolution and the soil conditions. **The pulse number must be calibrated in the field**. Find in the table the factory settings of row crop tires **Narrow** and flotation tires **Wide** as reference.

NOTE: The following table is a guide for expected values in wheel sensor calibration. If your tire type does not appear in this list or if the wheel circumference differs, use the Automatic - Wheel calibration option to properly calibrate the wheel sensor.

Automatic - Wheel Calibration:

To enter the menu for the wheel sensor calibration, there are three steps (1- 3) to this process, follow the screen instructions.

Wide Tire Example				
Tire Type	Wheel Circum. (mm)	Approx. Pulses per 100 Meter		
VF 380/95R46 Michelin Spraybib	5530	578		
Kléber Traker 520/85R38	5447	587		
620/70R38 Michelin MegaXbib	5557	576		

Automatic Wheel Calibration



WZ290401345—19—03OCT06 Automatic - Wheel Calibration Step 1



Automatic - Wheel Calibration Step 2



Automatic calibration of the wheel sensor can be done in this menu. It has three steps. The calibration has to be done as follows:

Step 1.

- 1. Fill the solution tank of the sprayer half full with liquid.
- 2. Measure and mark a distance of exactly 100 meters in a field which is representative for the average fields to spray.
- 3. Drive with the sprayer to the start point of the 100 m course.
- 4. Press **CAL** button when the front tire crosses the start line (Calibration has begun).

Step 2.

- 1. Drive the 100 m in a straight line at a normal speed. When calibration is ON, each pulse received from the wheel sensor is counted and shown on screen.
- 2. There should be at least 100 pulses per 100 m otherwise a calibration error will be given.
- 3. At the end of the 100 m course, press **CAL** button again. Calibration will go OFF and the new pulse value will be determined. There should be at least 100 pulses per 100 m otherwise a calibration error will be given.

Step 3.

Shows the calibration is complete and the resultant counted pulses.

WZ00232,00003E0-19-02NOV12

Tank Sensor Calibration



WZ290401620

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 (40 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.

WZ290401620—UN—11NOV12

(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]: This value is set when the tank shape is calibrated. 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.

(E) AUTO (Automatic) button: will give access to a screen with calibration possibilities for: Tank Empty Cal, Tank at Minimum Level, Tank at Maximum Level and Tank at Overfill Level. Choose the Next button to select which.

(F) Manual button: displays a screen with four fields. It is

preferred that each be calibrated automatically, apart from **Maximum Tank Volume [I]**.

(G) Tank Sensor Value [ADC]: the actual tank pressure sensor value is shown.

(H) AUTO (Automatic) button: opens a **Tank Shape Calibration** screen which is in 3 steps. For the M944 (M944i) use 4400 liters, M952 (M952i) use 5200 liters and for the M962 (M962i) use 6200 liters for the calibration.

Automatic - Tank Empty Cal.



WZ290401621—UN—11NOV12





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



WZ290401623—UN—11AUG16 Tank Minimum - Step 2, Use 40 Liters for the Calibration of M900 and M900i

A—Tank at Minimum

WZ290401623

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 GreenStar 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.

40 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

Tank Sensor Cal	ibration
1 2	
Make sure that tank with water at max volume leve	r is filled imum tank el.
Then press cali	lbrate.
Max. Tank Volume [L]	6500
Tank Sens. Value [ADC]	21
/2290401624	W7290401624-IIN-09N

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:
 - *6500 L for the M962 and M962i
 - *5450 L for the M952 and M952i
 - *4620 L for the M944 and M944i

* These quantities need to be measured accurately (e.g. with a calibrated flow sensor or balance) and filled into the tank. Each tank can vary in size due to the manufacturing process.

* The minimum and maximum tank levels are factory pre-programmed in Factory Settings and depend on the actual tank size. If required these values can be adjusted. See also **Tank Configuration** in **Factory Setup** to enter the actual value.

- 3. The actual tank pressure sensor value is shown on screen.
- 4. Press **CAL** button to calibrate. The sensor ADC value should be at least 50 units higher than the calibration value at minimum tank level or otherwise a calibration error will be shown.
- 5. The screen will return to the **Tank Sensor** menu after calibration.

Automatic - Tank at Overfill Level



Tank Sensor - Step 1



Tank at Overfill Level - Step 2

A—Tank at Overfill Level

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 not spilling).
- 3. The actual tank pressure sensor value is shown on the display.
- 4. Then press CAL button.

Manual Calibration

5. The screen will return to the Tank Sensor menu.



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 Step 1 - Use 6500 L for M962(i), 5450 L for M952(i), & 4620 L for M944(i)



Step 2



The input from the tank level sensor has to be converted into a value to determine the actual tank volume. First the tank level sensor has to be calibrated when the tank is empty, at minimum, maximum and at 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.

The actual calibration of the complete tank must be done starting from a completely filled tank of 6500 liters for M962 (M962i), 5450 liters for the M952 (M952i), or 4620 liters for the M944 (M944i). 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.
- 5. Press **CAL** button to start the calibration of the tank shape. The volume in the tank has to be around 200 L more than the maximum tank volume value. 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).
- 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.

WZ00232,00004E2-19-02JUN15

Boom Tilt Calibration



Sensor Calibration - Boom Tilt

WZ290401360-19-04OCT06



WZ290700000-UN-26MAR10

The Boom Tilt 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 tilt correction with the Multi-Function Control lever MFC the boom tilt actuators have to be adjusted in relation to each other.

Boom Tilt Left [ADC]: the position of the potentiometer on the boom tilt actuator corresponding to the leftmost position of the boom tilt indication on the display. This value always has to be calibrated.

Boom Tilt Right [ADC]: the position of the potentiometer on the boom tilt actuator corresponding to the rightmost position of the boom tilt indication on the display. This value always has to be calibrated.

potentiometer on the boom tilt actuator corresponding to the center position of the boom tilt 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 Tilt Left, Boom Tilt Right and Boom Tilt 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 Tilt Left, Boom Tilt Right and Boom Tilt Center. Choose the appropriate field and enter value. The position of the potentiometer on the boom tilt actuator corresponding to the position of the boom tilt indication on the display. This value always has to be calibrated.

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

Boom Tilt Center [ADC]: the position of the





WZ290401361

WZ290401361—19—04OCT06







Boom Tilt Switch

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

Automatic - Boom Tilt Cal. - Right



Automatic - Boom Tilt Step 2 (Right)

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

Automatic - Boom Tilt Cal. - Center



Boom Tilt Cal.	- Centre
1 2	
Move the boom tilt to the centre p with the tilt s EHC-2: Turn the rot to the centre on the Then press cali	actuator osition witch. ary button switch box. brate.
Actual Boom Tilt Position [ADC]	479
/// VZ290700137	CAL
	WZ290700137—19—08.IU

The description of the calibration procedure is shown on the screen: Move the boom to the centermost position with the **boom tilt switch**. Then press **CAL** button to start the calibration. Actual **Boom Tilt Position [ADC]** value is shown in the screen center. The **Cancel** button will return you to the **Boom Tilt Calibration** page.

WZ00232,000043E-19-06AUG13

Boom Height Calibration (BoomTrac)

ν

Sensor to Boom Calibrate	Height	\$	
Height Sensors at Min. Boom Height [cm]	0	AUTO	
Calibrated AVG Sensor Value [ADC]	0		
Height Sensors at Max. Boom Height [cm]	o	AUTO	
Calibrated AVG Sensor Value [ADC]	0		5
Sensor Spacing [m]	18.0]	5:2

WZ290700098-19-17JUN13

Automatic - Boom Tilt Step 2 (Center)



A—Position of the Alignment Triangle on the Senor Body B—Position of "T" on the Plug

WZ290102348-UN-21DEC11 Plug and Sensor Orientation

- IMPORTANT: Do not calibrate on a painted or shiny floor as this gives a false reading. Rain, standing water and wind will also affect the sensor reading.
- IMPORTANT: To carry out the calibration the "T" on the plug needs to be opposite the triangle which visible is on the side of the sensor. See illustration.

The **Boom Height** 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.

Height Sensors at Min. Boom Height [cm]: this shows the distance between the ground and the nozzle height at the booms lowest position.

Calibrated AVG Sensor Value [ADC]: this ADC value is the average output of the boom height sensors (left + right) at the minimum boom height. This value needs to be calibrated. The minimum value for each sensor is 5 mA (see Sensor Status - Sensor Status 2 in this

section). On a still day the sensor reading should only vary by up to 0.5 mA. If it varies by more than 0.5 mA, consult your dealer.

Automatic: enter this menu to calibrate the minimum height value of the boom height sensors.

Height Sensors at Max. Boom Height [cm]: this shows the distance between the around and the nozzle height at the booms highest position.

Calibrated AVG Sensor Value [ADC]: this ADC value is the average output of the boom height sensors (left + right) at the maximum boom height. This value needs to be calibrated.

Automatic: enter this menu to calibrate the maximum height value of the boom height sensors.

Sensor Spacing: the distance between the sensors on the boom in meters. Sensor distance depends on boom size and the sensors should be set equally apart.

Calibrate Height Sensors at Minimum Height



A—Boom Raise/Lower Switch

B—Boom Tilt Switch

WZ290700103-19-26MAR10

On **Boom Min. Height Cal.** page, the automatic calibration of ADC value measured by the boom height sensors at the minimum boom height needs to be carried out.

- 1.Make sure that the boom height sensors are at an equal distance from the center of the boom.
- 2. Make sure that the angle of the boom height sensors is equal on both sides of the boom and check mA value on the **Diagnostics** page.
- 3. Adjust the boom to a minimum height with switch (A) and make sure that the boom is parallel to the ground (height of both sensors above the ground is equal). This can be checked in Diagnostics, Sensor Status 2 where the values for Boom Height L Outer (mA) and Boom Height R Outer (mA) should be the same. The boom tilt can be adjusted for calibration with boom tilt switch (B) on the MFC.
- 4. Measure the height of the spray nozzles above the ground and enter this value as **Min. Calib. Height** (cm).
- 5. Press **CAL** button to start the automatic calibration.
- 6. The actual average sensor value (ADC) can be monitored constantly on the display.
- 7. After automatic calibration of the minimum boom height, the screen will go back automatically to the **Boom Height Calibration** menu.

Calibrate Height Sensors at Maximum Height



WZ290700099—19—26MAR10 Automatic - Boom Max. Height Cal.



A—Boom Raise/Lower Switch B—Boom Tilt Switch

On **Boom Max. Height Cal.** page, the automatic calibration of ADC value measured by the boom height sensors at the maximum boom height needs to be carried out.

- 1.Make sure that the boom height sensors are at an equal distance from the center of the boom.
- 2.Make sure that the angle of the boom height sensors is equal on both sides of the boom.
- 3. Adjust the boom to a maximum height with switch (A) and make sure that the boom is parallel to the ground (height of both sensors above the ground is equal). This can be checked in Diagnostics, Sensor Status 2 where the values for Boom Height L Outer (mA) and Boom Height R Outer (mA) should be the same. The boom tilt can be adjusted for calibration with boom tilt switch (B) on the MFC.
- 4. Measure the height of the spray nozzles above the ground and enter this value as **Max. Calib. Height** (cm).
- 5. Press **CAL** button to start the automatic calibration.
- 6. The actual average sensor value (ADC) can be monitored constantly on the display.
- 7.After automatic calibration of the maximum boom height, the screen will go back automatically to the **Boom Height Calibration** menu.

WZ00232,00003AD-19-23DEC11

Steering Calibration



WZ290401591

A—Sensor to Calibrate

B—Drawbar Sensor Straight Position [ADC]

C—Wheel Sensor Straight Position [ADC]

After the crop sprayer has been connected (see section **Coupling and Uncoupling of the Sprayer**) the procedure below must be followed to adjust the automatic tracking system:



WZ290102227-UN-14NOV11

WZ290401591-UN-12DEC11

D—Distance between Tractor Axle and Coupling [mm] E—AUTO (Automatic) Steering Calibration F—Manual Steering Calibration



Tracking Sensor Alignment



Automatic Steering Calibration

A—Pivoting Arm

- B—Support Sleeve
- C—Ball
- D—Pivoting Arm Alignment (90° to the Drawbar Center)

NOTE: Ensure that the pivoting arm is aligned at 90° to the drawbar center (D).

AUTO (Automatic) Steering Calibration

- 1. Drive straight ahead with the tractor.
- 2. Ensure that the sprayer is following the track of the tractor.
- 3.If required use the manual steering button on the MFC to make a correction.
- 4. Ensure the sprayer pin joints for the steering rod are at right angles to the sensor pivot point and the

drawbar center. Adjust steering rod if required to achieve this. Ensure the king pin is centered.

In the **Straight Driving Cal.** screen on the GreenStar[™] display (Machine Settings - CAL softkey [A] - Sensor to Calibrate - Steering) press the CAL button to enter the new setting.

Wheel Steerin	ng Cal.
Drawbar Sensor Straight Position [ADC]	
Wheel Sensor Straight Position [ADC]	B
<i>///</i> ©	D 🔅
WZ290401590	WZ290401592—UN—12DEC

Manual Steering Calibration

A—Drawbar Sensor Straight Position [ADC] B—Wheel Sensor Straight Position [ADC] C—Cancel Button

D-Enter Button

Manual Steering Calibration

Enter required values directly into the field via the display keypad, press the **Enter Button** to confirm the values.

WZ00232,0000403-19-09NOV12

Main Page Layout



Main Page Layout

WZ290401368—19—04OCT06

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



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 the M900) K—Spray Boom Working Width

L—Current Performance

M—Total Sprayed Volume N—Spray Boom Height (Automatic Boom Control only)

O—Agitation Operating Pressure (not used on the M900)

P—Pump Speed

Q-Rinse Water Tank Contents (not used on the M900)

Select Profile: in the (drop down menu) you can choose from the following options: Standard, TF Machine, BoomTrac, TF + BoomTrac, User Profile 1 and User Profile 2. Restore Default Profiles: will reset all six profiles to the factory defaults.

Symbol List:

Cancel: returns to Main page without saving settings.

A — Applied rate: shows the actual application rate in L/ha.

B — **Target rate**: shows the target application rate in L/ Ha. When spraying (main shut-off valve open), the operator can go directly to a boost selection screen (Boost Mode) by selecting softkey [D]. When not spraying, the operator can go to the Job Settings Menu by selecting softkey [G].

C — **Current speed**: shows the speed of the spraver 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 spraved 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 M900.

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 — **Sprav boom height**: (Automatic Boom Control only): shows the actual boom height when Boom Automatic Control is fitted.

O — Agitation Operating Pressure: shows the working pressure of the agitation in bar. Not used on the M900.

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

Q — **Rinse Water Tank Contents**: shows the contents in litres. Not used on the M900.

WZ00232,00005E0-19-24AUG18

Steering



WZ290401612

Steering Tab

WZ290401612-UN-08NOV12

A—Sensitivity Factor Drawbar B—Dead Zone Rear Axle

C—Over/Understeering Correction

The **Steering** menu is entered via softkey [C] from **Machine Settings**.

There are five individual selectable fields, four with the use of the keypad and the last with drop down menu in the display field.

- **CAUTION:** The response of the steering system is greatly influenced by the ground speed. The faster the ground speed the quicker the reaction of the steering.
- NOTE: Values shown in the GreenStar[™] screen graphic (above) are examples and may not reflect the real settings required.
- A—Sensitivity Factor Drawbar: determines how quickly the steering system will react on steering movement of the tractor. A very low input will give a sensitive behaviour to the steering system, a high

D—Steering Delay E—Steering Factor

value will result is late activation of the steering when the tractor is changing direction. Enter an value between 2 to 100 to adjust the sensitivity of the sensor located in the drawbar.

B—Dead Zone Rear Axle: the dead zone for the rear axle is used to define the center position of the axle as indicated by the steering indicators on the lower left of the main page. The value is also used to activate the steering system, depending on the required change of angle for the wheels. A low value means that small steering changes will also be transmitted to axle for a reaction. This can cause the warning Wheels Not Centred to frequently appear along with the green and red steering indications changing state until adjusted. This is due to dynamic behaviour of the axle/steering system which makes the axle response very much more sensitive. A high value means a slower reaction of the steering response for the required angle change of the wheels. The system is less sensitive for the warning Wheels Not Centred. Value range is between 4 and

100. Note that changing the setting will also affect the steering status indicators on the Sprayer Main screen in the lower left of the display. As the entered value gets higher the green indicator will show the wheel centered position sooner.

- C—Over/Understeering Correction: the factor gives a correction on the ratio between the drawbar angle and the wheel angle. With this factor it is possible to make the machine over or understeer (increase or decrease the wheels angle) to steer the sprayer more outside or inside the track of the tractor wheels. Default value is 1, which is the neutral setting (no bias). Entering a value under 0 will create a smaller radius turn (machine will track more inside the tractor's path). Entering a value over 1 (2 to 10) will create a larger radius turn (machine will track more outside the tractor's path). Value range is between 0 and 10.
- D—Steering Delay [%]: will give a delay in the steering before reacting when the tractor deviates from driving straight ahead. This will cause the wheels not to react immediately when the tractor starts to turn. The delay is a percentage of the machine length from the tow eye to the axle center. With 0 % the steering will start immediately and with 100 % the

delay will be the distance between the tow eye and the axle center. Value range is between 0 and 100.

E—Steering Factor: select from the drop down menu either Slow, Normal and Fast. The steering factor determines the speed of steering response for the wheels. The wheels are controlled by proportional valves and the field in the display has 3 different control settings: Slow, Normal and Fast. When set to Fast, the wheels will go quickly to the target position resulting in fast steering. Note there is more of a reaction in the spray boom movement due to the wheels fast momentum.

WZ00232,0000402-19-08NOV12

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.

WZ00232,00003AE-19-09DEC11



1—Sprayed volume 2—Remaining volume

3—Sprayed area

4—Remaining area

Actual

5—Sprayed distance

8-

-Flow rate (actual)

-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.

WZ00232,00001FE-19-20JUL10

Field



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 spraving.
- 6—Total Distance (km): The total distance travelled.
- 7 Spray Volume (I): The total number of liters spraved.
- 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. WZ00232,00003AF-19-09DEC11

Total



Performance Data - Total

WZ290401327—19—02OCT06

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 (Ì): 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.

WZ00232,00003B0-19-09DEC11

Info



Performance Data - Info

WZ290401596—19—13DEC11

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 (Ì).
- 8-Sprayed volume (I).
- 9—Actual flow rate (I).
- 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.

- **15—**Agitation Operating Pressure (not used on the M900)
- 16—Pump Speed
- 17—Rinse Water Tank Contents (not used on the M900) WZ00232,00005E1-19-24AUG18

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.

WZ00232,00003B6-19-13DEC11

Info Readings



WZ290700100

Diagnostics - Info Readings

WZ290700100-19-08JUN10

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 when 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 Implement CAN-bus of the tractor.

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

WZ00232,00003B4-19-23DEC11



Info Readings can be found by selecting the (Info Readings) tab in **Diagnostics** (softkey [J]).

Sensor Status

Info Sensor Ctrl.U.	Problems	
Sensor Status 1	\$	چ
Liquid Pressure [ADC]	12	
Air Pressure [ADC]	6	.
Tank Sensor [ADC]	0	
Flow	0	企
Sprayer Speed	o	
Tractor Speed	0	1121
Wind Speed	0	
Drawbar S 1	0	
Drawbar S 2	o	In and
Drawbar S 3	o	
Drawbar S 4	o	
No Tilt Allowed	o	2:00p
Boom Tilt [ADC]	6	

WZ290700102

Diagnostic - Sensor Status 1

WZ290700102-19-26MAR10

Sensor Status can be found by selecting the (Sensor Status) tab in **Diagnostics** (softkey [J]).

status pages. In these pages the current status of all sensors fitted on the sprayer can be monitored.

Via a drop down list you can select between two sensor

Sensor Status 2

Info	Sensor Ctrl.U.	Problems	3.0
	Sensor Status 2	\$	e e
Boom He	ight L Inner [mA]	0.00	
Boom He	ight L Outer [mA]	0.00	
Boom He	ight R Inner [mA]	0.00	l O
Boom He	ight R Outer [mA]	0.00	①
Boom He	ight Angle [ADC]	10	0
Pump Oi	l Level H 1	0	123
Pump Oi	l Level L 1	0	
Pump Oi	l Level H 2	0	
Pump Oi	l Level L 2	0	
			2:00pr

WZ290700103

Diagnostic - Sensor Status 2

WZ290700103-19-26MAR10

OUCC020,000245A-19-20JUL10

Multi-Function Control Status

Diagnostics					
	Info Sensor C	Ctrl.U. Problems	-6		
	Multi-Fun Control S	nction Status 1			
	Left Sections	OFF			
	Central Section	OFF	<u> </u>		
	Right Sections	OFF			
	Master Valve	OFF			
	Drawbar Left	OFF			
	Drawbar Right	OFF	123		
	Boom Tilt Left	OFF			
	Boom Tilt Right	OFF			
	Resume Switch 1	OFF	(The second sec		
	Resume Switch 2	OFF			
	Boom Up	OFF			
	Boom Down	OFF	5:42am		
v	WZ290401469				

Diagnostics - Multi-Function Control (MFC) Status 1

WZ290401469—19—05AUG13

Multi-Function Control Status 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.

Multi-Function Control Status Page 2



Diagnostics - Multi-Function Control Status 2

WZ00232,0000442-19-05AUG13
Recent Problems

Info	Sensor Ctrl.U. Problems	34
?	ecent Problems 1 🔶 🕶 0	「豆
Machine	Code Problem	
Hrs. 186:26	523439.05 OPEN LOAD ON OUTPUT SPC	L
186:26	523435.05 OPEN LOAD ON OUTPUT SPC	0
186:26	523434.05 OPEN LOAD ON OUTPUT SPC	一合
186:26	523432.05 OPEN LOAD ON OUTPUT SPC	9
186:26	523422.05 OPEN LOAD ON OUTPUT SPC	123
186:26	2128.09 HARDWARE FAILURES	
186:26	2160.09 HARDWARE FAILURES	
186:26	2161.09 HARDWARE FAILURES	
186:26	2162.09 HARDWARE FAILURES	1-34 pi
186:26	2163.09 HARDWARE FAILURES	1.54pi

WZ290700104

Diagnostics - Recent Problems

WZ290700104-19-26MAR10

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 the **Sprayer Control System** section.

WZ00232,000043F-19-02AUG13

GreenStar[™] SprayerPro[™] and John Deere Section Control

There are 15 hours of free usage for demonstrations or trial for either package.

For further information on activation, contact your local John Deere Dealer.

To order the activation for **GreenStar[™] SprayerPro[™]** or **John Deere Section Control** is via the AMS price book. For machines who do not have the applications as part of the sprayer package.

SprayerPro[™] and John Deere Section Control



SprayerPro

SprayerPro[™] is an optional application that can be purchased and activated on GreenStar[™] 2 (GS2) 1800, 2100, & 2600, Displays with a 26-digit activation code. For, the GreenStar[™] 3 2630 & CommandCenter[™] 3 the application is called **John Deere Section Control**.

CommandCenter is a trademark of Deere & Company

For, Generation 4 CommandCenter[™] 4600 displays the Section Control application is part of the Generation 4 CommandCenter[™] Premium Activation. The Premium activation is also required for documentation purposes and AutoTrac use.

When SprayerPro^m or John Deere Section Control is enabled;

- It turns implement or sprayer boom sections ON and OFF based on the Global Positioning System (GPS)
- For already applied areas
- And for field boundaries

SprayerPro™ or **John Deere Section Control** can also be used to turn sections ON and OFF at an exterior headland boundary before the headlands have been sprayed. Headland control is available for the GreenStar™ 2 2600 Display, GreenStar™ 3 2630 Display, and the Generation 4 CommandCenter[™] 4600 display.

Application Summary



Caution Icon

Sprayer - Main 5/1/ 0 0 **** 250 ⊕/% L/ha AUTO 0.0 · . 240 AUTO C OL DL OL 11 11 1: << >> JD_ER11005 晋 ND AUTO ٠۵۰ P AUTO 9:20 £ 9 Q 2 t WZ290401695 WZ290401695-UN-23AUG16

Pause Icon



WZ290401696—UN—23AUG16 Pop-Up Screen - Manually Disabled Section (RED) with Section Control Active



Example Screen to show the various Enabled and Disabled Sections with Section Control Active

CommandCenter is a trademark of Deere & Company GreenStar is a trademark of Deere & Company 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 SprayerPro™ or John Deere

Section Control

-Gray IBS (Index Boom Sections) Disabled Section (Black text G in the section)

A basic summary of the SprayerPro[™]or 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 Spray Master Switch selected to OFF (on the MFC) by the operator, the pause icon appears on the display. The Spray Sections turn white from the black state on the display to spraying has been halted.			
RED Disabled Section (C)	When sections are disabled manually from the boom pop-up screen the disabled section are shown in RED (C). Section control does not use the RED sections. Section Control only works with enabled sections (Black). With the Pop-up screen visible on the display, the IBS Reset Button only enables all sections here even if they are RED. Note: In, another screen on the display the IBS Reset Button only resets the White disabled sections.			
Gray Disabled Section (G)	 With the Section Control enabled, pressing either the left or right IBS disables sections from the boom outer sections. The sections turn Gray to show that the IBS buttons disabled these sections. The left IBS button disables sections from the right side of the boom. The Right IBS button disables the sections from the left side of the boom. Once a section has been disabled pressing the opposite IBS button enables the section again. To enable all Gray sections in a single operation, press the IBS Reset button (middle button). See Operating IBS (Index Boom Sections) in the Operation of the Machine section. 			
White Disabled Section (F)	A White disabled section indicates that either SprayerPro™ or John Deere Section Control has switched the section Off.			
SpraverPro is a trademark of De	ere & Company			

WZ00232,0000440-19-29SEP16

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

SPN Number	FMI Number	er Code Description FMI Name				
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			
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 Seve 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			

SPN	FMI	Code Description	FMI Name		
Number	Number				
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		
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		

SPN Number	FMI Number	Code Description	FMI Name			
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			
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			

0.001	-	On the Department of				
SPN Number	Number	Code Description	FMI Name			
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			
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 around 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			

WZ00232,00003C0-19-09DEC16

Wheel Load and Tire Pressure

IMPORTANT: After the first 4 and 8 hours of operation, retighten all wheel attaching nuts. Check tightness of these nuts frequently.

The crop sprayer may be fitted with various tires and wheels. Verify that the combination of tires and wheels

The following tires can be supplied:

Tire size	Load Index
VF380/90R46	173D
480/80R46	164A8/164B
520/85R38	169A8/166D
520/85R42	167A8/164D
520/85R46	173A8/170B
620/70R42	166A8/166B
710/70R38	166A8/166B

The following pages explain the meaning of various indications and technical specifications on the tires.

The tire load capacity is indicated by a Load Index corresponding with a standard speed of 40 km/h (speed symbol A8) and a specific reference pressure (indicated by one or more asterisks).

If possible, a second (and third) load capacity is given corresponding with another speed, viz. 10 km/h (A2) or 50 km/h (B). The tire pressure is then not standardbased, but has been given by the tire manufacturer.

IMPORTANT: Refer to the manufacturer's and brand technical specifications for the tire air pressure and load capacity. Always refer to the load index chart hereafter.

IMPORTANT: 710/70R38 tire is intended for use only with the a 944 or a 952 Trailed Sprayer.

WZ00232,0000507-19-01JUN15

and tire pressure is suitable for the speed and load at which the work is done.

The rim and disk of the wheels are completely welded around for high strength. Tires are available with 40 km/ h wheels. However, the maximum load which may be carried at these speeds by the tires (and wheels) is limited and should be taken into account!

Explanations of Indications on Agricultural Tires





WZ290200100

WZ290200100-UN-03FEB99

TIRE IDENTIFICATION (Inch Identification)

18.4	Tire width in inches
R	"Radial" type
38	Rim diameter in inches
Super 9	Tire type
146	Load index 146 = 3000 kg at 40 km/h
A8	Speed symbol (40 km/h)
143	Load index 143 = 2725 kg at 50 km/h
В	Speed symbol (50 km/h)

TIRE IDENTIFICATION (Metric Identification)

	TIRE IDENTIFICATION (Metric Identification)
480	Tire width in millimeters

- 70 Height-width ratio x 100
- R "Radial" type
- 30 Rim diameter in inches

Super 9L	Tire type (L = large)
141	Load index 141 = 2575 kg at 40 km/h
A8	Speed symbol (40 km/h)
138	Load index 138 = 2360 kg at 50 km/h
В	Speed symbol (50 km/h)

Load Index Chart

INDEX	kg	INDEX	kg	INDEX	kg	INDEX	kg	INDEX	kg
80	450	100	800	120	1400	140	2500	160	4500
81	462	101	825	121	1450	141	2575	161	4625
82	475	102	850	122	1500	142	2650	162	4750
83	487	103	875	123	1550	143	2725	163	4875
84	500	104	900	124	1600	144	2800	164	5000
85	515	105	925	125	1650	145	2900	165	5150
86	530	106	950	126	1700	146	3000	166	5300
87	545	107	975	127	1750	147	3075	167	5450
88	560	108	1000	128	1800	148	3150	168	5600
89	580	109	1030	129	1850	149	3250	169	5800
90	600	110	1060	130	1900	150	3350	170	6000
91	615	111	1090	131	1950	151	3450	171	6150
92	630	112	1120	132	2000	152	3550	172	6300
93	650	113	1150	133	2060	153	3650	173	6500
94	670	114	1180	134	2120	154	3750	174	6700
95	690	115	1215	135	2180	155	3875	175	6900
96	710	116	1250	136	2240	156	4000	176	7100
97	730	117	1285	137	2300	157	4125	177	7300
98	750	118	1320	138	2360	158	4250	178	7500
99	775	119	1360	139	2430	159	4375	179	7750

Speed Identification Symbol

Speed symbol	Speed (km/h)
A1	5
A2	10
A3	15
A4	20
A5	25
A6	30
A7	35
A8	40
В	50

Load Capacity (Depending on Speed)

Speed (km/h)	A6	A8
8/10	+50%	+50%
15	+34%	+34%
20	+23%	+23%
25	+11%	+11%
30	0%	+7%

35	-5%	+3%
40	-10%	0%
45		-4%
50		-9%

Only for operations which do not require a high torque at all times. The variations shown above do not apply to narrow tires. Also refer to the tire pressure charts on the following pages.

AG,WZ00009,92-19-04AUG00

VF380/90R46 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to a Michelin SprayBib tire and may vary from your tire brand.

Load Index	: 173D
Tire width	: 385 mm
Tire diameter	: 1842 mm
Static radius	: 848 mm

eel circumf. : 5503 mm	Load capacity per tire in kg.		
Air pressure/bar	40 km/h	Air pressure/bar	40 km/h
2,2	4375	3,4	5625
2,3	4500	3,5	5710
2,4	4625	3,6	5800
2,5	4720	3,7	5850
2,6	4810	3,8	5900
2,7	4905	3,9	5950
2,8	5000	4,0	6000
2,9	5110	4,1	6125
3,0	5225	4,2	6250
3,1	5340	4,3	6375
3,2	5450	4,4	6500
3,3	5540		

WZ00232,0000380-19-09NOV11

480/80R46 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to an BKT AGRIMAX RT855 tire and may vary from your tire brand.

Load Index	: 164A8 / 164B
Tire width	: 510 mm
Tire diameter	: 1936 mm
Static radius	: 895 mm
Wheel circumf.	: 5888 mm

Load capacity per tire in kg.

Air pressure/bar	40 km/h	30 km/h	10 km/h
0.8	2300	2460	3080
1.0	2650	2835	3550
1.2	2950	3155	3955
1.4	3300	3530	4420
1.6	3600	3850	4825
2,0	3900	4175	5225
2,4	4250	4550	5695
2,8	4650	4975	6230
3,2	5000	5350	6700

WZ00232,0000506-19-16DEC13

520/85R38 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to an BKT AGRIMAX RT855 tire and may vary from your tire brand.

Load Index: 170A8 / 167BTire width: 542 mmTire diameter: 1850 mmStatic radius: 843 mmWheel circumf.: 5603 mm

Load capacity per tire in kg.

Air pressure/bar	40 km/h	30 km/h	10 km/h
0.6	2220	2375	2975
0.8	2580	2760	3455
1.0	2940	3145	3940
1.2	3360	3595	4500

Air pressure/bar	40 km/h	30 km/h	10 km/h
1.4	3720	3980	4985
1.6	4080	4365	5465
2,4	4740	5070	6350
2,8	5220	5585	6995
3,2	5640	6035	7560

WZ00232,00004ED-19-03DEC13

520/85R42 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to an BKT AGRIMAX RT855 tire and may vary from your tire brand.

Load Index	: 167A8 / 164B
Tire width	: 539 mm
Tire diameter	: 1943 mm
Static radius	: 888 mm
Wheel circumf.	: 5889 mm

Load capacity per tire in kg.

Air pressure/bar	40 km/h	30 km/h	10 km/h
0.6	2125	2275	2850
0.8	2505	2680	3355
1.0	2890	3090	3875
1.2	3215	3440	4815
1.4	3595	3845	4815
1.6	3925	4200	5260
2.4	4635	4960	6210
1,8	4410	4630	6050
2,8	5070	5425	6795

WZ00232,00004EE-19-03DEC13

520/85R46 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to an BKT AGRIMAX RT855 tire and may vary from your tire brand.

Load Index	: 173A8 / 170B
Tire width	: 539 mm
Tire diameter	: 2085 mm
Static radius	: 963 mm
Wheel circumf.	: 6397 mm

Load capacity per tire in kg.

Air pressure/bar	40 km/h	30 km/h	10 km/h
0.6	2275	2435	3050
0.8	2665	2665 2850	
1.0	3055	3055 3270	
1.2	3445	6385	4615
1.4	3835	4105	5140
1.6	4160	4450	5575
2,4	4875	4875 5215	
2,8	5330	5330 5705	
3,2	5785	6190	7750

WZ00232,00004F0-19-03DEC13

620/70R42 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to a BKT AGRIMAX RT765 tire and may vary from your tire brand.

Load Index	: 166A8 / 166B
Tire width	: 630 mm
Tire diameter	: 1934 mm
Static radius	: 876 mm
Wheel circumf.	: 5845 mm

Load capacity per tire in kg.

Air pressure/bar	40 km/h	30 km/h	10 km/h
0,6	2490	2665	3335
0,8	2860	3060	3830
1,0	3285	3515	4400
1,2	3710	3970	4970
1,4	4135	4425	5540
1,6	4560	4880	6110
2,0	4930	5275	6605
2,4	5300	5670	7100

WZ00232,00004F1-19-03DEC13

710/70R38 Tire Technical Specifications

IMPORTANT: The figures hereafter belong to a BKT AGRIMAX RT765 tire and may vary from your tire brand.

IMPORTANT: 710/70R38 tire is for use only with the 944 and 952 Trailed Sprayers.

Load Index	: 166A8 / 166B
Tire width	: 716 mm
Tire diameter	: 1920 mm
Static radius	: 836 mm
Wheel circumf.	: 5711mm

Load capacity per tire in kg.

Air pressure/bar	40 km/h	30 km/h	10 km/h
0,6	2915	3125	3910
0,8	3395	3635	4550
1,0	3870	4145	5190
1,2	4350	4655	5830
1,4	4825	5165	6470
1,6	5300	5675	7105

WZ00232,00004EF-19-28MAY15

Nozzle Selection

Depending on the application and working principle of the chemical (systemic, contact) a nozzle must be selected that meets the requirements of the application in question (droplet size and volume). To this end, first check the packaging of the crop protection chemical for specific instructions on the amount of spraying liquid to be used per hectare and the droplet size. If necessary, consult your dealer of crop protection chemicals.

Droplet size

During spraying, droplets of various sizes are formed, the droplet spectre. Not all droplet sizes are desirable. Tiny droplets are easily blown away to land in undesirable places. Spraying with too large droplets often means a waste of chemicals. They render inadequate coverage, attach poorly to the surface of the crop and will roll off.

The droplet spectre depends on the nozzle (spray angle, nozzle size and nozzle type) and the spraying pressure. A smaller nozzle opening will produce a smaller droplet. A high operating pressure mainly causes nozzle wear.

In dry weather conditions (high temperature and/or low humidity), the evaporation rate is high, reducing the size of the droplet before it is deposited on the target. It is therefore recommended to avoid spraying at low humidity levels (below RLH 50%) as much as possible. If spraying is required anyway, spray a slightly coarser droplet. To achieve the same coverage, a slightly higher amount of liquid is required. To this end, select a coarser nozzle or a lower driving speed. The quantity of chemicals can remain the same. The number of droplets required per cm² on the surface of the foliar surface depends on the type of spraying and the chemicals.

Coverage per Spraying Type				
No. of droplets per cm ²	Chemical type			
20 - 30	insecticide			
20 - 30	systemic herbicide			
30 - 40	contact herbicide			
50 - 70	fungicide			

Coverage

As the distribution over the entire crop is never the same, the target is set to 100 droplets per cm^2 .

The quantity of spraying liquid required for a specific coverage depends on the droplet size (theoretically calculated for a uniform droplet size and without loss of spraying liquid).

Liquid Quantity/Coverage Chart				
Droplet size Required I/ha in micron for 100 dr/cm ²				
100	5			
150	18			
200	42			

Liquid Quantity/Coverage Chart				
Droplet size in micron	Required I/ha for 100 dr/cm ²			
250	82			
300	141			
350	225			
400	1355			

Foliar index and degree of coverage

You should take due account of the actual foliar index (foliar surface/surface area). The foliar surface per hectare may increase from e.g. 0.1 to 6 ha due to the growing of the crop. Accounting for the underside of the leaf as well, the surface to be covered is doubled once again.

Suppose, you have to perform a spraying in a crop with a foliar index of 5 and a droplet size of 200 micron. The total crop must be covered. The quantity of spraying liquid required for a coverage of 100 droplets per cm² amounts to $(2 \times 5 \times 42) = 420$ l/ha.

In addition to the number of droplets per cm², the degree of coverage in % is also important. A smaller droplet covers a smaller surface than a larger droplet. Therefore, this droplet also has to spread out to obtain the same degree of coverage. If the foliar surface is fatty or hairy, a surfactant may be added to the chemicals. In this way the degree of coverage is increased by e.g. 20x when the contact angle is reduced from 160° to 60°.

Selection of the nozzle

The Crop Protection Manuals give information on the quantity of liquid (in I/ha) and on the droplet spectre with which optimal results are obtained in different sprayings. This information is usually represented by a code. The code consists of a digit (for the output) followed by a letter (for the droplet size). Code 4M, for example, means that it is recommended to spray at 400 I/ha with a nozzle which upon dosing produces a droplet size from the "Medium" spray quality.

Different droplet size spectre measuring systems produce different results. Therefore, it has been decided to classify the droplet size spectres of the nozzles on the basis of a kind of standard nozzle. The BCPC classification consists of the six droplet size classes: extremely coarse (XC), very coarse (VC), coarse (C), medium (M), fine (F) and very fine (VF). It is important to be aware that this is only a very rough classification!

Droplet size classification:

Nozzle Droplet Size					
Class	BCPC Classification	Droplet size (mu)			
VF	very fine	smaller than 150			
F	fine	150-200			
М	medium	200-300			
С	coarse	300-400			
VC	very coarse	400-500			

Nozzle Droplet Size			
Class	BCPC Classification	Droplet size (mu)	
XC	extremely coarse	500	

AG,WZ00009,196-19-07JUN06

Minimize Spray Drift Recommendations

Following measures can be applied to reduce the spray drift (off-target area application):

Drift Reduction Nozzles

Use nozzles with an active or passive air induction which is offered with the machine (see Spray Volume Table). Depending on nozzle type, boom height, and spray pressure. These help significantly to reduce the spray drift by 50—95 %.

Boom Height

The recommended boom height is 50 cm (MAX 75 cm) above the target area. Most of the drift reduction nozzles are designed for 50 cm spraying height. Ensure that you calibrate the boom height correctly to enable the proper work of the boom guidance system.

BB83525,0000187-19-18SEP14

Adjusting the Nozzle Output

The crop sprayer is equipped with a spraying computer. The section entitled GreenStar[™] Sprayer Control System describes the settings of the nozzle output.

In the case of manual spraying, the spraying pressure must be adjusted as follows in order to spray a specific quantity in liters/hectare:

- Select the required application rate in litres/hectare (e.g. 300 l/ha).
- Select the required driving speed (e.g. 6 km/h) at an ideal combination of engine speed and transmission ratio. Make allowances for the fact that an increase in driving speed may negatively affect penetration, transverse distribution and increase spray drift.
- Always check the driving speed! This may be done as follows:
- 1. Mark out a distance of 100 m in the field.
- 2. With the tank half full of water, drive to the field.
- 3. Measure the time required for driving 100 m.

4. Determine the driving speed on the basis of the table below:

Time required to drive 100 m in relation to the driving speed:

Time (s)	120	90	72	60	51	45	40	36
km/h	3	4	5	6	7	8	9	10

The speed can also be calculated as follows:

Driving speed (km/h) = 360 ÷ time (sec)

• Next read the output per nozzle from the spray volume table (in this example 1.5 l/min). If you wish to set a value different from the one given in the table, calculate this value as follows:

Nozzle output (l/min) = (l/ha x km/h x nozzle spacing) ÷ 600

- Now read in the nozzle output table which nozzle to select in combination with the spraying pressure. According to the example, set the nozzle output to 1.5 l/min. This can for instance be achieved with a 04 nozzle (e.g. XR-11004) at a spraying pressure of 3 bar.
- Perform the **Flow** sensor calibration of the machine on a regular basis to compensate for loss of pressure and nozzle wear!

The pressure indicated by pressure gauge or pressure sensor is higher than the spraying pressure on the nozzles, because of pressure loss in the spray line and the presence of diaphragm valves in the nozzle holders. Therefore check the nozzle output with clean water. Set the pressure gauge to the spraying pressure found (e.g. 3 bar) and collect the nozzle output in a measuring jug during 1 minute. Measure several nozzles and calculate the average. If the output is different from the table value (1.5 I/ min), adjust the spraying pressure until the correct output per nozzle is achieved.

In this way, determine the pressure loss on the machine for various outputs and nozzles.

WZ00232,0000330-19-11OCT11

Spray Volume Table Flat Spray Tip ER

Nozzle Flow							
Application Rate		Speed km/h					
l/ha	4	6	8	10	12	16	20
100	0.33	0.50	0.67	0.82	1.00	1.32	1.64
125	0.42	0.63	0.84	1.04	1.25	1.67	2.08
150	0.50	0.75	1.00	1.25	1.50	2.00	2.50
175	0.58	0.88	1.17	1.46	1.75	2.34	2.92

Working with the Machine

			Nozzle Flow									
Application Rate	Application Rate Speed km/h											
l/ha	4	6	8	10	12	16	20					
200	0.67	1.00	1.33	1.68	2.00	2.68	3.36					
225	0.75	1.13	1.50	1.88	2.25	4.01	3.76					
250	0.83	1.25	1.67	2.08	2.50	3.33	4.16					
275	0.92	1.38	1.83	2.30	2.75	3.68	4.60					
300	1.00	1.50	2.00	2.50	3.00	4.00	5.00					
350	1.12	1.75	2.33	2.92	3.50	4.67	5.84					
400	1.33	2.00	2.67	3.33	4.00	5.33	6.66					
450	1.50	2.25	3.00	3.75	4.50	6.00	7.5					
500	1.65	2.50	3.33	4.17	5.00	6.67	8.34					
600	2.00	3.00	4.00	5.00	6.00	8.00	10.00					
800	2.67	4.00	5.33	6.67	8.00	10.67	13.34					
1000	3.33	5.00	6.67	8.33	10.00	13.33	16.66					

Example

Example									
Application Rate Single Nozzle Capacity Nozzle Type Pressure									
300 l/ha at 6 km/h	300 l/ha at 6 km/h 1.50 l/min 04 3.0 bar								

Nozzle Output and Nozzle Droplet Spectres Extended Range (ER) 110° John Deere™

	Spraying pressure in bar											
	1	1.5	2	3	4	5						
Nozzle no.		Nozzle output I/min and droplet size based on ASABE S572.1 standard										
ER 110.02	0.46 / M	0.57 / F	0.65 / F	0.80 / F	0.92 / F	1.03 / F						
ER 110.03	0.69 / M	0.85 / M	0.98 / F	1.20 / F	1.39 / F	1.55 / F						
ER 110.04	0.92 / M	1.13 / M	1.31 / M	1.60 / M	1.85 / F	2.07 / F						
ER 110.05	1.15 / M	1.41 / M	1.63 / M	2.00 / M	2.31 / F	2.58 / F						
ER 110.06	1.39 / C	1.70 / M	1.96 / M	2.40 / M	2.77 / M	3.10 / F						
ER 110.08	1.85 / C	2.26 / C	2.61 / M	3.20 / M	3.70 / M	4.13 / F						

GuardianAIR Twin (GAT) 110° John Deere™

	Spraying pressure in bar										
	2	3	4	5	6	7	8				
Nozzle no.	Nozzle output I/min and droplet size based on ASABE S572.1 standard										
GAT 110.02	0.65 / C	0.80 / M	0.92 / M	1.03 / M	1.13 / M	1.22 / F	1.31 / F				
GAT 110.025	0.82 / VC	1.00 / C	1.15 / M	1.29 / M	1.41 / M	1.53 / M	1.63 / M				
GAT 110.03	0.98 / VC	1.20 / C	1.39 / M	1.55 / M	1.70 / M	1.83 / M	1.96 / M				
GAT 110.04	1.31 / C	1.60 / M	1.85 / M	2.07 / M	2.26 / M	2.44 / M	2.61 / M				
GAT 110.05	1.63 / VC	2.00 / C	2.31 / M	2.58 / M	2.83 / M	3.06 / M	3.27 / M				
GAT 110.06	1.96 / VC	2.40 / C	2.77 / M	3.10 / M	3.39 / M	3.67 / M	3.92 / M				
GAT 110.08	2.61 / VC	3.20 / VC	3.70 / C	4.13 / M	4.53 / M	4.89 / M	5.23 / M				

John Deere is a trademark of Deere & Company

Ultra Low-drift (ULD) 120° John Deere™

	Spraying pressure in bar										
	2	3	4	5	6	7	8				
Nozzle no.	Nozzle output I/min and droplet size based on ASABE S572.1 standard										
ULD 120.015	0.49 / XC	0.60 / VC	0.69 / C	0.77 / C	0.85 / M	0.92 / M	0.98 / M				
ULD 120.02	0.65 / XC	0.80 / VC	0.92 / C	1.03 / M	1.13 / M	1.22 / M	1.31 / M				
ULD 120.025	0.82 / XC	1.00 / C	1.15 / C	1.29 / M	1.41 / M	1.53 / M	1.63 / M				
ULD 120.03	0.98 / XC	1.20 / C	1.39 / C	1.55 / M	1.70 / M	1.83 / M	1.96 / M				
ULD 120.04	1.31 / UC	1.60 / UC	1.85 / XC	2.07 / XC	2.26 / VC	2.44 / C	2.61 / C				
ULD 120.05	1.63 / UC	2.00 / XC	2.31 / XC	2.58 / VC	2.83 / VC	3.06 / C	3.27 / C				

Low-drift Air (LDA) 110° John Deere™

		Spraying pressure in bar										
	1	1.5	2	3	4	5	6	7	8			
Nozzle no.		Nozzle output I/min and droplet size based on ASABE S572.1 standard										
LDA 110.015	0.35 / UC	0.42 / UC	0.49 / XC	0.60 / C	0.69 / M	0.77 / M	0.85 / M	0.92 / M	0.98 / M			
LDA 110.02	0.46 / UC	0.57 / XC	0.65 / VC	0.80 / M	0.92 / M	1.03 / M	1.13 / M	1.22 / M	1.31 / M			
LDA 110.025	0.58 / UC	0.71 / XC	0.82 / VC	1.00 / C	1.15 / M	1.29 / M	1.41 / M	1.53 / M	1.63 / M			
LDA 110.03	0.69 / UC	0.85 / UC	0.98 / XC	1.20 / VC	1.39 / C	1.55 / M	1.70 / M	1.83 / M	1.96 / M			
LDA 110.04	0.92 / UC	1.13 / XC	1.31 / VC	1.60 / C	1.85 / M	2.07 / M	2.26 / M	2.44 / CM	2.61 / M			
LDA 110.05	1.15 / UC	1.41 / XC	1.63 / XC	2.00 / C	2.31 / C	2.58 / M	2.83 / M	3.06 / M	3.27 / M			

XR-TEEJET®

	Spraying pressure in bar											
	1	1.5	2	2.5	3	3.5	4					
Nozzle no.		Nozzle output I/min and droplet size (BCPC classification)										
XR11001	0.23 / F	0.28 / F	0.32 / F	0.36 / F	0.39 / F	0.42 / VF	0.45 / VF					
XR110015	0.34 / F	0.42 / F	0.48 / F	0.54 / F	0.59 / F	0.64 / F	0.68 / F					
XR11002	0.46 / M	0.56 / F	0.65 / F	0.72 / F	0.79 / F	0.85 / F	0.91 / F					
XR11003	0.68 / M	0.83 / M	0.96 / F	1.08 / F	1.18 / F	1.27 / F	1.36 / F					
XR11004	0.91 / M	1.12 / M	1.29 / M	1.44 / M	1.58 / M	1.71 / F	1.82 / F					
XR11005	1.14 / C	1.39 / M	1.61 / M	1.80 / M	1.97 / M	2.13 / M	2.27 / M					
XR11006	1.37 / C	1.68 / C	1.94 / M	2.16 / M	2.37 / M	2.56 / M	2.74 / M					
XR11008	1.82 / C	2.23 / C	2.58 / C	2.88 / C	3.16 / M	3.41 / M	3.65 / M					

Turbo TEEJET®

		Spraying pressure in bar										
	1	1.5	2	2.5	3	3.5	4	5	6			
Nozzle no.		Nozzle output I/min and droplet size (BCPC classification)										
TT11001	0.23 / C	0.28 / M	0.32 / M	0.36 / M	0.39 / F	0.42 / F	0.45 / F	0.50 / F	0.55 / F			
TT110015	0.34 / C	0.42 / C	0.48 / M	0.54 / M	0.59 / M	0.64 / M	0.68 / M	0.76 / F	0.83 / F			
TT11002	0.46 / VC	0.56 / C	0.65 / C	0.72 / M	0.79 / M	0.85 / M	0.91 / M	1.02 / M	1.12 / F			
TT110025	0.57 / VC		0.81 / C		0.99 / M		1.14 / M	1.28 / M	1.40 / M			
TT11003	0.68 / VC	0.83 / C	0.96 / C	1.08 / C	1.18 / C	1.27 / M	1.36 / M	1.52 / M	1.67 / M			
TT11004	0.91 / XC	1.12 / VC	1.29 / C	1.44 / C	1.58 / C	1.71 / C	1.82 / C	2.04 / M	2.23 / M			
TT11005	1.14 / XC	1.39 / VC	1.61 / VC	1.80 / VC	1.97 / C	2.13 / C	2.27 / C	2.54 / C	2.79 / M			
TT11006	1.37 / XC	1.68 / VC	1.94 / VC	2.16 / VC	2.37 / C	2.56 / C	2.74 / C	3.06 / C	3.35 / M			
TT11008	1.82 / XC	2.23 / XC	2.58 / VC	2.88 / VC	3.16 / C	3.41 / C	3.65 / C	4.08 / C	4.47 / M			

John Deere is a trademark of Deere & Company TEEJET is a registered trademark of Spraying System Co.

Turbo TWINJET®

	Spraying pressure in bar										
	1.5	2	3	4	5	6					
Nozzle no.	Nozzle output I/min and droplet size (BCPC classification)										
TTJ6011002	0.56 / C	0.65 / C	0.79 / C	0.91 / M	1.02 / M	1.12 / M					
TTJ60110025	0.70 / VC	0.81 / C	0.99 / C	1.14 / C	1.28 / M	1.40 / M					
TTJ6011003	0.83 / VC	0.96 / C	1.18 / C	1.36 / C	1.52 / C	1.67 / M					
TTJ6011004	1.12 / VC	1.29 / C	1.58 / C	1.82 / C	2.04 / C	2.23 / M					
TTJ6011005	1.39 / VC	1.61 / C	1.97 / C	2.27 / C	2.54 / C	2.79 / C					
TTJ6011006	1.68 / XC	1.94 / VC	2.37 / C	2.74 / C	3.064 / C	3.35 / C					

TD HiSpeed AGROTOP®

		Spraying pressure in bar								
	3	3.4	3.8	4.7	5.2	6.2	6.7	7.9		
Nozzle no.		Nozzle output I/min and droplet size (BCPC classification)								
TD HiSpeed 110-02	0.80 / VC	0.85 / VC	0.90 / VC	1.00 / C	1.05 / C	1.15 / C	1.20 / M	1.30 / M		
			-	Spraying pre	essure in bar		-	-		
	3	3.5	4.1	4.4	5.3	6	6.7	8.3		
Nozzle no.		N	ozzle output l/	min and drop	let size (BCP	C classificatio	on)			
TD HiSpeed 110-03	1.20 / VC	1.30 / VC	1.40 / VC	1.45 / C	1.60 / C	1.70 / C	1.80 / C	2.00 / M		
	1									
				Spraying pre	essure in bar					
	3	3.4	4.2	4.7	5.2	6.2	7.3	7.9		
Nozzle no.		N	ozzle output l/	min and drop	let size (BCP	C classificatio	on)			
TD HiSpeed 110-04	1.60 / VC	1.70 / VC	1.90 / VC	2.00 / C	2.10 / C	2.30 / C	2.50 / M	2.60 / M		

AI-TEEJET®

	Spraying pressure in bar										
	3	3.5	4	4.5	5	6	7	8			
Nozzle no.		Nozzle output I/min and droplet size (BCPC classification)									
AI110015	0.59 / VC	0.64 / VC	0.68 / C	0.72 / C	0.76 / C	0.83 / C	0.90 / C	0.96 / C			
AI11002	0.79 / VC	0.85 / VC	0.91 / VC	0.97 / C	1.02 / C	1.12 / C	1.21 / C	1.29 / C			
AI110025	0.99 / VC	1.07 / VC	1.14 / VC	1.21 / VC	1.28 / VC	1.40 / C	1.51 / C	1.62 / C			
AI11003	1.18 / VC	1.27 / VC	1.36 / VC	1.45 / VC	1.52 / VC	1.67 / C	1.80 / C	1.93 / C			
AI11004	1.58 / VC	1.71 / VC	1.82 / VC	1.94 / VC	2.04 / VC	2.23 / VC	2.41 / C	2.58 / C			
AI11005	1.97 / XC	2.13 / VC	2.27 / VC	2.41 / VC	2.54 / VC	2.79 / VC	3.01 / C	3.22 / C			
AI11006	2.37 / XC	2.56 / VC	2.74 / VC	2.90 / VC	3.06 / VC	3.35 / VC	3.62 / C	3.87 / C			

ID LECHLER®

	Spraying pressure in bar										
	3	3.5	4	4.5	5	6	7	8			
Nozzle no.		Nozzle output I/min. and droplet size (BCPC classification)									
ID12001	0.39 / C	0.42 / C	0.45 / C	0.48 / C	0.51 / C	0.57 / C	0.60 / M	0.64 / M			
ID120015	0.59 / VC	0.63 / C	0.68 / C	0.72 / C	0.76 / C	0.83 / C	0.90 / C	0.96 / M			
ID12002	0.80 / VC	0.85 / VC	0.92 / C	0.96 / C	1.03 / C	1.13 / C	1.22 / C	1.30 / C			
ID120025	0.99 / VC	1.07 / VC	1.15 / VC	1.22 / VC	1.28 / C	1.40 / C	1.52 / C	1.62 / C			

TWINJET is a registered trademark of Spraying System Co. AGROTOP is a registered trademark of agrotop GmbH TEEJET is a registered trademark of Spraying System Co. LECHLER is a registered trademark of Lechler GmbH & Co. KG.

Working with the Machine

				Spraying pre	essure in bar			
	3	3.5	4	4.5	5	6	7	8
Nozzle no.		No	ozzle output l/	/min. and drop	olet size (BCP	C classificatio	on)	
ID12003	1.19 / VC	1.26 / VC	1.37 / VC	1.44 / VC	1.53 / VC	1.68 / C	1.81 / C	1.94 / C
ID12004	1.58 / VC	1.68 / VC	1.82 / VC	1.91 / VC	2.04 / VC	2.23 / VC	2.41 / C	2.58 / C
ID12005	1.97 / VC	2.10 / VC	2.28 / VC	2.39 / VC	2.55 / VC	2.79 / VC	3.01 / VC	3.22 / VC
ID12006	2.36 / VC	2.51 / VC	2.73 / VC	2.86 / VC	3.05 / VC	3.34 / VC	3.61 / VC	3.86 / VC
ID12008	3.16 / VC	3.41 / VC	3.65 / VC	3.87 / VC	4.08 / VC	4.47 / VC	4.83 / VC	5.16 / VC

IDK LECHLER R

				Spray	ing pressure	in bar			
	1.5	2	2.5	3	3.5	4	4.5	5	6
Nozzle no.			Nozzle out	put I/min. ar	d droplet siz	ze (BCPC cla	ssification)		
IDK120015	0.42 / C	0.48 / C	0.53 / C	0.59 / C	0.63 / C	0.68 / M	0.72 / M	0.76 / M	0.84 / M
IDK12002	0.55 / VC	0.63 / C	0.71 / C	0.78 / C	0.85 / C	0.90 / C	0.96 / M	1.01 / M	1.11 / M
IDK120025	0.70 / VC	0.81 / VC	0.90 / C	0.99 / C	1.07 / C	1.15 / C	1.22 / C	1.28 / M	1.40 / M
IDK12003	0.82 / VC	0.95 / VC	1.06 / VC	1.17 / C	1.26 / C	1.35 / C	1.44 / C	1.52 / C	1.64 / M
IDK12004	1.09 / VC	1.26 / VC	1.42 / VC	1.55 / VC	1.68 / C	1.80 / C	1.91 / C	2.02 / C	2.21 / C
IDK12005	1.36 / XC	1.57 / VC	1.77 / VC	1.94 / VC	2.10 / VC	2.25 / C	2.39 / C	2.48 / C	2.75 / C

IDN LECHLER®

		Spraying pressure in bar									
	2	2 3 4 5 6 7 8									
Nozzle no.		Nozzle output I/min. and droplet size (BCPC classification)									
IDN 120025	0.81 / XC	0.99 / XC	1.15 / VC	1.28 / VC	1.40 / C	1.52 / C	1.62 / C				
IDN 12003	0.97 / XC	1.19 / XC	1.37 / VC	1.53 / VC	1.68 / C	1.81 / C	1.94 / C				

IDKN LECHLER®

				S	praying pre	essure in b	ar				
	1	1 1.5 2 2.5 3 3.5 4 4.5 5 6									
Nozzle no.		Nozzle output I/min. and droplet size (BCPC classification)									
IDKN 12004	0.91 / XC	1 / XC 1.12 / XC 1.29 / VC 1.44 / VC 1.58 / VC 1.71 / VC 1.82 / C 1.94 / C 2.04 / C 2.23 / M									

IDKT LECHLER®

		Spraying pressure in bar									
	1	1.5	2	2.5	3	3.5	4	4.5	5	6	
Nozzle no.			Nozzle	output I/mi	n. and drop	olet size (B	CPC classif	ication)			
IDKT 12003		0.84 / C	0.97 / C	1.08 / C	1.19 / C	1.28 / M	1.37 / M	1.46 / M	1.53 / M	1.68 / F	
IDKT 12004	0.91 / VC	1.12 / VC	1.29/ C	1.44 / C	1.58 / C	1.71 / C	1.82 / M	1.94 / M	2.04 / M	2.23 / M	
IDKT 12005	1.14 / VC	1.39 / VC	1.61 / VC	1.80 / C	1.97 / C	2.13 / C	2.28 / C	2.42 / M	2.55 / M	2.79 / M	

WZ00232,0000209-19-28SEP15

Spraying with Liquid Fertilizers

IMPORTANT: Only the use of fertilizers within the pH range of 5 - 9 is recommended.

IMPORTANT: After application of liquid fertilizers, the machine must be thoroughly cleaned.

LECHLER is a registered trademark of Lechler GmbH & Co. KG.

- IMPORTANT: Always use the nozzle manufacturer's recommendation for the filter mesh size (nozzle screen and pressure filter). For most liquid fertilizer applications the recommendation is for a 30 mesh filter. Deviating from the recommendation can cause high system pressures which can affect critical components in the solution system.
- NOTE: Due to inconsistent cleanliness found in liquid fertilizers it is recommended to install an in-line filter when using liquid fertilizer storage tanks.

Liquid fertilizers have a higher viscosity and density than crop protection chemicals. Due to their higher viscosity the pressure loss in the system will be greater, it is crucial to select the appropriate filter mesh size. Due to their higher density (for AHL 1.28 kg/l), the nozzle output at equal pressure is lower than that of crop protection chemicals. The clean water output must therefore be adjusted for the fertilizer used, depending on the fertilizer's density.

To fill the tank with liquid fertilizers in combination with water and/or crop protection chemicals, observe the following points:

Undiluted liquid fertilizers with crop protection chemicals:

- First fill half of the tank with undiluted liquid fertilizer
- Next add the quantity of crop protection chemical required
- Then top up the tank with undiluted liquid fertilizer
- During filling agitation must be activated!

Water-diluted liquid fertilizers with crop protection chemicals:

- First fill half of the tank with water
- Next add the quantity of liquid fertilizer required
- Finally, with the agitator activated, add the crop protection chemicals

The mixing ratio water - liquid fertilizer must be at least 3:1, because otherwise the risk of leaf burning is too high. A mixing ratio of 4:1 is even better.

Liquid fertilizers (e.g. AHL) can be applied in different manners.

Spraying solutions other than water

CAUTION: Fertilizers increase the operating mass of the vehicle more than water; do not exceed the load capacity for the tires used and the maximum allowed homologated mass of the machine configuration.

Since all the tabulations are based on spraying water, which weighs 1 kilogram per liter, conversion factors

must be used when spraying solutions which are heavier or lighter than water. To determine the proper nozzle size for the solution, first multiply the desired application rate in l/min or l/ha by the water rate conversion factor. Then use the new converted l/min or l/ha rate to select the proper nozzle size.

Example: Desired application rate is 100 l/ha of a solution which has a density of 1.28 kg/l. Determine the correct nozzle size as follows:

l/ha (solution) x conversion factor = l/ha (from table). 100 l/ha (1.28 kg/l solution) x 1.13 = 113 l/ha (water).

Choose a nozzle size that will supply 113 l/ha of water at the desired pressure.

Density - kg/l	Conversion Factors
0.84	0.92
0.96	0.98
1.00 - WATER	1.00
1.08	1.04
1.20	1.10
1.28	1.13
1.32	1.15
1.44	1.20
1.68	1.30

Field application with flat fan nozzles

Liquid fertilizers may be applied in the field in undiluted or water-diluted form (water - AHL ratio 3:1 or higher) by means of flat fan nozzles. The uptake mainly occurs via the leaf, but also via the roots. A combined application of herbicides and/or growing regulators is possible, but always enquire at your dealer of crop protection chemicals whether mixing is allowed.

By applying the fertilizers to the field in coarse droplets at low pressure and the spray boom sufficiently high (80 - 100 cm) above the crop, the risk of leaf burning (scorch) will be reduced. Extended range flat fan nozzles (such as XR) can be used for this type of application, with a pressure of 1 to 1.5 bar (max. 2 bar).

Particularly suitable for the application of liquid fertilizers are the anti-drift nozzles (e.g. TEEJET® DG) and particularly the high precision deflector nozzles (e.g. Turbo TEEJET®). The nozzles produce coarse to medium coarse droplets in the higher pressure ranges (1.5 to 4 bar) as well and therefore have a wider field of application.

Liquid fertilizers may also be applied with air induction nozzles (e.g. TEEJET® AI). If the liquid fertilizers are applied in undiluted form, a pressure of 2 to 3 bar must be used. If the liquid fertilizers are diluted with water (water - AHL ratio 1: 5), the operating pressure must be set at 4 - 6 bar.

Field application with 3-hole nozzles

These nozzles have been specifically designed for spraying pure liquid fertilizers. The uptake occurs mainly

TEEJET is a registered trademark of Spraying System Co.

via the roots. The fertilizers are applied in very coarse droplets, at a low drifting rate and a minimum risk of leaf burning. Combined spraying with herbicides and/or growing regulators is not possible.

The TEEJET® 3-hole nozzle consists of a color code nozzle with 3 output openings, which spray the liquid downwards in a semi-circular pattern. A seal and a removable metering orifice is fitted in the nozzle to control the nozzle output. The recommended spraying pressure is 1.5 to 4 bar. The TEEJET® 3-hole nozzle can be mounted on a single or multi nozzle holder.

Field application with 6-hole nozzles

The Straight Stream Ceramic (STC) provides an optimized solution for applying liquid fertilizer. By providing a six stream pattern, foliar contact is minimized and uniform coverage is ensured. The STC ceramic metering orifice and low pressure distribution chamber keeps the streams stable, reducing atomization and helping to prevent leaf burn.

- Compact design provides rapid installation onto standard nozzle bodies and helps to prevent damage
- A six stream design distributes fertilizer more evenly than a three stream design
- Ceramic metering orifice provides a reliable and accurate flow distribution
- Moulded from a wear-resistant polyacetal to promote increased durability
- Quick Change nozzle includes tip and cap two pieces and gasket for sizes 015–6, sizes 08–10 are a onepiece design

The John Deere[™] 6-hole nozzle consists of a bayonet cap with six output openings. The 6-hole nozzle can be mounted on a single or multi-nozzle holder.

Field application with 7-hole nozzles

These nozzles have been specifically designed for

spraying pure liquid fertilizers. The uptake occurs mainly via the roots. The fertilizers are applied in very coarse droplets, at a low drifting rate and a minimum risk of leaf burning. Combined spraying with herbicides and/or growing regulators is not possible.

The TEEJET® 7-hole nozzle consists of a bayonet cap with 7 output openings, which spray the liquid backwards in a semi-circular pattern, opposite to the direction of driving. The recommended spraying pressure is 1.5 to 4 bar. The TEEJET® 7-hole nozzle can be mounted on a single or multi nozzle holder, with its openings facing backwards.

WZ00085,00002FB-19-17SEP15

Field Spraying Nozzle Output with Liquid Fertilizers

The sprayer is equipped with a spraying computer as standard. The Section entitled **Sprayer Control System** describes the settings of the nozzle output when working with liquid fertilizers. If the computer works with a pressure sensor, the density correction factor must be programmed and activated. If the computer works with a flow sensor, no correction is necessary for the application rate control, but necessary for displaying the correct (calculated) liquid pressure.

In the case of manual spraying, the spraying pressure must be adjusted as described in Adjusting the nozzle output in this Section. The resulting spraying pressure must, however, be multiplied by the density of the liquid. To this end, first weigh 1 liter to determine the density and next multiply the pressure by this value.

The tables give the output of the 6-hole Straight Stream Ceramic (STC) from John Deere, 3-hole & 7-hole Streamjet fertilizer nozzles.

Nozzle	Pressure in bar	Nozzle flow rate (I/min)	7 km/h (L/Ha)	8 km/h (L/Ha)	10 km/h (L/Ha)	12 km/h (L/Ha)	15 km/h (L/Ha)	20 km/h (L/Ha)
STC6-015	1.5	0.42	72	63	50	42	34	25
	2.0	0.49	84	74	59	49	39	29
	2.5	0.55	94	83	66	55	44	33
	3.0	0.60	103	90	72	60	48	36
	4.0	0.69	118	104	83	69	55	41
STC6-02	1.5	0.57	98	86	68	57	46	34
	2.0	0.65	111	98	78	65	52	39
	2.5	0.73	125	110	88	73	58	44
	3.0	0.80	137	120	96	80	64	48
	4.0	0.92	158	138	110	92	74	55
STC6-03	1.5	0.85	146	128	102	85	68	51

Straight Stream Ceramic (STC6) John Deere™

TEEJET is a registered trademark of Spraying System Co.

John Deere is a trademark of Deere & Company

Nozzle	Pressure in bar	Nozzle flow rate (l/min)	7 km/h (L/Ha)	8 km/h (L/Ha)	10 km/h (L/Ha)	12 km/h (L/Ha)	15 km/h (L/Ha)	20 km/h (L/Ha)
	2.0	0.98	168	147	118	98	78	59
	2.5	1.10	189	165	132	110	88	66
	3.0	1.20	206	180	144	120	96	72
	4.0	1.39	238	209	167	139	111	83
STC6-04	1.5	1.13	194	170	136	113	90	68
	2.0	1.31	225	197	157	131	105	79
	2.5	1.46	250	219	175	146	117	88
	3.0	1.60	274	240	192	160	128	96
	4.0	1.85	317	278	222	185	148	111
STC6-05	1.5	1.41	242	212	169	141	113	85
	2.0	1.63	279	245	196	163	130	98
	2.5	1.83	314	275	220	183	146	110
	3.0	2.00	343	300	240	200	160	120
	4.0	2.31	396	347	277	231	185	139
STC6-06	1.5	1.70	291	255	204	170	136	102
	2.0	1.96	336	294	235	196	157	118
	2.5	2.19	375	329	263	219	175	131
	3.0	2.40	411	360	288	240	192	144
	4.0	2.77	475	416	332	277	222	166
STC6-08	1.5	2.26	387	339	271	226	181	136
	2.0	2.61	447	392	313	261	209	157
	2.5	2.92	501	438	350	292	234	175
	3.0	3.20	549	480	384	320	256	192
	4.0	3.70	634	555	444	370	296	222
STC6-10	1.5	2.80	480	420	336	280	224	168
	2.0	3.30	566	495	396	330	264	198
	2.5	3.70	634	555	444	370	296	222
	3.0	4.00	686	600	480	400	320	240
	4.0	4.60	789	690	552	460	368	276
STC6-15	1.5	4.20	720	630	504	420	336	252
	2.0	4.90	840	735	588	490	392	294
	2.5	5.50	943	825	660	550	440	330
	3.0	6.00	1029	900	720	600	480	360
	4.0	6.90	1183	1035	828	690	552	414

SJ-3 Streamjet®

Nozzle	Pressure in bar	Nozzle flow rate (I/ min) with water	8 km/h (L/Ha)	10 km/h (L/Ha)	12 km/h (L/Ha)	16 km/h (L/Ha)	20 km/h (L/Ha)
SJ3-VP-015	1.5	0.44	66.0	52.8	44.0	33.0	26.4
	2.0	0.50	75.0	60.0	50.0	37.5	30.0
	2.5	0.54	81.0	64.8	54.0	40.5	32.4
	3.0	0.58	87.0	69.6	58.0	43.5	34.8
	4.0	0.65	97.5	78.0	65.0	48.8	39.0
SJ3-VP-02	1.5	0.57	85.5	68.4	57.0	42.8	34.2
	2.0	0.64	96.0	76.8	64.0	48.0	38.4
	2.5	0.70	105	84.0	70.0	52.5	42.0
	3.0	0.78	117	93.6	78.0	58.8	46.8
	4.0	0.85	128	102	85.0	63.8	51.0
SJ3-VP-03	1.5	0.91	137	109	91.0	68.3	54.5
	2.0	1.01	152	121	101	75.8	60.5
	2.5	1.10	165	132	110	82.5	66.0
	3.0	1.18	177	142	118	88.5	71

TEEJET is a registered trademark of Spraying System Co.

Working with the Machine

Nozzle	Pressure in bar	Nozzle flow rate (I/ min) with water	8 km/h (L/Ha)	10 km/h (L/Ha)	12 km/h (L/Ha)	16 km/h (L/Ha)	20 km/h (L/Ha)
	4.0	1.31	197	157	131	98.3	78.5
SJ3-VP-04	1.5	1.17	176	140	117	87.8	70.0
	2.0	1.32	198	158	132	99.0	79
	2.5	1.45	218	174	145	109	87
	3.0	1.56	234	187	156	117	93.5
	4.0	1.75	263	210	175	131	105
SJ3-VP-05	1.5	1.42	213	170	142	107	85.0
	2.0	1.63	245	196	163	122	98
	2.5	1.82	273	218	182	137	109
	3.0	1.96	294	235	196	147	117.5
	4.0	2.18	327	262	218	164	131
SJ3-VP-06	1.5	1.69	254	203	169	127	101.5
	2.0	1.97	296	236	197	148	118
	2.5	2.21	332	265	221	166	132.5
	3.0	2.40	360	288	240	180	144
	4.0	2.63	395	316	263	197	158
SJ3-VP-08	1.5	2.32	348	278	232	174	139
	2.0	2.74	411	329	274	206	164.5
	2.5	2.94	441	353	294	221	176.5
	3.0	3.13	470	376	313	235	188
	4.0	3.50	525	420	350	263	210
SJ3-VP-10	1.5	2.73	410	328	273	205	164
	2.0	3.30	495	396	330	248	198
	2.5	3.55	533	426	355	266	213
	3.0	3.91	587	469	391	293	234.5
	4.0	4.44	666	533	444	333	266.5
SJ3-VP-15	1.5	3.91	587	469	391	293	235
	2.0	4.64	696	557	464	348	278
	2.5	5.29	794	635	529	397	317
	3.0	5.86	879	703	586	440	352
	4.0	6.76	1014	811	676	507	406

SJ-7 Streamjet®

Nozzle	Pressure in bar	Nozzle flow rate (I/ min) with water	8 km/h (L/Ha)	10 km/h (L/Ha)	12 km/h (L/Ha)	16 km/h (L/Ha)	20 km/h (L/Ha)
SJ7-VP-015	1.5	0.39	58.5	46.8	39.0	29.3	23.8
	2.0	0.46	69.0	55.2	46.0	34.5	27.6
	2.5	0.52	78.0	62.4	52.0	39.0	31.2
	3.0	0.57	85.5	68.4	57.0	42.8	34.2
	4.0	0.67	101	80.4	67.0	50.3	40.2
SJ7-VP-02	1.5	0.55	82.5	66.0	55.0	41.3	33.0
	2.0	0.64	96.0	76.8	64.0	48.0	38.4
	2.5	0.72	108	86.4	72.0	54.0	43.2
	3.0	0.80	120	96.0	80.0	60.0	48.0
	4.0	0.93	140	112	93.0	69.8	56.0
SJ7-VP-03	1.5	0.87	131	104	87.0	65.3	52.0
	2.0	1.00	150	120	100	75.0	60.0
	2.5	1.10	165	132	110	82.5	66.0
	3.0	1.18	177	142	118	88.5	71.0
	4.0	1.31	197	157	131	98.3	78.5
SJ7-VP-04	1.5	1.17	176	140	117	87.8	70.0
	2.0	1.33	200	160	133	99.8	80.0

TEEJET is a registered trademark of Spraying System Co.

Nozzle	Pressure in bar	Nozzle flow rate (I/ min) with water	8 km/h (L/Ha)	10 km/h (L/Ha)	12 km/h (L/Ha)	16 km/h (L/Ha)	20 km/h (L/Ha)
	2.5	1.45	218	174	145	109	87.0
	3.0	1.55	233	186	155	116	93.0
	4.0	1.72	258	206	172	129	103
SJ7-VP-05	1.5	1.49	224	179	149	112	89.5
	2.0	1.68	252	202	168	126	101
	2.5	1.83	275	220	183	137	110
	3.0	1.95	293	234	195	146	117
	4.0	2.16	324	259	216	162	129.5
SJ7-VP-06	1.5	1.77	266	212	177	133	106
	2.0	2.01	302	241	201	151	120.5
	2.5	2.19	329	263	219	164	131.5
	3.0	2.35	353	282	235	176	141
	4.0	2.61	392	313	261	196	156.5
SJ7-VP-08	1.5	2.28	342	274	228	171	137
	2.0	2.66	399	319	266	200	159.5
	2.5	2.94	441	353	294	221	176.5
	3.0	3.15	473	378	315	236	189
	4.0	3.46	519	415	346	260	204.5
SJ7-VP-10	1.5	2.84	426	341	284	213	170.5
	2.0	3.32	498	398	332	249	199
	2.5	3.67	551	440	367	275	220
	3.0	3.94	591	473	394	296	236.5
	4.0	4.33	650	520	433	325	260

WZ00232,0000331-19-15SEP15

Preparing the Spraying Liquid

When preparing the spraying liquid, be sure to spray the quantity of agent recommended per hectare. The quantity of agent and the required quantity of liquid per hectare are stated on the packaging. In other cases, consult your dealer of crop protection chemicals.

Determine the exact quantity of spraying liquid to be prepared in advance. Preparing the exact quantity will reduce the amount of residual liquid. In the case of large fields it may be necessary to prepare several tank loads.

Suppose you want to spray a 10 ha field with 300 l/ha and 2 kg of chemicals per ha. The machine has a nominal tank content of 2400 liters. This means that you will need a total of 3000 l of spraying liquid. In this example you will therefore need two tank loads.

The quantity of chemicals per tank load is calculated as follows:

 $X = M \times T / H$

with:	X =	qty of chemicals per tank load in liters
	M =	qty of chemicals (kg or l) per hectare
	T =	tank content in I.
	H =	quantity of liquid per hectare (l/ha)

For the first tank load $(2 \times 2400) / 300 = 16$ kg of chemicals is required. You will have to fill the tank again. Suppose there are still 100 liters of liquid in the tank when you return for a second tank load, and the tank must be filled to 700 liters. Usually there is also a small quantity of residual liquid in the machine (suppose 20 liters). The quantity of chemicals to be added for the last tank load is:

2 x (700 - 100 + 20) / 300 = 4.1 kg.

AG,WZ00009,203-19-20APR15

Filling the Sprayer with Water

IMPORTANT: 1. Always begin filling at low speed until the pump is fully filled with liquid and the liquid flows into the tank. Only increase the pump speed after the pump is completely filled with liquid. To help remove air from dry hoses switch the agitation ON and then OFF when the air is removed. 2. The pump speed must not exceed 540 rpm, provided that the water is not more than 250 cm below the pump level (measured perpendicularly). In the case of extra long filling hoses (more than 6 meters) and/or a lift higher than 250 cm, the pump speed must be reduced to \pm 475 rpm.

3. When filling the tank from open water (CAUTION: IF ALLOWED), it is important not to put the hose into the water until there is suction from the system (pump functioning). When filling/rinsing is completed, first take the hose out of the water and then interrupt the suction (throttle back or switch off PTO). Thus contamination of the surface water will be prevented.

There are different tank filling methods. The first option is filling from the mains tap. A special mains (waterline) connection is available for this purpose. Additionally, a special hydrant connection is available.

Of course, the machine can also be filled via the pump with a filling hose. This will produce a high filling capacity and complies with the requirement of being able to rinse with clean water. The pump is self-priming. To fill, couple the filling hose to the external connection of the suction unit. Check whether the main shut-off valve is in the closed position, whether the valve of the suction unit is in the "external suction" position, the tank/pump selection valve is in the position "return flow to tank" and whether the pressure selection valve is on "pressureless filling". Now start the pump by activating the PTO shaft or the hydraulic pump drive.

Another possibility is to fill water from a storage tank that is located higher or by means of a filling pump and external hydrant through the filling hole. When using an external hydrant, avoid any contact between the filling hose and the tank contents. Thus you will prevent sucking back of the spraying liquid. Therefore, always keep the filling hose of a stationary filling unit above the spraying liquid and never put it in.

Quality of water

Always use water to dissolve chemicals. The use of mains water is preferable to spring water, surface water or rain water. Water of which the composition is not known, may have harmful effects on the functioning of the crop protection chemical and the machine. The water quality is of utmost importance to the spraying result. Below you will find the major demands of water used to dissolve crop protection chemicals. Some crop protection chemicals will decompose more quickly in water with a high pH value (alkaline water). Most products are stable at pH values ranging from 5.5 to 6.5. Therefore you should spray the liquid as soon as possible after preparation. Never leave a filled tank overnight, if possible, because the crop protection chemicals may have decomposed too much the next day. Too high a percentage of salts in the water may also cause problems, such as leaf burning and the formation of crystals (risk of blockage). Never spray with water of which the EC value (electrical conductivity) is greater than 1 (EC). The water temperature does not affect the result of the crop protection chemical, as long as this temperature is between 9°C and 25°C. If necessary, consult your dealer of crop protection chemicals.

Requirements to water for crop protection (source: DLV Horst)

Electrical conductivity	max. 50 mS/cm
рН	5.5-6.5
Hardness	max. 10° D (Ca+Mg)
Chlorine	max. 70 mg/l
Manganese	max. 1 mg/l
Methane gas Carbon dioxide gas Sulphuric gas	must not be present: aggressive
Iron	max. 1 mg/l
Hydrogen carbonate	min. 50 mg/l
Nitrate, nitrite	0 mg/l
Ammonium	max. 2 mg/l
Potassium permangate	max. 15 mg/l
Sulphate	max. 150 mg/l

Any reactions of the various crop protection chemicals with each another (often of different manufacturers) cannot always be predicted. We therefore strongly recommend not to mix different crop protection chemicals. Always read the instructions on the packaging of the crop protection chemicals and consult the dealer of these chemicals.

WZ00232,00005EB-19-02JUN15

Filling with Crop Protection Chemicals

IMPORTANT: Before adding the crop protection chemicals, first read the safety instructions on the label or package.

When preparing the spraying liquid, be sure to distribute the chemicals evenly over the total quantity of liquid. There must not be any undissolved residues in the tank. Intensive agitation is essential. If various chemicals are sprayed simultaneously, always start with the poorly dissolving chemicals, followed by the more soluble ones.

The chemicals can be added via the filling hole, the chemical inductor or with a stationary chemical inductor. Always put the chemicals into the tank with the agitation device activated.

Filling via the filling opening

Fill the tank with water and during filling add the crop protection chemicals via the filling hole and the basket strainer.

In the case of liquid chemicals, we recommend to gradually pour the chemical into the tank during filling. The quantity required can be measured very easily. If there is no graduation on the barrel, measure the correct quantity with a measuring jug. When using powdered chemicals, prepare the solution in a bucket in advance and gradually pour this onto the basket strainer during filling.

Using the chemical inductor (optional)



WZ290102507-UN-01JUN15



A—Pressure Selection Valve

- **B**—Chemical Inductor Position
- C—Pressureless Return to Solution Tank Position
- **D**—Suction Valve E—Injector Shut-Off Valve
- F-Flushing Nozzle Shut-Off Valve

IMPORTANT: Refer to Chemical Inductor in the Operation of the Machine section for complete instructions on the use of the Chemical Inductor.

Fill the solution tank with clean water with the solution pump. Set the pressure selection valve (A) in position pressureless return to solution tank" position (C), until it is filled to approximately one quarter. Turn the pressure selection valve (A) to "Chemical inductor / Rinsing head" position (B).

Operate the flushing nozzles by opening (adjustable) shutoff valve (F).

Adjust the injector with shutoff valve (E) so that it sucks just as much liquid as the amount of water transported to the chemical inductor by the flushing nozzles. When the

water level is above the sieve plate add the crop protection chemicals to the chemical inductor. The dissolved crop protection chemicals from the cistern are sucked in by the injector and transported to the tank through the basket strainer. The inadequately dissolved elements remain behind on the sieving plate until they are sufficiently dissolved to be transported.

With hard to dissolve chemicals, proceed as follows:

Have the pump operate at half speed, to prevent the tank already being fulled before all crop protection chemicals have dissolved and/or barrels have been flushed. If the chemicals in the inductor have not been dissolved, temporarily deactivate the injector until the chemicals are dissolved. After the chemicals are dissolved restart the injector. When the chemical inductor is flushed completely and the crop protection chemicals have been inserted, close the shutoff valves on the injector and the flushing Nozzles.

Top up the solution tank with water to the required level, which can be read from the dry liquid level indicator of solution tank. Set the pressure selection valve (A) to "pressureless return to solution tank" position (C); also refer to Pressure Selection Valve in the section Operation of the Machine.

The machine is designed for a 3 inch filling hose, by using a 2 inch hose the suction performance of the inductor may be impaired. To improve the performance with the 2 inch hose;

- Check filling connections for air leaks
- Reduce the solution pump speed

WZ00232,00005E3-19-21DEC18

Rinsing Empty Containers

Uncleaned empty containers must be stored in a storage room for crop protection chemicals.

The container label identifies if it must be rinsed and the correct method of disposal.

To clean the container, place the opening face-down over the rotating rinsing head and push down until clean water flows. For bags place the tenter over the rinsing head, place bag over the tenter ensuring rinsing head is totally enclosed and press down on the tenter to rinse. Rinsing must be done with clean water. Clean water may be obtained externally (via the filling hose) or sucked in from the rinse tank.

It is recommended to rotate the container while rinsing. Rinse for at least 30 seconds at a rinsing pressure of between 3 and 5 bar. Before the pressure selection valve, a separate pressure regulator has been fitted for this purpose, this has been set to a higher pressure than the chosen spraying pressure.

Also see "Chemical Inductor" in "Operation of the Machine" section.

WZ00232,0000369-19-13OCT11

Performing Spraying Operation

Before starting the spraying work, agitate the tank content for a few minutes to obtain a homogenous liquid. To do this, set an appropriate solution pump speed, press the agitation switch and set the agitation performance on the GreenStar[™] display in **Job Settings** [G].

CAUTION: Do not turn on the machine until you are sure nobody is in the danger zones.

First, set the spray boom to the required height, see table. This is highly dependent on the type of nozzle chosen. The correct height of the selected nozzle is vital for a good overlap of the spraying ranges to achieve a uniform coverage.

The height must be set in relation to:

- the soil, for spraying prior to emergence of the crop (pre emerge)
- the canopy of the crop, for crop spraying (post emerge)

Optimal spray boom height in relation to the spray angle of the nozzles:

Spray Angle	Spray Boom Height
120°	40-60 cm
110°	40-60 cm
80°	60-80 cm

Select the correct gear and engine speed and adjust the required spraying pressure (in manual mode) or enter the target application rate on the computer (in automatic mode). Open all sectional shut-off valves. Spraying is started by opening the master shut-off valve upon entering the spraying tramlines or by activation of the John Deere section control.

To spray the solution tank empty or to prevent foaming of the liquid, it is possible to adjust the agitation system performance in order to maintain a pressure build-up in the system. This allows to spray the solution tank completely empty.

NOTE: Higher sprayer speeds can only be used under certain circumstances. This depends entirely on the chemical which is applied. For adequate application, check the label of the chemical package for local legal requirements.

WZ00232,00005B3-19-20APR15

Processing the Residual Liquids

If there is still liquid in the tank at the end of the field and the next field is to be sprayed with the same chemical, then in fact there is no problem. The tank is refilled and the work can be continued. However, if at the end of the day there is still liquid in the tank or if a different crop protection chemical has to be used, the residual liquid must be processed in a responsible manner.

To deal with the residual liquids effectively select the appropriate rinse or dilution program on the sprayer, **AutoDilute** for step-by-step controlled dilution, **Continuous Dilution** which begins at higher concentration or **Rinse Cycles** (Minimum and Maximum Rinse) for the whole machine.

The residual liquid can be diluted with clean water from the rinse tank as described in **Rinse Tank** in the section entitled **Operation of the Machine**. The highly diluted solution may be sprayed over the field at an increased driving speed and reduced pressure. The overdosage usually does not affect the crop.

NOTE: The operator should ensure to adhere to the local regulations for rinsing and cleaning of the machine

WZ00232,000036A-19-13OCT11

Cleaning the Machine

IMPORTANT: Before cleaning the machine, first check the label, package or safety instructions of the chemical if special rinsing procedures or special cleaning agents are required.

Cleaning of the spraying equipment prevents damage. The risk of damage is particularly great when working with herbicides. However, other chemicals can also be harmful because of their mutual reaction.

Internal Cleaning

After the residual liquids have been processed (see **Processing the Residual Liquids** in this section) the machine must be internally cleaned as described in **System Rinse** in the section entitled **Operation of the Machine**. The inner tank walls must be cleaned by the operator with the tank rinsing system after each spraying job (see **System Rinse** in the section entitled **Operation of the Machine**).

When changing to another chemical, the machine must be thoroughly cleaned with special cleaning agents:

Ammonia (9%)

- Dosage: 30 ml/100 I tank content
- Action: cleaning action

Javel water (15%)

CAUTION: Never use Javel water in combination with ammonia, as this may produce poisonous gases.

- Dosage: 150 ml/100 I tank content
- Action: cleaning action and neutralising effect on chemicals such as Ally.

Prima Clean



- Dosage: 100 g/100 I tank content
- Action: neutralises residues of chemicals

All Clear Extra

- Dosage: 500 ml/100 I tank content
- Action: neutralises residues of chemicals

According to their suppliers, all four agents may be sprayed out on the crop treated.

Discharging rinsing water or residual liquids into the surface water, the sewer or the soil is absolutely prohibited. Collect the rinsing water in a reservoir for reuse or for processing on the field.

External Cleaning

CAUTION: Always wear means of personal protection during cleaning!

Waste water released during external cleaning of the machine must not be re-used and must under no condition be discharged to surface water, soil or sewer. If external cleaning of the machine is not performed on the field, the cleaning water must be collected separately to be processed in special waste water processing plants.

Given the costs attached to the realization of provisions for the collection and processing of waste water released during external cleaning, it is recommended to select a different option. The alternative is to externally clean the machine on the field. Research on sprayers has demonstrated that, following the external cleaning of the machine on the field, the impact on the soil is far below the permissible field spraying standard. To perform external cleaning, connect a washing brush. Washing brushes clean the machine much more thoroughly and use much less water than spray guns. During external cleaning, take due account of the electrical components; if necessary, cover them with plastic.

WZ00232,0000335-19-11OCT11

Accessories

Rinsing Head in Filling Opening



A—Rinsing Head System at Filling Opening B-Rinsing Head C-Ball Valve

The rinsing head for cleaning empty packaging (A) at the filling hole is a U-trap with rinsing head. After opening the filling hole, rinsing head (B) can be removed from the sleeve and turned 90° so that it stands proud of the filling hole. The feeder pipe running to the rinsing head is connected to the pressure selection valve. The switch on the SCS panel must be set to the Chemical Inductor and Rinsing Head position in order to use the rinse head for cleaning the empty packaging.

An extra ball valve (C) is fitted in the supply line to the rinsing head. The empty packaging can be placed above the rinsing head, so that the inside of the barrel is cleaned upon opening the ball valve. A frame is available to hold empty bags etc. open while they are being rinsed clean. Packaging and containers must not contain any chemical before rinsing with clean water. Clean water is available from the rinse tank or via the external suction unit.

WZ00232,000038C-19-05DEC11



Solution Tank Basket Sprayer Nozzle



WZ290102522-UN-16AUG16

A—Solution Tank Fill Opening B-Basket Strainer -Spray Nozzle with Spreader D-Spray Nozzle Shut-Off Valve

This option is used in conjunction with the **Chemical** Inductor. The option catches difficult to dissolve granules in the basket strainer located in the Solution Tank Fill Opening.

Using the spray nozzle located in the basket strainer the caught granules are dissolved with water controlled from a Shut-Off Valve. The valve is located on the upper right hand side of the Operators Station near the **Protective Clothing Locker.**

When the Chemical Inductor is loading chemicals into the Solution Tank via the Injector, open the Shut-Off Valve for the option to dissolve any caught undissolved granules.

The option can be used while the sprayer is in transport mode. Close the Shut-Off Valve when all granules have been dissolved. Rinse the option when the Solution Tank is being cleaned.

- CAUTION: Keep the fill opening lid closed when the solution system is active. Stop the solution pump before checking for the undissolved chemical granules.
- **IMPORTANT:** Rinse the option as part of the System Rinse program. Select Rinse Cycle from the menu. When the first step is active 'Rinse Recirculation Line', open the Shut-Off Valve (D) for 20 seconds. Repeat the process for each of the Rinse Cycles the program runs.

WZ00232,0000661-19-16DEC16

WZ290102521-UN-16AUG16





WZ290102418-UN-22NOV13

A—Chemical Transport Compartment B—Compartment Lock C—Compartment Storage

The chemical transport compartment is located on the right side of the vehicle, access is through a door which is fitted with a lock (B).

The compartment contains 250 liters or 250 kg of storage (C) for chemicals. Chemical products with container sizes of 5, 10 and 20 L should be possible to transport.

WZ00232,00004A4-19-29NOV13

Hose Reel with Washing Brush and Spray Nozzle



WZ290102505-UN-19MAY15



WZ290101836-UN-19SEP05

A—Hose Reel B—Ball Valve C—Washing Brush D-Quick Release Connector E—Spray Nozzle

> 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.

External cleaning of the machine must preferably take place on the field in order to avoid discharge of crop protection chemicals into the mains water network or surface water. At the center frame of the boom a connection can be used for connection of a hose reel (A) with spray nozzle (E) and washing brush (C) for this purpose. Washing brushes clean the machine much more thoroughly and use much less water than spray nozzles. During external cleaning, take due account of the electrical components; if necessary, cover them with plastic.

The hose reel contains 16.5 m hose in order to clean the spray boom. The hose reel can be rolled up using handle by turning it in the direction indicated (anti-clockwise).

A quick release connector (D) can be used to connect the spray nozzle (E) or the washing brush (C). The brush can be turned through 360° by pressing the orange button on the brush handle. There is a knob at the top of the washing brush handle, with three positions for operation of the washing brush.

WZ00232,00005E9-19-01JUN15

WZ290700068-UN-26MAR10



WZ290700068

A—Last Spray Nozzle

Edge Nozzles

An edge nozzle (B) can be fitted to the end of the spray boom in order to prevent the last spray nozzle from spraying directly into the ditch. Edge nozzles can therefore contribute to reducing discharge into surface waters. The edge nozzle is fitted 20 cm from the last spray nozzle (A) for effective distribution and a full spraying width. The edge nozzle must be closed while spraying in the field. When spraying along the ditch (or field edge), close the last spray nozzle and open the edge nozzle. Edge nozzles can be fitted on one side (when always driving in the same direction) or on both sides.

Edge nozzles are stainless steel eccentric nozzles of the type TEEJET® AIUB with a spray angle of 85° (available in sizes 025, 03 and 04) or Lechler IS 80° (available in sizes 02, 025, 03, 04, 05 and 06). The size of the edge nozzle (output) must match the output of the normal spray nozzles, of course. When working with an AI-11003 Teejet for example, the AIUB-8503 must be used as an edge nozzle.

There are two versions:

• Manually operated set of edge nozzles

TEEJET is a trademark of Spraying System Co.

B—Edge Nozzle

• Electrically operated set of edge nozzles for revolving nozzle holders

Manually Operated Set of Edge Nozzles



A—Manually Operated Set of Edge Nozzles

On the manually operated set of edge nozzles (A), the edge nozzle is a revolving nozzle to which two bayonet caps are fitted. One bayonet cap (orange) is filled with the edge nozzle, the other bayonet cap (black) has a blind tip. If the edge nozzle needs to be turned on, the last nozzle should be closed. If the machine has revolving nozzle holders, this can be done simply by turning the last nozzle holder to a blind position. On machines with single nozzle holders however, the bayonet cap must be removed and placed (temporarily) on the revolving nozzle holder of the edge nozzle. The black bayonet cap with blind tip can then be placed on the last nozzle holder in order to close it off.

Electrically Operated Set of Edge Nozzles



A—Electrically Operated Set of Edge Nozzles B—Last Spray Nozzle

On electrically operated sets of edge nozzles (A), both the edge nozzle and the last spray nozzle (B) can be closed electrically. This allows for full operation (opening of the edge nozzle and closure of the last spray nozzle or vice versa) from the cab using the GreenStar display.



Section ON/OFF Softkey Layout

- Pressing softkey [D] from the Main Softkey Layout will lead to the Section ON/OFF Softkey Layout.
- When selecting Edge Nozzles Left [D] or Right [I], the required side will have a cone present to indicate that it has been selected and will spray as soon as the master valve has been opened. Pressing the softkey again will deselect the edge nozzle.

WZ00232,0000398-19-06DEC11

Pump Oil Level Sensor



A—Pump oil level sensor

WZ290101351-UN-11NOV12

A—Pump oli level sensor

The mechanical parts of the diaphragm pump are lubricated with oil. A leakage may cause the oil level to drop, and a rupture of a diaphragm may lead to the spraying solution being mixed with oil, thus increasing the level in the reservoir. A pump oil level sensor (A) can be fitted to the pump(s), to warn the operator in these cases. If the pump oil level is not correct, a warning will be given on the GreenStar display, to check the oil level.

WZ00085,0000044-19-19FEB02

Boom Gauging Device



A—Spacer

WZ290101650-UN-070CT03

IMPORTANT: Be careful when reversing with the spacers fitted to the boom. The spacers must not touch the soil when driving backwards as they could be damaged. Spacers (A) can be mounted to the spray boom to prevent it from touching the ground.

WZ00085,000021F-19-08MAY06

Boom Suspension Kit for Slopes



WZ290700209-UN-19OCT10

A—Boom Suspension Kit for Slopes

A boom suspension kit can be provided with the sprayer for working on slopes. The kit is recommended for slopes of more than 5%. It contains two springs (A) which are fitted to the suspension system in addition to the shock absorbers. The springs ensure that the spray boom will follow the slope better, without having to operate the boom tilt correction too much. The boom suspension will be slightly less sensitive, but pendulum action still remains possible. The springs can be fitted or removed according to the field conditions.

The springs are designed for working on hilly fields and therefore should be removed for working on flat fields.

OUCC002,0002F08-19-19OCT10

Boom Height Assist - Return to Height Feature



WZ290102343—UN—07DEC11 Boom Lifts Automatically When Spraying Is Switched OFF At The Headland Turn



Boom Lowers Automatically To The Preset Height When Spraying Is Switched ON Again

Boom height assist will help operators to raise the boom automatically at the headland turn easily to a preset height. Boom height assist value can be set in the GreenStar display for example at 50 cm. When driving towards the headland and the spray master valve is switched OFF the Boom Height assist will automatically raise the boom to the preset value in the example (+ 50 cm) above the actual working height of the spray boom. When the spray master valve is switched ON the boom is set automatically to the previous working height.

WZ00232,000032F-19-07DEC11

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



Sprayer Main Page with John Deere TerrainCommand™ Pro

WZ290401761-UN-30JUL18



John Deere TerrainCommand™ Pro Sensor - Folded Position

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 (Canopy, 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.

John Deere TerrainCommand is a trademark of Deere & Company

A—Sensor

- B—Sensor Hydraulic Positioning and Folding (Triple Folding Boom)
- D-Boom Pendulum Unlocked
- E—John Deere TerrainCommand ™ Pro Softkey [A] Automatic or Manual
- F—Spray Boom Height in cm. Shows whether John Deere TerrainCommand™ Pro is in Automatic or Manual 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 [A]. On the **Sprayer - Main** page the actual boom height above the target can be monitored (F) as 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. See **Spray Boom** in the **Operation of the**

Machine section of this manual for boom folding information.

C-Spray Boom Control Status (Green is Automatic, Red is

F—Spray Boom Height in cm. Shows whether John Deere TerrainCommand[™] Pro is in Automatic or Manual Mode

H—Left Boom Variable Geometry Raise and Lower I—Right Boom Variable Geometry Raise and Lower

E—John Deere TerrainCommand [™] Pro Softkey [A] - Automatic

Manual, & Yellow is Headland Mode)

D-Boom Pendulum - Unlocked

or Manual

G-Boom Raise/Lower

J-Boom Roll Switch



Sprayer Main Page with John Deere TerrainCommand[™] Pro

WZ290401761-UN-30JUL18



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). Press softkey [A] on the display returns boom control to Automatic Mode.





Job Settings 2

WZ290401762-UN-24JUL18

A—Job 2 Tab B—Boom Height [cm]

C—Boom Control Target

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

BoomCtrl Target: (C) select the type of target for the work required, Canopy, Ground, or a Hybrid. Hybrid Mode is an adaptive mode. The mode uses Canopy but when the canopy stops for a distance the Hybrid switches to Ground Mode. The reverse happens in

D—Boom Control Mode E—Boom Control Headland Management System

Hybrid Mode when the canopy returns, Hybrid switches back to Canopy Mode.

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

BoomCtrl Target Modes		
Canopy	Used mainly for dense crop canopy	
Ground	Ideal for pre-emerging spraying applications (bare soil)	
	Post-emerge spraying with small plants	

BoomCtrl Target Modes

Hybrid	Used for spraying a crop with a large variation of density. Hybrid is the most used function out of the three BoomCtrl Target Modes

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 canopy 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 mostly 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 canopy

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 (see BoomCtrl Settings) 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 (see BoomCtrl Settings) 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.
- VG Raise & Control: The boom variable geometry is raised to the BoomCtrl HMS Extra Height (see BoomCtrl Settings) 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 [A] 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.

John Deere TerrainCommand is a trademark of Deere & Company
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.

BoomCtrl Settings





Boom Control Settings

To access **BoomCtrl Settings** screen, select the **BoomCtrl** button (A) on **Boom** tab in **Machine Settings**. See in **Sprayer Control System** section in this manual for more information.

Machine Settings - Boom Control Settings

WZ290401763—UN—24JUL18

A—Boom Control Settings Button

B—Boom Roll Control

C—Boom Roll Control Regulation Factor

D—Boom Height Control Dead Band [cm]

E—Boom Control Headland Management System Extra Height [cm]

See supplied vendor manual for the **John Deere TerrainCommand**[™] **Pro** option for further information.



John Deere TerrainControl[™] Pro - Automatic Boom Height and Roll Control System

Sprayer Main Page with John Deere TerrainControl™ Pro

WZ290401761-UN-30JUL18



John Deere TerrainControl™ Pro Sensor - Folded Position

John Deere TerrainControl[™] Pro is a system which controls the height and roll of the boom to the ground or crop. One or two sensors (A) are placed on each boom. The sensors measure the height of the boom spray nozzles above the target (Canopy, Ground, or a Hybrid). When the slope of the field changes, the boom control system corrects the boom roll 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

John Deere TerrainControl is a trademark of Deere & Company

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 TerrainControl [™] Pro Softkey [A] Automatic or Manual
- F—Spray Boom Height in cm. Shows whether John Deere TerrainControl™ Pro is in Automatic or Manual Mode

control system when the **Automatic Mode** is selected with softkey [A]. On the **Sprayer - Main** page the actual boom height above the target can be monitored (F) as 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 two or four sensors.

A four sensor system automatically reverts to a two sensor when working with a reduced boom working width. See **Spray Boom** in the **Operation of the Machine** section of this manual for boom folding information.



Sprayer Main Page with John Deere TerrainControl™ Pro

WZ290401761-UN-30JUL18



- C—Spray Boom Control Status (Green is Automatic, Red is Manual, & Yellow is Headland Mode)
 D—Boom Pendulum - Unlocked
- E—John Deere TrerrainControl [™] Pro Softkey [A] Automatic or Manual
- F—Spray Boom Height in cm. Shows whether John Deere TerrainControl™ Pro is in Automatic or Manual Mode
- G—Boom Raise/Lower
- H—Boom Roll Switch

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

When the **Boom Raise/Lower** (G) or the **Boom Roll** switch (H) 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). Press softkey [A] on the display returns boom control to Automatic Mode.



Boom Working Mode and Headland Management System

Job Settings 2

WZ290401762-UN-24JUL18

A—Job 2 Tab B—Boom Height [cm] C—Boom Control Target

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

BoomCtrl Target: (C) select the type of target for the work required, Canopy, Ground, or a Hybrid. Hybrid Mode is an adaptive mode. The mode uses Canopy but when the canopy stops for a distance the Hybrid switches to Ground Mode. The reverse happens in Hybrid Mode when the canopy returns, Hybrid switches back to Canopy Mode.

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

BoomCtrl Target Modes				
Canopy	Used mainly for dense crop canopy			
Ground	Ideal for pre-emerging spraying applications (bare soil)			
	Post-emerge spraying with small plants			
Hybrid	Used for spraying a crop with a large variation of density. Hybrid is the most used function out of the three BoomCtrl Target Modes			

BoomCtrl Mode: (D) The drop-down menu gives

D—Boom Control Mode E—Boom Control Headland Management System

access to two different settings how the **John Deere TerrainControl**[™] **Pro** controls and adjusts the spray boom.

• **ROLL**: In this mode, the boom roll is controlled and adjusted.

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

- 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 canopy is closed. Use BoomCtrl Target
 Hybrid Mode with BoomCtrl Mode - Roll and Height as an alternative
- **ROLL + HEIGHT**: In this mode, the boom roll, and the boom height are controlled and adjusted.

NOTE: ROLL + HEIGHT is mostly used for field work with **John Deere TerrainControl**[™] **Pro**.

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 canopy

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

- Off: The automatic boom roll, and boom height control are functional at the headland provided John Deere TerrainControl[™] 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 control will be switched Off. See **BoomCtrl Settings** to change the extra boom height at the headland.
- Raise & Control: The boom is raised at the headland when the master valve is switched Off. The boom roll remains active. When the master valve is switched On again after the headland turn, John Deere TerrainControl[™] Pro becomes active again and adjusts and lowers the boom for spraying.

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 TerrainControl[™] 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 **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 [A] on the display returns boom control to Automatic Mode.

When the master valve is opened after the headland turn, **John Deere TerrainControl™ Pro** adjusts the boom to the correct (set target) height and roll for the terrain.

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.

BoomCtrl Settings



Machine Settings - Boom Control Settings



To access **BoomCtrl Settings** screen, select the **BoomCtrl** button (A) on **Boom** tab in **Machine Settings**. See in **Sprayer Control System** section in this manual for more information.

See supplied vendor manual for the **John Deere TerrainControl**[™] **Pro** option for further information.

WZ00232,0000771-19-24AUG18



A—BoomTrac Sensor

BoomTrac[™] Auto Boom Level & Height Control

 WZ29010206

BoomTrac Sensor

BoomTrac[™] is an automatic boom level & height control system. An ultrasonic sensor (A) on each boom measures the height of the boom above the target. If the slope of the field changes and the boom is not level to the ground or crop, the active boom control system will correct the boom tilt automatically to level the boom and the controller will also adjust boom height if required.

Once the operator has selected the nozzle for his spray application in **Job Settings**, the optimum spray height is automatically set and controlled by BoomTracTM, if the **AUTO** mode is selected with softkey [A]. On the **Sprayer - Main** page of the display the actual boom height above the target can be monitored.





WZ290700087

BoomTrac Working Mode: The drop down menu gives access to four different settings how BoomTrac[™] will control and adjust the spray boom.

- **TILT**: In this mode the boom tilt will be automatically controlled and adjusted by BoomTrac[™]
- **TILT + HEIGHT**: In this mode boom tilt and the boom height will be automatically controlled and adjusted by BoomTrac.

BoomTrac Headland Management: Three different headland management settings to match the field conditions can be selected from the **Job Settings - Job 2** (softkey [G]) in **Boom Headland Management** drop down menu. As soon as the master valve is closed at the headland, BoomTrac automatically switches to one of the following modes:

- Off: In this mode the automatic boom tilt and height control will be switched off when the master valve is switched off at the headland.
- **Raise & Stop**: In this mode the boom will be raised to a higher position at the headland when the master valve is switched off. The boom tilt control will be switched off.

If the value in **BoomTrac Settings** is set to **0**, the boom will not be raised at the headland.

 Raise & Tilt: In this mode the boom will be raised at the headland when the master valve is switched off WZ290700087—19—18NOV16

and the boom tilt remains active. When the master valve is switched on again after the headland turn, BoomTrac will become active again and adjust the boom height to the spray height.

If the value in **BoomTrac Settings** is set to **0**, the boom will not be raised at the headland.

As soon as the master valve is opened after the headland turn, BoomTrac will readjust the boom to its target height. If the boom tilt or height is adjusted manually via the Multi-Function Control lever (MFC) while spraying with BoomTrac (for example with a lodged crop at one side of the boom) the system automatically switches to manual mode. To switch back to automatic mode, select **BoomTrac** softkey [A] in the menu field. A screen will appear: 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. See also **Sprayer Control System** section in this manual for more detailed information on operation, setup and calibration of the BoomTrac system.

IMPORTANT: The working mode "TILT + HEIGHT" should only be used when spraying under the following conditions and crops:

- Pre-emerge spraying applications (bare soil)
- Post-emerge spraying with small plants

BoomTrac is a Trademark from Deere & Company

• Post-emerge spraying of mature plants with a fully closed canopy

It is not recommended to use the working mode "TILT + HEIGHT" under the following conditions:

- Spraying tall, upright crops without complete soil coverage (e.g. cereals, rape seed)
- Spraying plants with large variation of crop density
- Spraying potato plants at early growth stage before the canopy is closed

In those cases, the working mode "TILT" should be used in order to prevent instability of the boom height regulation system.

BoomTrac Settings

General	ettings Boom	Tank	Regul.	
	Section	R 1	\$	
No	zzles per Section	6		
Nozzl	e Spacing [cm]	50		
				123
Nozzle	Out	er N.	BoomTrac	5:25am
Presets	Pre	sets		

WZ290700089



WZ290700089—19—17JUN13

To obtain BoomTrac Settings select the **BoomTrac** button on **Boom** tab in **Machine Settings**. See in **Sprayer Control System** Section in this manual for more detailed information.

WZ00232,0000453-19-25AUG16







Automatic Variable Geometry



WZ290102525 -UN--15NOV16 John Deere TerrainCommand Sensor - Folded Position

A-Sensor

B—Hydraulic Sensor Positioning and Folding -Spray Boom Control Status (Enabled is Green) C. D-Boom Pendulum - Unlocked

softkey [A]. On the **Sprayer - Main** page of the display the actual boom height above the target can be monitored. The Spray Boom Control Status icons (C) indicate when the section is enabled (Green) or disabled (Red). The system uses either three or five sensors. The left and right Spray Boom Control Status icons work with either one or two sensors.

NOTE: The Multi-Function Control (MFC) can toggle the Spray Boom Control Status (C) when the mode is set to AUTO.

John Deere TerrainCommand is a system which controls the attitude of the boom to the ground or crop. One or two ultrasonic sensors (A) are placed on each boom and one close to the Centre Frame (left inner boom). The sensors measure the height of the boom above the target. If the slope of the field changes and the boom is not level to the ground or crop. The active boom control system corrects the boom geometry and height automatically for the correct attitude.

Select the nozzle for the spray application in **Job** Settings, set the spray height in the Boom Height [cm] field in the Job 2 tab. The spray height is used by the control system when the AUTO mode is selected with

When the **Variable Geometry** switch is operated UP, the automatic control of the operated segment is off (red). A short press the switch for DOWN engages the operated segment again (green).

When the **Boom Raise/Lower** or the **Boom Tilt** switch is operated, the automatic control goes to manual mode (all red).



Working Mode and Headland Management System

WZ290700087

NOTE: Both John Deere TerrainCommand and BoomTrac[™] use some of the same inputs for functionality. The following text shows which of the BoomTrac[™] inputs are used for John Deere TerrainCommand.

BoomTrac Working Mode: The drop down menu gives access to four different settings how the **John Deere TerrainCommand** controls and adjusts the spray boom.

- **TILT**: In this mode the boom variable geometry is automatically controlled and adjusted by the control system.
- **TILT + HEIGHT**: In this mode boom variable geometry and the boom height is automatically controlled and adjusted by the control system.
- IMPORTANT: The working mode "TILT + HEIGHT" is recommended for use when spraying under the following conditions and crops:
 - Pre-emerge spraying applications (bare soil)
 - Post-emerge spraying with small plants

- WZ290700087-19-18NOV16
- Post-emerge spraying of mature plants with a fully closed canopy

IMPORTANT: It is recommended to use the working mode "TILT" under the following conditions:

- Spraying tall, upright crops without complete soil coverage (for example cereals, rapeseed)
- Spraying plants with large variation of crop density
- Spraying potato plants at early growth stage before the canopy is closed

Boom Headland Management: Three different headland management settings to match the field conditions can be selected. From the Job Settings -Job 2 (softkey [G]) in the Boom Headland Management drop-down menu. When the master valve is closed at the headland the John Deere TerrainCommand switches to the selected mode of the following modes:

• Off: In this mode the automatic boom variable geometry and height control will be switched Off

BoomTrac is a trademark of Deere & Company

when the master valve is switched Off at the headland.

- Raise & Stop: In this mode the boom will be raised to a higher position at the headland when the master valve is switched Off. The boom variable geometry control will be switched Off.
- NOTE: If the value in **BoomTrac Settings** for **Raise Height at Headland Turn** is set to **0**, the boom does not raise at the headland.
- Raise & Tilt: In this mode the boom will be raised at the headland when the master valve is switched Off and the boom variable Geometry remains active. When the master valve is switched On again after the headland turn, John Deere TerrainCommand becomes active again and adjusts the boom height to the spray height.
- NOTE: If the value in **BoomTrac Settings** for **Raise Height at Headland Turn** is set to **0**, the boom does not raise at the headland.

With **John Deere TerrainCommand** active, if the boom is adjusted manually via the Multi-Function Control (MFC) switches, the system automatically switches to manual mode.

NOTE: The Multi-Function Control (MFC) can toggle the **Spray Boom Control Status** (C) when the mode is set to AUTO.

When the **Variable Geometry** switch is operated UP, the automatic control of the operated segment is off (red). A short press the switch for DOWN engages the operated segment again (green).

When the **Boom Raise/Lower** or the **Boom Tilt** switch is operated, the automatic control goes to manual mode (all red).

When the master valve is opened after the headland turn, **John Deere TerrainCommand** adjusts the boom to set target height. With the **John Deere TerrainCommand** active, if the boom is adjusted manually via the Multi-Function Control (MFC) switches, the system automatically switches to manual mode. To switch back to automatic mode, select **BoomTrac**TM softkey [A] in the menu field. A 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.



BoomTrac[™] Settings

WZ290700089—19—17JUN13

BoomTrac	Settings	To obtain BoomTrac Settings select the BoomTrac
Boom Tilt Control	Automatic 🔶	Sprayer Control System Section in this manual for more detailed information.
Boom Tilt Control Regulation Factor	60	See supplied vendor manual for the John Deere TerrainCommand option for further information.
Boom Height Control Dead Band [cm]	0	NOTE: For the John Deere TerrainCommand option, the field in BoomTrac Settings - Boom Tilt Control
Raise Height at Headland Turn [cm]	0	Regulation Factor is not used (grayed out).
///		
WZ290401700	WZ290401700—19—17NO	V16
BoomTi	rac Settings	
		WZ00232,0000640-19-13DEC16

External Pump Filling (Hydrants) Connection





A—External Pump Filling Connection B—Ball Valve C—Quick Release Connector D—Blind Cap

E—Backflow Protective Device Hydrant Connection

CAUTION: If the tank is filled via a high capacity hydrant it is recommended to open the tank lid in order to avoid "blowing up" the tank. The maximum filling capacity for the external pump filling system is 500 l/min and the maximum pressure allowed is 4 bar. Never exceed this filling capacity and maximum pressure.

For safe and easy filling of the machine via an external pump (hydrant), a special hydrants connection is available to prevent backflow of spraying liquid to the hydrant. A hose (50 mm) can be connected to the left front of the machine (A). There are different couplings available like Kamlock (quick release coupling), Firebrigade and C-coupling (Storz). These couplings are delivered separately (male and female parts with hose barb and hose clamps). The male coupling should be screwed into the 1.5" thread connection (A) on the left front side of the sprayer and the female coupling with hose barb should be connected to the supply hose with the hose clamps.

The liquid then flows via a 1.5" ball valve (B) to the hydrant connection (E) located above the raised filling hole. It has four recesses at the end. During the filling process, the water is sprayed with great force into the tank. In the case of a malfunction (for example a loose hose), air will flow through the four recesses, so that spraying liquid cannot flow back. After the filling process, the overflow piece with hose is fitted near the filling hole on a Kamlock (C). The blind cap (D) with chain must be used to close off the connection.

Before the supply hose is uncoupled, the 1.5" ball valve must be closed in order to prevent any leftover liquid in the hose flowing back.

WZ00232,00004E6-19-03DEC13

Transfer Valve to Pump Liquid Back to Storage Tank (Option)



A—Transfer Valve B—Hose Connection

WZ290102422—UN—28NOV13

The transfer valve with hose connection can be used to pump remaining liquid (e.g. liquid fertilizer) from the solution tank back to a storage tank. There is a 1.5" hose connection (B) available, to which different kinds of couplings can be attached, like Kamlock (quick release coupling), Firebrigde and C-coupling (Storz). These couplings are delivered separately (male and female parts with hose barb and hose clamps). The male coupling should be screwed into the 1.5" thread connection on the left front side of the sprayer and the female coupling with hose barb should be connected to a delivery hose with the hose clamps.

To pump the remaining liquid from the solution tank back to a storage tank, connect the delivery hose to the transfer valve connection and open the transfer valve (A). Open the main shut-off valve and close the boom section valves, agitation and set the circulation valve to **Return to Tank** (where fitted). Let the pump run, so the liquid can be pumped back to the storage tank.

NOTE: The transfer valve should be properly rinsed after use. This can be done by setting the suction valve from the pump to rinse water. If rinse water is purged out via the transfer valve (A), it can be closed. The machine can be rinsed as described in the section **Working with the Machine**.

WZ00232,00004BD-19-27NOV13

Ecomatic Filling System



A—Ecomatic Connection for Suction Side B—Ecomatic Connection for Clean Water C—Valve

The use of larger refillable containers (50 liters) for improved handling of agrochemicals on large farms is increasing. A growing number of chemical products (herbicides, fungicides, insecticides) is available on the market in large refillable containers with a closed chemical filling system (BASF Ecomatic, Bayer Agro Superlink). John Deere has a closed chemical filling kit for the 900 series trailed sprayers to use these closed filling systems.

The kit comprises a connection in the suction side of the pump to transfer the chemical from the container to the solution tank of the sprayer. A rinse connection is available for complete cleaning of the closed transfer filling system with rinse water from the sprayer.

- 1. Connect the hose with the ECOMATIC connection to the chemical container and connect the quick coupler to connection (A).
- 2.Seal the external filling connection with the cap if not in use. This will improve the system suction.
- 3.Set the suction valve of the sprayer pump to "external suction" and the tank/pump selector valve to return flow to the tank.
- 4. Open valve (C) to allow the chemical to flow into the system. If the chemical is not transferred immediately move suction valve towards its closed position (via position "suction of spraying liquid") to increase the vacuum on the container.
- 5. When the required volume is transferred into the sprayer tank, set the suction valve of the sprayer pump to "external suction" and close valve (C).
- 6.Disconnect the hose with the ECOMATIC connection from the chemical container and connect it to connection (B) for rinsing.
- 7.Open valve (C) to allow clean water to flow via the ECOMATIC connection and hose into the tank.
- 8. When the ECOMATIC connection and hose are completely rinsed, disconnect the ECOMATIC

connector from connection (B), close valve (C) and disconnect the quick coupler from connection (A).

WZ00232,00005E4-19-01JUN15

Self Rinsing Pressure Filter

CAUTION: For cleaning and operator safety refer to chemical product information.



-Pressure Filter -Filter Cup C—Valve

WZ290102414-UN-22NOV13

NOTE: See System Rinse in this section for Filter Cleaning.

The pressure filter (A) is important for spraying without blockages, and provides the last central filtering before the liquid is moved to the nozzles.

A 50 mesh filter (red) is fitted as standard. This filter has a mesh width of 280 micron (0.28 mm) and is suitable for flat fan nozzles of the 02 type (or comparable sizes) and larger. A finer 80 mesh filter (blue) can be fitted for smaller nozzles. This filter has a mesh width of 180 micron (0.18 mm). To activate the continuous rinsing process during spraying open valve (C). This enables the liquid to flow into the tank.

The filter must be flushed and cleaned regularly (in any case after each use; see also the safety and rinsing guidelines from the chemical manufacturer). This can be done simply by unscrewing the filter cup (B) and removing the filter element out of the cup. Regular cleaning and opening the valve of the filter will prevent silting up, which could break the filter.

WZ00232,00004E8-19-03DEC13

Wiring Harness for Second Tractor



WZ290101357

WZ290101357—UN—29JAN02

A wiring harness for use of the sprayer with a second tractor is available as option. The kit comprises the same parts used for the first tractor. Please see Fitting Electrical Socket to Tractor in section Preparing the Tractor.

WZ00232,0000395-19-05DEC11

T-Splitter Cables



T-splitter 3-Pole Convenience Outlet - WZ8816143



T-Splitter 3-Pole (ISOBUS) Power Connector - WZ8816142



WZ290101688

WZ290101688–UN–11APR05 T-Splitter 2-Pole Power Connector - WZ8816141



T-Splitter WZ8816144

- A —14-Pole Connector for MFC
- B —Power Connector/Outlet
- C Plugs 4-Pole CAN Bus

The following T-Splitter cables part are available:

 WZ8816141: T-Splitter cable (with 4-pole Deutsch CAN and 2-pole black Power connector)for John Deere 6010 / 7010 / 7020 / 7030 / 8010 / 8020 / 8030 Waterloo Series Tractors with GreenStar[™] ready wiring harness.

- NOTE: Can be also used for all older or competitive tractors retrofitted with Generic GreenStar[™] or Sprayer Harnesses (all 00 and 10 Series)
- WZ8816142: T-Splitter cable (with 4-pole Deutsch CAN and 3-pole black Power connector) for John Deere 6020 / 6030 / 7030 Mannheim Series Tractors with ISO/GreenStar™ ready wiring harness.
- WZ8816143: T-Splitter cable (with 4-pole Deutsch CAN and 3-pole black Convenience Outlet Power connector) for John Deere 7020 / 7030 / 8020 / 8030 Series Tractors with ISO/ GreenStar™ ready wiring harness.
- NOTE: NOTE: The Convenience Outlet Power connector is not compatible with the COBO 12V Power connector.
- WZ8816144: T-Splitter cable (with round 9-pole connector) for John Deere 6030 Premium / 7030 Premium / 6R / 7R / 8R / 9R Series Tractors with ISO/ GreenStar™ ready wiring harness and ISO compliant competitive tractors.
- 1. Connect both 4-pole plugs (C) of the T-splitter to the tractor 4-pole CAN Bus free sockets. If WZ8816144 is used connect the 9-pole connector to the tractor CAN-Bus in-cab connector.
- NOTE: The tractor cab side panel needs be removed to connect both 4-pole plugs (C) of the T-splitter to the 4-pole CAN Bus sockets.
- 2. Connect the power outlet plug (B) to a power outlet available at the 6020 and 6030 series tractors (included in GreenStar[™]-ready wiring harness). For the 7020, 7030, 8020 and 8030 the power outlet plug (B) should be connected to the standard 3-pole power outlet plug inside the cab.
- NOTE: The tractor cab side panel needs be removed to connect the power connector of WZ8816141 and WZ8816142.
- 3. Finally, connect the 14-pole connector (A) to the **MFC**.

Tractor		T-Splitter Cable					
Model	Power Connector	Connector Legend	WZ8816141	WZ8816142	WZ8816143	WZ8816144	
	_			_		-	
6010	2-Pole	D	Yes				
7010	2-Pole	D	Yes				
7020	2-Pole	D	Yes				
7030	2-Pole	D	Yes				
8010	2-Pole	D	Yes				
8020	2-Pole	D	Yes				
8030	2-Pole	D	Yes				
6020	3-Pole ISOBUS	E		Yes			

GreenStar is a trademark of Deere & Company

Tractor				T-Splitter Cable		
Model	Power Connector	Connector Legend	WZ8816141	WZ8816142	WZ8816143	WZ8816144
6030 Premium	3-Pole ISOBUS	E		Yes		
7030 Premium	3-Pole ISOBUS	E		Yes		
7020	3-Pole Convenience Outlet	F			Yes	
7030	3-Pole Convenience Outlet	F			Yes	
8020	3-Pole Convenience Outlet	F			Yes	
8030	3-Pole Convenience Outlet	F			Yes	
	1					
6030 Premium	9-Pole Outlet (Power & CAN)	G				Yes
7030 Premium	9-Pole Outlet (Power & CAN)	G				Yes
6R	9-Pole Outlet (Power & CAN)	G				Yes
7R	9-Pole Outlet (Power & CAN)	G				Yes
8R	9-Pole Outlet (Power & CAN)	G				Yes
9R	9-Pole Outlet (Power & CAN)	G				Yes

T-Splitter Table GreenStar



T-Splitter Power Connectors

WZ290102474-UN-10NOV14

D—2-Pole E—3-Pole ISOBUS

See also Electrical Operation and Install Wiring

Tractor ModelPower ConnectorT-Splitter CableConnector LegendWZ8816141WZ8816142WZ8816143WZ881614460102-Pole DYes70102-Pole DYes70202-Pole DYes70302-Pole DYes80102-Pole DYes80202-Pole DYes80302-Pole DYes60203-Pole ISOBUSEYes6030 Premium3-Pole ISOBUSEYes7030 Premium3-Pole ISOBUSEYes70203-Pole Convenience OutletFYes70303-Pole Convenience OutletFYes80203-Pole Convenience OutletFYes80303-Pole Convenience OutletFYes6030 Premium9-Pole Outlet (Power & CAN)GYes7030 Premium9-Pole Outlet (Power & CAN)GYes8R9-Pole Outlet (Power & CAN)GYes7R9-Pole Outlet (Power & CAN)GYes8R9-Pole Outlet (Power & CAN)GYes9R9-Pole Outlet (Power & CAN)GYES9R9-Pole Outlet (Power & CAN)GYES8R9-Pole Outlet (Power & CAN)GYES9R9-P F—3-Pole Convenience Outlet G—9-Pole Outlet (Power & CAN)

Harnesses on Tractor in section Preparing the Tractor.

WZ00232,0000561-19-10NOV14

High Pressure Cleaner



A—High Pressure Hose Reel B—Hydraulic Motor C—High Pressure Pump D—Oil Fill Plug E—Pressure Regulator and Gauge

CAUTION: Spray from high pressure nozzles can penetrate the skin and cause serious injury. Keep spray from contacting hands or body and use protective clothing, gloves and mask.

IMPORTANT: Protect delicate electrical and electronics on the machine from the high pressure jet. Exercise care when cleaning near decals the jet can damage or remove them.

IMPORTANT: Drain water from the pressure washer for winterization.

The on-board high-pressure washer comprises a highpressure piston pump (100 bar, 15 l/min.) which is hydraulically driven by the tractor. This unit is equipped with a bi-directional hydraulic motor preventing any risk of damage in case hydraulic hoses are not properly connected to the tractor. The high-pressure washer is connected to the rinse water tank (620 Liter) and delivers a powerful jet of water to the spray lance. A hose reel with a 16.5 meter hose allows for the cleaning of all sprayer components. The high-pressure cleaner must be connected with couplers to a tractor selective WZ290102442-UN-03DEC13

F—Transport Lock G—Spray gun H—Handle (Trigger with Lock) I—Transport Clip

control valve. The pressure-free return is equipped with a non-return check valve.

- Red protective cap is pressure
- · Blue protective cap is pressure-free return

To operate the high pressure cleaner there must be enough clean water in the rinse water tank. Switch ON the required tractor selective control valve to activate the pressure cleaners hydraulic drive. The pressure can be adjusted with manual pressure regulator (E). The cleaning pressure must not exceed 100 bar and can be checked at pressure gauge (E). The hose reel (A) is selfretracting. To operate the pressure cleaner open lock (F), lift the spray gun (G) out of the transport position. To operate squeeze the trigger in the handle (H) to clean then machine, adjust spray pattern with the adjustable nozzle at the end of the spry gun.

The oil in the hydraulic motor can be refilled at oil fill plug (D). Oil capacity is 0.4 I. Only use oil that meets specification SAE 30W (15W40) or equivalent. Check the oil level regularly via the indicator gauge. The oil

must be changed after the first 50 hours of operation and then every 500 hours.

WZ00232,00004E9-19-03JAN17

Wheels

Check the wheel nuts after the first 8 hours of operations; see also Track Width Adjustment in section Coupling and Uncoupling of the Sprayer. Tighten the wheel nuts to 480 N·m. Check the wheel nuts regularly.

WZ00232,0000326-19-110CT11

Lubrication - Air Lines / Nozzle Shut-Off, Pump Oil & PTO Shaft

Pneumatic Pressure Lines and Air Nozzle Shut-off



WZ290700231

WZ290700231-UN-04APR11





A—Plug B-Line

WZ290700233-UN-20OCT10

The pressure lines and air nozzle shut-offs must be lubricated with John Deere Super Lube TY25733 14 oz (397 g) spray can at least once per year or every 250 spray hours or every 3000 ha, whichever comes first.

NOTE: Lubrication twice a year is recommended.

On every single section, remove the red plug (A) on the end of the air line then slide out quick exhaust valve line (B) (located between nozzle shut-offs and section valve).

Apply spray oil until oil mist comes out on the other side of the air line at quick exhaust valve line (B).

Pump oil change



WZ290101368-UN--23JAN02

WZ290700074-UN-11JUN10



A-Drain Hose with Plug B-Oil Filling Cap C—Oil Resevoir

The pump oil must be changed at the end of every season or after 200 operating hours. The oil can be drained using the oil drain plug (A). The pump must be at working temperature and be positioned horizontally. and the oil filling cap (B) must be removed to allow air to enter and the oil to drain away more quickly. During drainage, turn the axle manually until the pump is completely empty. Attach the drain plug. In order to allow air to escape during filling, the pump axle must be turned manually. After the oil change, check whether the oil level meets the indication on the oil reservoir (C).

There is sufficient oil in the reservoir when the oil level is between the minimum and maximum marks. If necessary, top up with John Deere Torg-Gard Supreme[™] of SAE 30 viscosity grade oil to the required

Torq-Gard Supreme is a trademark of Deere & Company

level (approx. 2.5 liters). Repeat the level check with the pump in operation. The oil level must be regularly checked and oil refilled as necessary.

PTO shaft

The lubricating nipples and the sliding profile tubes of the PTO shaft must be lubricated regularly with JD MULTILUBER GREASE or John Deere SD POLYUREA GREASE.

WZ00232,0000327-19-02DEC11

Hydraulic Hoses for Boom Height **Adjustment System**

To ensure safe and correct operation, replace the hydraulic hoses for the height adjustment system every 5 years. This should be carried out by an official John Deere Dealer.

WZ00232,0000003-19-08MAY06

Indicating Fuse Ratings **Indicating Fuse Ratings:**

All electrical circuits are protected by fuses. Amperage rating is marked on each fuse plus fuses are color coded to ensure proper replacement.

Fuse Rating	Color
3 Amp	Purple
5 Amp	Brown
10 Amp	Red
15 Amp	Blue
20 Amp	Yellow
25 Amp	Transparent
30 Amp	Green

IMPORTANT: Do not replace original fuse with higher rated fuse or machine damage may occur. If original size fuse will not carry electrical load and continues to blow, have the electrical system checked by your John Deere dealer.

OULXBER,000173A-19-13NOV08





WZ290201485

WZ290201485-UN-07JAN15

WZ290102494—UN—28JAN15



WZ290102494

Fuses:

The fuse box (A) is on the right side of the machine, under the access panel by the Rinse Water Tank.

	Fuse Layout				
Fuse	Rating	Function			
F1	5 amp	Power supply (30 A power supply) for sensors having a supply voltage of 12 V			
F2	5 amp	Power supply (30 A power supply) for EPM base			
F3	5 amp	Power supply (30 A power supply) for EPM for Solution Command System (SCS)			
F4	5 amp	Power supply (30 A power supply) for EPM for TwinFluid™ System (only for 9xxiTF)			
F5	5 amp	Power supply (30 A power supply) for BoomTrac™ (optional)			
F6	5 amp	Electronic power (30 A power supply) for			

Fuse Layout				
Fuse	e Rating Function			
		SRC control unit (ELX and EPM for Solution Command System)		
F11	5 amp	Valve power for the Solution Pump (ground is controlled by control unit) PowrSpray		
F12	5 amp	Power for the Fill Pump (ground is controlled by the control unit) PowrSpray		
F13	5 amp	Valve Power for Variable Geometry and Boom Height Adjustment Hydraulics (ground is switched by control unit)		
F14	10 amp	Power for work lights at the operator's station		
F15	10 amp	Valve Power for Automatic Variable Geometry Control		
F16		Not Used		
F17	15 amp	Section Valve Power for L1, L2, L3, L4 and L5		
F18	15 amp	Section Valve Power for R1, R2, R3, R4 and R5		

	Fuse Layout					
Fuse	Rating	Function				
F19	15 amp	Section Valve Power for C, L6, L7, R6 and R7				
F20	15 amp	Power to Master Valve for a Standard Spray System, where the Master Valve is placed in the front area of the machine.				
		Power to the Master Valve for a Ring Line or Pressure Circulation System, where the Master Valve is placed at the Center-Frame of the machine.				
		Power to the Electric Agitation Valve (option)				
		Power to the Electric Main Fill Valve (AutoFill option)				

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

WZ00232,000057D-19-21MAY15

Identification of Valve Functions on Sprayer



WZ290201448

WZ290201448-UN-110CT11

Maintenance



WZ290102313—UN—18NOV11

Connector number stickers have been attached to the cables to the various magnetic coils to indicate the function in question (see table below).

Electro-Hydraulic Control Valve Functions			
Connector Number	Function		
X173F	Boom up		
X184F	Boom down		
X183F	Tilt left		
X172F	Tilt right		

Electro-Hydraulic Control Valve Functions			
X171F	Pendulum lock ON		
X182F	Pendulum lock OFF		
X170F	Inner boom fold-in solenoid 1		
X181F	Inner boom fold-out solenoid 1		
X169F	Fold tip right in		
X180F	Fold tip right out		
X168F	Fold tip left in		
X179F	Fold tip left out		
X167F	Inner boom fold-in solenoid 2 (3-part boom)		
X178F	Inner boom fold-out solenoid 2 (3-part boom)		
X166F	Variable geometry right up		
X177F	Variable geometry right down		
X165F	Variable geometry left up		
X176F	Variable geometry left down		

NOTE: Use a torque of 42 Nm and lubricate all checkvalves and cartridge valves on the manifold for the spray boom folding. Use Loctite® 270 for spray boom tilt and height functions and torque to 42 Nm.

WZ00232,0000329-19-20APR15

Loctite is a trademark of Henkel Corporation

Machine Lubricating Nipple Summary



WZ290102314

A—Boom Pendulum System Pivot Point B—Parallelogram Height Adjustment C—Transport Lock Height Adjustment D—Height Adjustment Cylinders

For all lubricating nipples use the MULTILUBER GREASE or John Deere SD POLYUREA GREASE including axle suspension frame (F). The axle requires a different grease, lithium soap grease to specification NLGI 2-3 for the various lubrication points. A 400 gram grease cartridge is available with the part number of WZW14090.

CAUTION: Any lubrication maintenance on the Pendulum, Parallelogram and Boom must be carried out with an fully unfolded boom in the lowest height position.

IMPORTANT: Mixing lithium based grease with sodium based grease can cause damage due to incompatibility.

WZ290102314—UN—28NOV11

E—Braked Axle F—Axle Suspension Frame G—Drawbar Tow Eye

Service	Interval		
ltem	10 Hours	50 Hours	
Lubricate boom		YES	
Lubricate center frame	YES		
Lubricate boom lift arm pivots		YES	
Tighten boom assembly		YES	

Boom Servicing Summary Table

Service	Interval				
Steering pivot bearing - upper and lower	40 hours				
Brake camshaft bearings - inner and outer	200 hours				
Slack adjuster	500 hours				
Grease change - wheel hub bearings (check taper roller bearing for wear)	1000 hours				

Service	Interval		
NOTE: For more information on axle mainten	ance refer to the vendor		

Axle Servicing Summary Table

Boom Pendulum System Pivot Point (A)



Grease the lubricating nipples (2) of the pivot points (arrows) of the boom pendulum system regularly.

Parallelogram Height Adjustment (B)



WZ290102316-UN-29NOV11



Clean all the eight pivot points of the parallelogram boom height adjustment regularly and grease the lubricating nipples (arrows) well.

Transport Lock Height Adjustment (C)



WZ290102318-UN-29NOV11

Clean the pin joints (2) on the transport lock mechanism of the parallelogram boom height adjustment regularly and grease the lubricating nipples (arrows) well.

Height Adjustment Cylinders (D)



Clean the pin joints on both the height adjustment cylinders and grease the lubricating nipples (arrows) well. There are nipples on the piston side and on the rod side of the cylinders.

Braked Axle (E)

- IMPORTANT: Take care that the grease does not touch the inside of the brake drum or the brake lining.
- **IMPORTANT:** The axle requires a different grease lithium soap grease to specification NLGI 2-3 for the various lubrication points.



WZ290102320-UN-29NOV11



WZ290102321--UN-29NOV11



WZ290102322

WZ290102322-UN-29NOV11

Lubrication nipples on braked fixed axle

Grease the lubricating nipples of the braked fixed axle and brake lever, using adequate grease.

Lubrication nipples on braked steered axle

Grease the lubricating nipples of the braked steered axle and brake lever, using adequate grease.

A 400 gram grease cartridge is available with the part number of WZW14090.

Axle Suspension Frame (F)

IMPORTANT: Use the MULTILUBER GREASE or John Deere SD POLYUREA GREASE.



Grease the lubricating nipples of the axle suspension frame (1 lubricating nipple per side), using adequate grease.

Drawbar tow eye (G)



For sprayers with a K80 ball coupling must be regularly cleaned and the lubricating nipple (arrow) greased.

WZ00232,000032A-19-19DEC11

Axles **Maintenance Summary**

	Maintenance Procedures	After 50 km	After 200 km	Every 500 km	Every 1000 km		
1.	Wheel Nut Tightness	Yes		Yes			
2.	Check Hubs for Bearing Play - Adjust if Required		Yes				
3.	Brake Linings Check		Yes				
4.	Brake Adjustment and the Slack Adjuster		Yes				
5.	Hub Bearing Inspection for wear, Grease Replacement in Wheel Hub Bearing				Yes		
	For more information refer to manufacturers maintenance instructions						

General Safety

IMPORTANT: For the latest maintenance instructions refer to the manufacture for information, the following information is for general guidance and is not designed to replace the manufacturer's information.

CAUTION: Before the machine is to be lifted, ensure that the lifting equipment is adequate for the machine weight and that the axle is mechanically supported. Wheel chocks must be correctly positioned under the wheels.

CAUTION: Carry out all the checks and maintenance operations described, noncompliance can be detrimental to the working life, functionality and safety procedures of the machine. Avoid lateral shocks and heavy impacts on the axles. Adjust the speed of the machine to the road conditions and the load being transported. Never change the track width to adjust the track width outside the factory settings

CAUTION: Do not exceed the carrying capacity, speed or wheel size indicated on the identification plate or in the vehicle regulations.

Maintenance

CAUTION: Make sure that the machine is kept absolutely immobile during Maintenance Procedures. Position on a level surface, with tractor coupled, engine OFF and the parking brake ON. Chock the sprayer wheels and set the sprayer parking brake ON when ever possible.

NOTE: Always clean parts to be inspected carefully.

Greasing - General information

Use a lithium soap grease to specification NLGI 2-3 for the various lubrication points. A 400 gram grease cartridge is available with the part number of WZW14090. Clean lubrication points prior to greasing.

IMPORTANT: Mixing lithium based grease with sodium based grease can cause damage due to incompatibility.

NOTE: Using excessive grease quantities may lead to damage.

Lubricate points the following:

- Two steering pivot points 4 points.
- Two camshaft housing bushings 4 points, do not apply excessive grease to the points closest to the drums, see page may contaminate the brakes.
- Braking levers 2 points.

• Suspension pivot points – 2 points.

1. Wheel Nut Tightness

Diagonally tighten the wheel fixings, torque to indicated value by the manufacturer of the wheel. The Factory used Torque for M22 is 480 N·m. Do not use lubricants on the stud bolts or on the nuts.

IMPORTANT: Excessive tightening can cause the wheel disc to deform or the stud fasteners to bend or break.

2. Check Hubs for Bearing Play – Adjust if Required Clearance Check

A CAUTION: In addition to the normal maintenance safety caution – ensure that the raised axle is mechanically supported.

Axle hub needs to be free to rotate, sprayer parking brake (if fitted) should be OFF. Place two levers between the tire and the ground, by raising and lowering the levers, verify there is no play in the hub, if play is present perform the clearance adjustment below.

Clearance Adjustment

- Remove hubcap, put it in a safe clean place.
- Remove split pin from castellated nut.
- Tighten the castellated nut until tightening requires considerably more force, to remove play.
- Gently turn the hub once, slightly loosen the castellated nut and tighten again until it is in contact with the surface.
- Align castellated nut for the split pin.
- hub is free to rotate and there is no excessive resistance.
- Insert split pin.
- Refill the bearing cap with grease and reassemble the hubcap.

3. Brake Linings Check

Remove inspection covers (rectangular in shape), examine linings for damage and wear. Replace worn shoes with same type lining, for riveted linings replace when the remaining thickness has reached 5 mm. When new shoes are to be fitted, note the following procedures are also required:

- Examine camshaft for wear replace when necessary.
- Check bearings for wear replace grease.
- Checking bearings clearance adjust when necessary.

4. Brake Adjustment and the Slack Adjuster Slack Adjuster Lever

CAUTION: In addition to the normal maintenance safety caution – ensure that the raised axle is mechanically supported.

- Sprayer parking brake (if fitted) should be OFF
- Operate brake lever, if the travel (free play) is greater than 35 mm (maximum) the brake must be adjusted
- Adjust free play between 18.5 mm to 22.2 mm

Brake Adjustment

Rotate wheel hub and adjust until brake shoes come into contact with the drum, back-off adjustment screw till the hub rotates freely and lock adjustment screw.

If it is not possible to raise the axle, operate the brake lever and adjust to reduce the free movement. After adjustment, verify (pushing it by hand) that the lever's travel not more than 35 mm.

IMPORTANT: Brake shoes must not rub against the drum; hub must be free to rotate. The external connection for the brake lever must be taut, without causing interference on the brake shoes and drum.

5. Hub Bearing Inspection for wear, Grease Replacement in Wheel Hub Bearing

Bearing Inspection

A CAUTION: In addition to the normal maintenance safety caution – ensure that the raised axle is mechanically supported.

- Sprayer parking brake (if fitted) should be OFF.
- Lift the axle until the hub is free to rotate.
- Dismantle the hub and clean it carefully, both internally and externally, removing any residue of old grease.
- Wash the dismantled bearings with a suitable solvent, rotating them slowly, and then dry them.
- Carefully check the surfaces of the rollers and of the hub bearing races, look for any signs of wear, scoring or other signs of damage.
- Replace the bearings on any sign of wear.

IMPORTANT: Bearing replacement must always include both the internal cone and the hub bearing races.

Grease Replacement

Carefully lubricate the bearings with a suitable lithium soap grease to specification NLGI 2-3. It is important to insert the grease inside the bearing, into the space between the cage containing the rollers and the rolling race along which the rollers rotate, in order to guarantee that all moving parts are correctly and completely lubricated. Pack the bearing with grease as described above and lubricate the rear part of the bearing cone. In particular, grease the surface of the rollers base. Apply a thin layer of grease to the rolling race of the hub bearing races.

Check the internal retaining ring shows no sign of wear or damage, replace ring when evidence is detected. Fit the ring into its correct position and lightly grease the sliding surface of the ring.

IMPORTANT: Never mix different grease types, bearing life will be reduced.

- Reassemble the hub, being careful to not damage the rear ring during the procedure. Insert the external bearing, washer (if any) and the castellated nut.
- Tighten the castellated nut, following the procedure described previously for clearance adjustment in the bearings.
- Insert split pin, fill the bearing cap with grease and reassemble the hubcap.

General Axle Inspection

Inspect the axle beam for signs of wear, damage and deformities, any evidence detected an axle replacement is required. Overloaded and/or bent axles must be replaced immediately.

IMPORTANT: Do not under any circumstances repair a bent axle beam or carry out welding repairs.

Inspect the following for signs of wear and damage:

- External camshaft supports
- Brake actuating cylinders supports
- Brake support welds
- Suspension supports and components

A defect in any of the above elements could cause or lead to the possible loss of control of the machine. Verify the correct alignment of the axle with the sprayer frame, incorrect alignment of the axle with the sprayer frame could lead to abnormal wear of the tires and/or possible machine control loss.

IMPORTANT: Failure to carry out periodic inspection of the axle condition and its components could result in a sudden failure of the axle, leading to possible control loss.

WZ00232,000038B-19-19DEC11



Double Folding Spray Boom Lubricating Nipple Summary

WZ290201451

- A—Anti-Yaw System Pivot Points and Dampening Hydraulic Cylinders
- B—Upper Horizontal Pivot of First Boom Segment
- C—Adjustable Upper Connection between Center Frame and First Boom Segment
- D—Boom Folding Cylinders of First Boom Segment, Piston Rod Side
- E—Fixed Rod Connection between Center Frame and First Boom Segment
- F—Boom Folding Cylinders of Second Boom Segment, Piston Side

WZ290201451-UN-30NOV11

- G—Boom Folding Cylinders of Second Boom Segment, Piston Rod Side
- -Upper Pivot between First and Second Boom Segment
- I—Adjustable Top Link between First and Second Boom Segment J—Upper Pivot of Boom Breakaway Segment
- K—Lower Pivot between First and Second Boom Segment L—Folding Mechanism, Second Boom Segment Connection to First Boom Segment
- M—Lower Vertical Pivots of First Boom Segment
- N-Pivots between Connection Rod and First Boom Segment
- O-Lower Horizontal Pivot of First Boom Segment
- P-Boom Folding Cylinders of First Boom Segment, Piston Side

Q—Pivot of Boom Tilt Hydraulic Cylinder Grease lubricating nipples

The lubricating nipples must be lubricated regularly with JD MULTILUBER GREASE or John Deere SD POLYUREA GREASE.

CAUTION: Any lubrication maintenance on the Pendulum, Parallelogram and Boom must be carried out with an fully unfolded boom in the lowest height position.

Anti-yaw system pivot points and dampening hydraulic cylinders (A)



WZ290102325-UN-30NOV11



WZ290102326-UN-30NOV11

Clean the pin joints on the top and bottom of the antiyaw system and the dampening hydraulic cylinders regularly and grease the lubricating nipples (arrow) well.

Upper Horizontal Pivot of First Boom Segment (B)



WZ290102327-UN-30NOV11

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Adjustable Upper Connection between Center Frame and First Boom Segment (C)



WZ290101137-UN-13NOV01 Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of First Boom Segment, Piston Rod Side (D)



WZ290102328—UN—30NOV11

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Fixed Rod Connection between Center Frame and First Boom Segment (E)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of Second Boom Segment, Piston Side (F)



WZ290101144-UN-13NOV01

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of Second Boom Segment, Piston Rod Side (G)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Upper Pivot between First and Second Boom Segment (H)



WZ290101142—UN—13NOV01 Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Adjustable Top Link between First and Second Boom Segment (I)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Upper Pivot of Boom Breakaway Segment (J)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Pivot between First and Second Boom Segment (K)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Folding Mechanism, Second Boom Segment Connection to First Boom Segment (L)



WZ290101146

WZ290101146-UN-13NOV01

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Vertical Pivots of First Boom Segment (M)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Pivots between Connection Rod and First Boom Segment (N)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Horizontal Pivot of First Boom Segment (O)



WZ290101135-UN--13NOV01

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of First Boom Segment, Piston Side (P)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Pivot of Boom Tilt Hydraulic Cylinder (Q)



WZ290101408-UN-10JAN02 Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

WZ00232,0000378-19-01DEC11





WZ290201452

- A—Anti-Yaw System Pivot Points and Dampening Hydraulic Cylinders
- B
- -Upper Horizontal Pivot of First Boom Segment -Adjustable Upper Connection between Center Frame and First Boom Segment C

WZ290201452-UN-01DEC11

- D-Boom Folding Cylinders of First Boom Segment, Piston Rod Side
- E--Fixed Rod Connection between Center Frame and First Boom Segment
- F--Boom Folding Cylinders of Second Boom Segment, Piston Side

- G—Boom Folding Cylinders of Second Boom Segment, Piston Rod Side
- H—Upper Pivot between First and Second Boom Segment
- I—Adjustable Top Link between First and Second Boom Segment
- J—Upper Pivot of Boom Breakaway Segment K—Lower Pivot between First and Second Boom Segment
- L—Folding Mechanism, Second Boom Segment Connection to First Boom Segment
- M—Lower Vertical Pivots of First Boom Segment
- N-Pivots between Connection Rod and First Boom Segment
- O-Lower Horizontal Pivot of First Boom Segment

Grease lubricating nipples

The lubricating nipples must be lubricated regularly with JD MULTILUBER GREASE or John Deere SD POLYUREA GREASE.

CAUTION: Any lubrication maintenance on the Pendulum, Parallelogram and Boom must be carried out with an fully unfolded boom in the lowest height position.

Anti-yaw system pivot points and dampening hydraulic cylinders (A)



WZ290700216

WZ290700216-UN-19OCT10



Clean the pin joints on the top and bottom of the antiyaw system and the dampening hydraulic cylinders (if equipped with) regularly and grease the lubricating nipples (arrow) well.

- P-Boom Folding Cylinders of First Boom Segment, Piston Side
- Q—Boom Folding Cylinders of Third Boom Segment, Piston Side R—Boom Folding Cylinders of Third Boom Segment, Piston Rod
- Side S—Upper Pivot between Second and Third Boom Segment
- S—Upper Pivot between Second and Third Boom Segment T—Adjustable Top Link between Second and Third Boom
- Segment
- U—Lower Pivot between Second and Third Boom Segment V—Folding Mechanism, Third Boom Segment Connection to Second Boom Segment

W—Pivot of Boom Tilt Hydraulic Cylinder

Upper Horizontal Pivot of First Boom Segment (B)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Adjustable Upper Connection between Center Frame and First Boom Segment (C)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of First Boom Segment, Piston Rod Side (D)



WZ290102328—UN—30NOV11

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Fixed Rod Connection between Center Frame and First Boom Segment (E)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of Second Boom Segment, Piston Side (F)



WZ290101395—UN—14FEB02 Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of Second Boom Segment, Piston Rod Side (G)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Upper Pivot between First and Second Boom Segment (H)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Adjustable Top Link between First and Second Boom Segment (I)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.
Upper Pivot of Boom Breakaway Segment (J)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Pivot between First and Second Boom Segment (K)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Folding Mechanism, Second Boom Segment Connection to First Boom Segment (L)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Vertical Pivots of First Boom Segment (M)



WZ290101404—UN—10JAN02

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Pivots between Connection Rod and First Boom Segment (N)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Horizontal Pivot of First Boom Segment (O)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of First Boom Segment, Piston Side (P)



WZ290101133-UN-13NOV01

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of Third Boom Segment, Piston Side (Q)



WZ290101389-UN-10JAN02 Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Boom Folding Cylinders of Third Boom Segment, Piston Rod Side (R)



WZ290101387-UN-10JAN02 Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Upper Pivot between Second and Third Boom Segment (S)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Adjustable Top Link between Second and Third Boom Segment (T)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Lower Pivot between Second and Third Boom Segment (U)



WZ290101386-UN-10JAN02

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Folding Mechanism, Third Boom Segment Connection to Second Boom Segment (V)



WZ290101384—UN—10JAN02

Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

Pivot of Boom Tilt Hydraulic Cylinder (W)



Clean the lubricating nipples (arrow) of the spray boom regularly and grease well.

WZ00232,0000379-19-01DEC11



A—Drain Valve (Air-Pressure Tank)

Cleaning

WZ290102250-UN-06OCT11

- IMPORTANT: If the machine is cleaned with a high pressure system (be careful to avoid paint damage), the lubricating nipples must be greased before and after cleaning. Do not apply a high pressure cleaner to electrical components and first cover them with plastic.
- IMPORTANT: Before cleaning the machine, first check the label, package or safety instructions of the chemical if special rinsing procedures or special cleaning agents are required.

Besides the system cleaning, which must take place after each spray job (Refer to Cleaning the Machine in the section Working with the Machine, Rinse Water Tank, Ring Line Circulation System or Pressure Circulation System in the section entitled Operation of the Machine), there are also components which must be regularly cleaned such as the optional transfer valve (refer to Transfer Valve to Pump Liquid Back to Storage Tank, External Pump Filling Connection or Ecomatic Filling System in the section Accessories).

The pressure line filter must be cleaned at least after every spray job. Very soiled filters lead to increased wear and a reduction of the pump capacity, thus reducing the spraying pressure. Also refer to **Control Group** in the section **Operation of the Machine**.

The suction filter must be cleaned at least after every spray job. Very soiled filters lead to increased wear and a reduction of the pump capacity. Refer to **Suction Unit** in the section **Operation of the Machine**.

After use or long inactivity, clean the machine. Refer to Cleaning the Machine in the section entitled Working with the Machine, Rinse Water Tank, Ring Line Circulation System or Pressure Circulation System in the section entitled Operation of the Machine. Also regularly clean the nozzles, though never with a hard instrument (pocket knife, steel wire, nail or steel brush). There is a great risk of damaging them, after which accurate distribution will no longer be possible. Use a tooth brush or special nozzle brush to clean the nozzles. Also refer to Spray Line and Nozzle Holders in the section Operation of the Machine.

CAUTION: Never clean the nozzles by blowing with your mouth.

In order to prevent corrosion and freezing of the pressure tank of the air brake system, the condensation must be drained from the pressure tank daily by opening the drain valve (A).

Also clean the outside of the crop sprayer on the field, after use (refer to **Rinse Water Tank** in the section entitled **Operation of the Machine** or if available **Hose Reel with Washing Brush and Spray Nozzle** in the section **Accessories**). Keep electrical components dry, by covering with plastic, for example.

WZ00232,000032B-19-22MAY15

Diaphragms

Check the pump diaphragms at the end of each season. Also refer to **Pump** in the section **Operation of the Machine**.

WZ00232,00004F4-19-04DEC13

Malfunctions

Malfunctions in the Pump

IMPORTANT: If malfunctions recur regularly, this may indicate a basic fault in the machine: inform your dealer!

Maintenance of the machine can be carried out by the operator, as well as replacement of simple parts, such as:

- filters
- hoses
- nozzles
- nozzle holder diaphragms

Repair of moving parts such as the pump and electrical valves must always be carried out by an official John Deere dealer.

Symptom	Problem	Solution
The pump has no suction power	One or more valves are not correctly sealed or leaking.	Check the valve seat and clean it.
The pressure gauge shows sudden changes.	The pump sucks in air or is not properly de-aerated.	Check suction lines. Run the pump with closed master valve (by-pass) in order to prime the pump.
The pump outlet is irregular	The accumulator (air chamber) is empty.	Fill the accumulator with sufficient air pressure
The pump gives enough water but not enough pressure.	The seals of the pressure regulator are worn.	Replace seals and possibly also the valve seats.
The pump yield is reduced and the pump is noisier.	The oil level is too low.	Top up the oil.
There is an oil leak.	One or more diaphragms are damaged.	Drain off the oil and dismantle the cylinder head to replace the damaged diaphragms. Replace the oil with SAE 30.

OUCC020,000247F-19-21APR10

Testing of the Machine



A—Test Pressure Gauge Connection

CAUTION: Ensure the machine has been cleaned and rinsed before carrying out the following tests.

Even when the machine is used expertly, there will be some wear and tear, which may have major consequences at an advanced stage. In order to avoid this, the machine should be subjected to an (official) maintenance test once every two years, and any defects must be repaired. Testing can take place at an officially recognized testing station, by an authorized tester.

A test pressure gauge connection (A) with 1/4 in. female thread is mounted on the safety rail of the platform which is on the front of the machine.

Pump Test Connection



VZ290102350

WZ290102350—UN—01FEB12 Pump Test Connection

A—Pump Test Connection

In order to measure the pump capacity, the pressure line from the pump to the primary pressure regulator can be

disconnected on the pump side by loosening the pump locking nut. A flow meter can then be attached with $1\frac{1}{4}$ in. male thread.

Flow Meter Test Connection



Flow Meter Test Connection

A—Flow Meter Test Connection

In order to test the flow meter, disconnect the right side of the flow meter and attach a testing flow meter in series by means of $1 \times G \ 1\frac{1}{2}$ in. Male and $1 \times 1\frac{1}{2}$ in. Female, wing nut with a hose adapter.

WZ00232,00005D3-19-22MAY15

Scrap

If the machine is to be scrapped, the waste processing regulations applicable at the place and time of scrapping must be followed. The machine only includes commonly known materials. Thorough cleaning is essential prior to scrapping in order to avoid damage to the environment and to persons responsible for scrapping work. Extraordinary waste processing facilities may be required for certain materials and they may pose a risk to those persons responsible for scrapping work. This may only be carried out by expert personnel.

AG,WZ00009,139-19-07AUG00

Metric Bolt and Screw Torque Values

TS1742—UN—31MAY18

	Class 4.8Screw zeHex HeadaFlar HeadaN·mIb·inN·m63.631.93.988.676.19.488.676.19.41016.915018.41016.915018.412——14——16——18——20——24——27——30——33——36——19accuracy of 20%, such as a msure these values if a different to r a specific application. nuts, for stainless steel fasteners g instructions for the specific app sure that fastener threads are clip a thin coat of Hy-Gard™ or equ unservative with the amount of oil arly start thread engagement.				Class 8	.8 or 9.8	3		Class	s 10.9		Class 12.9					
Bolt or Screw Size	Hex	-lead ^a	Fla He	nge ad ^b	Hex I	-lead ^a	Fla He	nge ad ^b	Hex I	Head ^a	Fla He	nge ad ^b	Hex I	Head ^a	Flange	Head ^b	
	N∙m	lb∙in	N∙m	lb∙in	N∙m	lb∙in	N∙m	lb∙in	N∙m	lb∙in	N∙m	lb∙in	N∙m	lb∙in	N∙m	lb∙in	
M6	3.6	31.9	3.9	34.5	6.7	59.3	7.3	64.6	9.8	86.7	10.8	95.6	11.5	102	12.6	112	
		•	•				•		N∙m	lb∙ft	N∙m	lb∙ft	N∙m	lb∙ft	N∙m	lb∙ft	
M8	8.6	76.1	9.4	83.2	16.2	143	17.6	156	23.8	17.6	25.9	19.1	27.8	20.5	30.3	22.3	
			N∙m	lb∙ft	N∙m	lb∙ft	N∙m	lb∙ft									
M10	16.9	150	18.4	13.6	31.9	23.5	34.7	25.6	46.8	34.5	51	37.6	55	40.6	60	44.3	
	N∙m	lb∙ft															
M12	—	—	—		55	40.6	61	45	81	59.7	89	65.6	95	70.1	105	77.4	
M14	—	—	—		87	64.2	96	70.8	128	94.4	141	104	150	111	165	122	
M16	—	—	—	_	135	99.6	149	110	198	146	219	162	232	171	257	190	
M18	_	_	_	_	193	142	214	158	275	203	304	224	322	245	356	263	
M20	_	_	_	_	272	201	301	222	387	285	428	316	453	334	501	370	
M22	_	_	—	_	365	263	405	299	520	384	576	425	608	448	674	497	
M24	—	—	—		468	345	518	382	666	491	738	544	780	575	864	637	
M27	—	—	—		683	504	758	559	973	718	1080	797	1139	840	1263	932	
M30	—	—	—		932	687	1029	759	1327	979	1466	1081	1553	1145	1715	1265	
M33	—	—	—		1258	928	1398	1031	1788	1319	1986	1465	2092	1543	2324	1714	
M36	_	_	—		1617	1193	1789	1319	2303	1699	2548	1879	2695	1988	2982	2199	
The nominal torc wrenching accur DO NOT use the given for a speci For lock nuts, for tightening instruct	que valu acy of 2 ese value fic appli r stainle ctions fo	es listed 0%, suc es if a di cation. ss steel r the spe	l are for h as a n ifferent t fastener ecific ap	general nanual t orque va rs, or for plication	use onl orque w alue or t nuts or	y with th rench. ightenin i U-bolts	ne assur g procec s, see th	ned dure is e	Replac higher strengt	e fasten property h of the	ers with class fa original	the sar asteners	ne or hig are use	gher pro ed, tighte	perty cla en these	iss. If to the	
 Make sure that 	at faster	er threa	ds are c	lean.													
 Apply a thin c 	oat of H	y-Gard⊺	™ or equ	uivalent	oil unde	r the he	ad and o	on the th	nreads c	of the fas	stener, a	s showr	n in the	following	g image.		
 Be conservati 	ve with	the amo	unt of o	il to redu	uce the	potentia	l for hyd	raulic lo	ckup in	blind ho	les due	to exces	ssive oil				
 Properly start 	thread	engagen	nent.														

^aHex head column values are valid for ISO 4014 and ISO 4017 hex head, ISO 4162 hex socket head, and ISO 4032 hex nuts. ^bHex flange column values are valid for ASME B18.2.3.9M, ISO 4161, or EN 1665 hex flange products.

DX,TORQ2-19-30MAY18

TS1741-UN-22MAY18

Preparation for Storage

CAUTION: 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. Refer to **Cleaning** in the section **Maintenance**.
- grease the machine. Refer to Lubrication in the section Maintenance.
- protect the machine against frost. Refer to **Protection Against Frost** in this section.
- spray the non-painted machine components with a mixture of diesel and engine oil (1:1). Do not spray this on rubber or plastic parts.

WZ00232,000031E-19-07OCT11

Protection Against Frost

After the machine has been fully cleaned, both inside and out, and has been greased, it must be protected against frost in its winter storage space, unless it is to be stored in a frost free building. Make sure 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. Rotate the pump a few turns by hand. 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. Any electrical shut-off valves must be rendered free of water via the drain plug. Ball valves must be left half open if they are to remain frost free.

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 problems relating to blockages 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: After cleaning the machine thoroughly, add antifreeze to the tank and activate the pump with the boom section valves closed. Also set the circulation valve temporarily to "circulation". Do the same for accessories which have hoses, taps or valves. After brief circulation pumping, open the sectional shut-off valves and close them again as soon as liquid appears out of the nozzles. The spray lines and shut-off valves are now also full of antifreeze. The pump can now be turned off again. After the winter, remember to drain the antifreeze, after which the machine must be flushed well 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 frost period in order that they do not suffer frost damage. The pressure gauge must be stored upright. After all, superfluous water does not automatically drain out.

Once the machine has been removed from its winter storage, we recommend that you check that the pump is not blocked (by ice, for example) before restarting the machine. This can be checked by rotating the pump a few turns by hand.

AG,WZ00009,140-19-18FEB02

Spraying During Frost Periods

If spraying must be done during frosty weather, do so as follows: rotate the pump axle a few turns by hand, in order to check that the pump is not blocked due to ice formation; if this is not the case, the pump can be activated. After the spray job, protect the machine aginst frost again as described.

AG,WZ00009,142-19-07AUG00

First Activation Following Long Inactivity (Storage, Repair, Etc.)

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 may cause development of microorganisms which could be harmful for your health.

CAUTION: The risk of malfunctioning is greater than normal during initial commissioning. Take extra care, therefore.

• 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 tire pressure, play in the wheel bearings and tightening torque (480 N·m) 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.

CAUTION: 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.

AG,WZ00009,143-19-22SEP05

Pump:	
Туре	: AR-280, piston diaphragm pump
Flow rate at 0 bar	: 277 l/min
Flow rate at 20 bar	: 264 I/min
Maximum operating pressure	: 20 bar
Maximum speed	: 540 rpm
Maximum power consumption	: 9.6 kW
2nd Pump:	
Туре	: AR-280, piston diaphragm pump
Flow rate at 0 bar	: 277 l/min
Flow rate at 20 bar	: 264 I/min
Maximum operating pressure	: 20 bar
Maximum speed	: 540 rpm
Maximum power consumption	: 9.6 kW
Fast fill pump (if fitted):	
lype	: HYPRO 9306 Centrifugal pump
Flow rate	: 750 l/min
Iank (for model R944I, R952I, or R962I):	. 4400 5000 6000
Nominal volume (I)	: 4400, 5200 of 6200
Maximum tank volume (I) (greater or equal to values shown)	: 4620, 5460 or 6510
Fill opening diameter	: 400 mm
Clean water tank	: 620 I
Hand wash tank	: 20 I

WZ00232,00003EA-19-22MAY15

Products to be Processed

Only officially accepted crop protection chemicals and/or liquid fertilizers dissolved in pure water may be used with this machine, according to the legal directions.

AG,WZ00009,145-19-07AUG00

Materials Applied

Various materials are applied in trailed crop sprayers. For more information, consult the manufacturer.

AG,WZ00009,146-19-07AUG00

Machine Design Life

This machine is designed and manufactured to provide a long life of productive operation, however actual attainable life depends on a number of factors including the severity of working conditions and completion of recommended maintenance. (See the Service section of this manual.)

Periodically inspect and review the machine in conjunction with your John Deere dealer. The review may result in recommendations for service, component repair, remanufacture or replacement, or, if at the end of life, that the machine be removed from operation. (See separate decommissioning section of this manual for information on disposal and recycling of machine components.)

No machine should be operated if safety-related components are missing or in need of service. All missing or damaged safety-related components, including safety signs, should be repaired or replaced before operating.

DX,MACH,DESIGN,LIFE-19-14SEP15

Dimensions and Weights

Specifications

John Deere Trailed Sprayers	M944 & M944i	M952 & M952i	M962 & M962i
Nominal tank volume (I)	4400	5200	6200
Maximum tank volume (I) (greater or equal to values shown)	4620	5460	6510
Rinse tank (I)		620 I	
Hand wash tank (I)		18	
Standard pump		2 x AR-280	
Spray boom width (fully unfolded) in m			
- double folding boom		24 - 30 m	
- triple folding boom		27 - 40 m	
Track width			
- 180/210 cm, 200 cm, 195/225 cm, fixed axle		Х	
- 180/210 cm, 200 cm, 195/225 cm, steered axle		Х	
Ground clearance below axle (cm)		70 - 90	
Boom height (cm)		50 - 200	

Weights

	M944/ M944i	M952/ M952i	M962/ M962i
Total weight (kg) empty	5360	5370	5390
Maximum total weight (kg) full	10380	11170	12200
Tow eye load, kg	2530	2600	3000

	M944/	M952/	M962/
	M944i	M952i	M962i
Axle load, kg	7850	8570	9200

NOTE: All weights are approximate with base equipment, 40 m boom and filled with water.

Dimensions







WZ290201501 WZ290201501—UN—12DEC16

Base sprayer	Spray boom (max./min. working width)	Total Length A (cm)	Distance: axle to drawbar B (cm)	Distance: rear of machine to axle C (cm)	Distance: axle to top of machine D (cm)	Total Width E (cm)	Distance: axle to front of boom F (cm)	Distance: axle to tow eye G (cm) (See Note below)
M944/M952/M962	24/12 m	759	507	252	271	255	349	36
M944/M952/M962	27/15 m	751	507	244	298	255	496	36
M944/M952/M962	28/14 m	759	507	252	288	255	447	36
M944/M952/M962	30/15 m	759	507	252	298	255	496	36
M944/M952/M962	27/18 m	751	507	244	263	300	316	36
M944/M952/M962	27/21 m	819	507	312	263	300	248	36
M944/M952/M962	28/20 m	770	507	263	263	300	248	36
M944/M952/M962	30/21 m	819	507	312	263	300	248	36
M944/M952/M962	32/21 m	819	507	312	263	300	267	36
M944/M952/M962	33/21 m	819	507	312	263	300	316	36
M944/M952/M962	36/24 m	763	507	256	279	300	374	36
M944/M952/M962	39/27 m	744	507	237	295	300	447	36
M944/M952/M962	40/27 m	744	507	237	295	300	495	36

NOTE: Dimensions depend on tire size and track width.

NOTE: Height G (cm) from axle to tow eye is the factory setting for the machine. A setting of 26 cm, 31 cm and 41 cm can also be made by changing the position of the tow eye support frame. See Coupling and Uncoupling of the Sprayer section in this manual.

Tire	Factory	Michelin	Factory	Factory	Factory	Factory	Factory	Factory
	Choice	Spraybib	Choice	Choice	Choice	Choice	Choice	Choice
	380/90	VF380/90	480/80	520/85	520/85	520/85	620/70	710/70
	R46	R46	R46	R38	R42	R46	R42	R38
	173D	173D	176A/176B	170A8	167A8/167B	173A8/173B	166A8/166B	166A8/166B
Loaded Radius H (cm)	85.3	84.8	89.5	84.2	90.1	94.1	88.2	83.6

WZ00232,00005E5-19-20DEC16

Sound Level

Maximum sound level: 86 dB

The maximum sound level dB(A), measured at the work place is in accordance with ISO 4254-1 and with the standard/measuring method as described in ISO 3744 (average value). The maximum sound level is determined by the driving force (tractor).

WZ00232,0000210-19-30JUL15

Electrical Connection Requirements

Power supply required:

Voltage: min. 12 V, max. 14.4 V

operating during transport/storage

Relative humidity (RH)

operating during transport/storage

There are however limitations regarding the effects of the crop protection chemicals in connection with temperature, wind speed and relative humidity! Try to

operating

Meters above sea level

operating

Number of poles: 9

The machine does not require any other special power supply facilities.

The machine is in compliance with:

- ISOBUS ISO-11783
- Lighting 7-pole connector ISO-1724

WZ00232,000036B-19-13OCT11

Physical Operating Conditions

Ambient temperature

no special limitations · no special limitations : no special limitations no special limitations 1 spray at low wind speeds, high humidity and moderate temperatures. Lighting • ambient lighting no special limitations

AG,WZ00009,150-19-07AUG00

Directives and Standards Applied

The machine is designed to conform to European Directives and Standards, and is supplied with a Declaration of Conformity. The CE mark is displayed on the sprayer.

In addition, the machine complies with:

- NL Decree on crop protection chemicals distribution equipment requirements, Dutch Board of Agriculture (SKL), 03/10/1996.
- EC Declaration of Conformity

Deere & Company Moline, Illinois U.S.A.

The person named below declares that

Machine type: Trailed Crop Sprayer Model: M944, M944i, M952, M952i, M962,& M962i

fulfills all relevant provisions and essential requirements of the following directives:

DIRECTIVE	NUMBER	CERTIFICATION METHOD
Machinery Directive	2006/42/EC	Self-certification
Electromagnetic Compatibility	ISO 14982;2009/64/EC	Self-certification / EMC test
Agricultural machinery - Safety - General requirements.	ISO 4254-1:2013	Self-certification
Tractor and machinery for agricultural and forestry - Technical means for ensuring safety - Equipment for crop protection.	ISO 4254-6:2009	Self-certification
Agricultural machinery - Sprayers and liquid fertilizer distributors - Environmental protection - General.	ISO 16119-1:2013	Self-certification/ENTAM test
Agricultural machinery - Sprayers and liquid fertilizer distributors - Field Crop Sprayers	ISO 16119-2:2013	Self-certification/ENTAM test

Name and address of the person in the European Community authorized to compile the technical construction file:

Brigitte Birk Deere & Company European Office John Deere Strasse 70 Mannheim, Germany D-68163 EUConformity@JohnDeere.com

Place of declaration: Horst Date of declaration: 30 April 2015 Manufacturing unit: John Deere Fabriek Horst BV Name: Marco Driest Title: Manager, Product Engineering

WZ00232,00005E6-19-01JUN15

DXCE01-UN-28APR09

- D Requirements of Sprayers and Atomisers for broadcast applications according to Paragraph 4, Section 2 of the regulations for Protection Chemicals and Crop Protection Equipment (Pflanzenschutzverordnung) from 28th July 1987, Biological Research Institute for Agriculture and Forestry (JKI), Germany.
- UK National Sprayer Testing Scheme (NSTS).

WZ00232,00003EC-19-04NOV12

NZ290600230 ANHÄNGE FELDSPRITZE JOHN DEERE M944 & M944i () M944-24-010 M944-27-001 M944-27-002 M944-27-003 M944-27-004 M944-27-006 M944-27-006 M944-28-001 M944-28-002 M944-24-004 M944-24-005 M944-24-006 M944-24-007 M944-28-003 M944-28-004 M944-24-008 M944-24-009 Ausführung M944-24-001 M944-24-002 M944-24-003 NHOC KOMBINATIONSMATRIX M944-28-006 M944-28-005 **DEERE** Position \overline{a} 22 10 ¢ ω σ m 4 44001 Behälter × ***** $\times \times$ × ***** $\times \times \times$ 2 x A-280 Kolbenmembranpumpen pumpe MFC mit ID1100, GS 1800/2630 Bedien. × **** Drucksensor und Durchflussmes Regel-System 24/12 m / 4 Teilbreiten ×× 24/12 m / 6 Teilbreiten 24/12 m / 8 Teilbreiten × × SERIENAUSRÜSTUNG 24/15 m / 7 Teilbreiten $\times \times$ 24/18 m / 8 Teilbreiten $\times \times$ ×× 27/15 m / 9 Teilbreiten $\times \times$ 27/18 m / 7 Teilbreiten ×× 27/21 m / 9 Teilbreiten 28/14 m / 7 Teilbreiten $\times \times$ 28/14 m / 8 Teilbreiten XX 28/20 m / 7 Teilbreiten $\times \times$ 30/15 m / 9 Teilbreiten 30/21 m / 9 Teilbreiten 32/21 m / 8 Teilbreiten Spritzgeräte für Flächenkulturen 33/21 m / 9 Teilbreiten 33/21 m / 11 Teilbreiten 36/24 m / 9 Teilbreiten 36/24 m / 12 Teilbreiten 39/27 m / 9 Teilbreiten 39/27 m / 13 Teilbreiten 40/27 m / 13 Teilbreiten × × \times ×××××××××××××××××××××××××∞ Spülkopf Kanisterreinigung × ଦ୍ରୁ ndgerat × × ××××××××××××××××××××××× w w Rückpumpsatz ××××××××××××××××××××××× × WAHLAUSRÜSTUNG × ×××××××××××××××××××××× × 6 Feldspritzleitu ×××××××××××××××××××××× \times 22 28/09/2015 Düser

Specifications

Combination Matrix M944 & M944i - Part 1 (For Germany Only)

WZ290600230—UN—29SEP15 WZ00232,000061F-19-28SEP15

33-001 29 33-002 30 33-003 31 33-004 32 36-001 33 36-002 34 36-003 35 36-004 32 36-002 34 36-003 35 38-001 37 39-002 38 39-003 39 39-003 39 39-003 39 39-004 40 40-001 40	33-001 29 33-002 30 33-003 31 33-004 32 36-001 33 36-001 33 36-002 34 36-003 35 36-004 36 36-003 35 36-004 36 39-001 37 39-002 38 39-003 39 39-003 39 39-004 40	33-001 29 33-002 30 33-003 31 33-004 32 36-001 33 36-002 34 36-003 35 36-003 35 36-004 36 36-003 35 36-004 36 36-003 35 36-004 36 39-002 38 39-002 38 39-003 39	333-001 29 333-002 30 333-003 31 333-004 32 333-001 33 336-001 33 386-002 34 386-003 36 386-003 36 386-004 36 386-003 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 36 386-004 37 386-004 38 386-004 36 386-004 36 386-004 36 </th <th>33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-002 34 36-003 35 36-004 32 36-003 35 36-004 36 36-004 36 36-004 36 36-003 35 36-004 36 36-004 36 36-004 36</th> <th>33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-002 34 36-003 35 36-004 32 36-003 35 36-004 36 36-003 35 36-004 36</th> <th>33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-001 33 36-002 34 36-003 35</th> <th>33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-002 34</th> <th>33-001 29 33-002 30 33-003 31 33-004 32 36-001 33</th> <th>33-001 29 33-002 30 33-003 31 33-004 32</th> <th>33-001 29 33-002 30 33-003 31</th> <th>33-001 29 33-002 30</th> <th>33-001 29</th> <th></th> <th>32-002 28</th> <th>32-001 27</th> <th>30-004 26</th> <th>30-003 25</th> <th>30-002 24</th> <th>30-001 23</th> <th>hrung Positic</th> <th></th> <th>SPRITZE</th> <th>NGE</th> <th>DEERE</th>	33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-002 34 36-003 35 36-004 32 36-003 35 36-004 36 36-004 36 36-004 36 36-003 35 36-004 36 36-004 36 36-004 36	33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-002 34 36-003 35 36-004 32 36-003 35 36-004 36 36-003 35 36-004 36	33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-001 33 36-002 34 36-003 35	33-001 29 33-002 30 33-003 31 33-004 32 33-004 32 36-001 33 36-002 34	33-001 29 33-002 30 33-003 31 33-004 32 36-001 33	33-001 29 33-002 30 33-003 31 33-004 32	33-001 29 33-002 30 33-003 31	33-001 29 33-002 30	33-001 29		32-002 28	32-001 27	30-004 26	30-003 25	30-002 24	30-001 23	hrung Positic		SPRITZE	NGE	DEERE
																				ŝ	4400.1	0.1.20	T	
	×	$\frac{2}{2}$	××	XX	××	××	××	××	××	××	××	××	××	XX	XX	××	××	××	××		2 x A-280 Kolbenmembranpumpen	Benaner		5
-		-		-								-	-			-		-				pumpe		
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		MFC mit ID1100, GS 1800/2630	Bedien.	1	5
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		Drucksensor und Durchflussmes.	Regel-		
	_				ļ			ļ													24/42 m (4 Tallershar	System		
╎																					24/12 m / 4 Tellbreiten			
ł	-	-					-	-	-												24/12 m / 8 Teilbreiten	4	S	
t																-					24/15 m / 7 Teilbreiten	1	멼	
I																					24/18 m / 8 Teilbreiten]	m	
ļ	_					ļ		<u> </u>		<u> </u>											27/15 m / 9 Teilbreiten	4	X	
ł																					27/21 m / 9 Teilbreiten	-	S	
ł										-											28/14 m / 7 Teilbreiten	1	진	
ł							-	\vdash	\vdash	-											28/14 m / 8 Teilbreiten		S	
I																					28/20 m / 7 Teilbreiten]	S	
1											ļ							×	×		30/15 m / 9 Teilbreiten		โด	
ļ	_							_		ļ						×	×				30/21 m / 9 Teilbreiten	-		
+	-											×	×	~	<u>~</u>						33/21 m / 9 Teilbreiten			ğ
t		-	-			-		┢──	+	×	×	_									33/21 m / 11 Teilbreiten			R
T								×	×												36/24 m / 9 Teilbreiten	1		ē
_						×	×														36/24 m / 12 Teilbreiten			äte
4				×	\times																39/27 m / 9 Teilbreiten	-		3
+	J	~	×																		40/27 m / 13 Teilbreiten	{		m
ł	$\frac{2}{2}$	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		Digitale Füllstandsanzeige	 	-	äc
	×	×	×	X	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	N	Einspülvorrichtung	4		<u>ne</u>
	×	×	×	×	×	×	×	×	×	×	×	×	×	×	X	×	×	×	×	ω	Spülkopf Kanisterreinigung	1		췯
T	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	4	Transportbox	1		Ē
I	×	×	×	х	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	ς'n	Waschbürste mit Schlauchhaspel]		en l
1	×	×	×	×	×	×	×	×	×	×	\times	×	×	×	×	×	×	×	×	თ	Box für persönlicher Schutzausr.	Se .		
4	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	~1	Hydrantenanschluss 50mm	Idge		
4	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	00	EcoMatic Befüllanschluss	rat		
1	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	0	Ruckpumpsatz	-		
	<u> </u>	Š	Š	Š	X	Ĉ	X	1×	Ě	X	X	X	S	X	C X	X	X	X	×	0	Selbstreinigender Druckniter		5	
4	4	4			ĥ	ĥ	I≏	<u>⊢</u>	ĥ				^	^	^	-	^		<u> </u>				R	
+																				2			토	
+	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	3 14	Ringleitungzirkulationsystem		1C	
1	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	100	Druckumlaufzirkulationsystem		R	
t	-	-		-	-	-		-	f						-					16		1	S	
t	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	17	Variable Geometrie	Felo	2	
t								1	1											18		Ispri	Z	
T	×	×	×	×	×	×	×	×	×	×	×	х	×	×	X	×	×	×	×	19	Merhfachdüsenkörper	12 e	w	
ſ	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	20	Randdüsenkörper, handbed, 1.	tung		
:[×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	27	Randdüsenkörper, elektr. Ventil 1.	ľ		
1					ļ	L		<u> </u>	L											12				
4	×	×	×	×	$ \times$	×	×	×	×	×	×	×	×	×	×	×	×	×	×	13	Abstandshalter	L		
4	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	24	Hachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2.			128
+	×	<u>~</u>	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	25	Injektordusen Al/ID(3)/IDK(1)/IDKN/LDA/ULD 3, 4	g		00
4	×	×	×	×	×	ľ×	×	ř	ř	×	×	×	×	×	×	×	×	×	×	1 ⁶⁶	SUST 1, STUD-LOCHOUSEN TUR AML 5, 6, 7.	sen		12
4											$\left - \right $											1		12
- 1		,	- 1				1	1	1	1	1 1			- 1						1	ŧ	1		

Combination Matrix M944 & M944i - Part 2 (For Germany Only)

Combination Matrix M944 & M944i - Part 3 (For Germany Only)

1952-28-006	M952-28-005	M952-28-004	M952-28-003	M952-28-002	M952-28-001	M952-27-006	M952-27-005	M952-27-004	M952-27-003	M952-27-002	M952-27-001	M952-24-010	M952-24-009	M952-24-008	M952-24-007	M952-24-006	M952-24-005	M952-24-004	M952-24-003	M952-24-002	M952-24-001	Ausführung		JOHN DEER M952 & M95	ANHANGE	
22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	Ċ'n	4	ω	2		Position		≌ m ¦i ∋	ñ	
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		52001	Behälte	r	1
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		2 x A-280 Kolbenmembranpumpen	pumpe		
v	÷	×	V	~	~	V	~	~	-	×	-	~	×	~	×	×	-	÷	-	×	~	-	MEC mit ID1100_GS 1800/2630	Bedien	-	
×	×	×	×	×	×	×	×	×	×	×	×	×	X	×	×	×	×	×	×	×	×		Drucksensor und Durchflussmes.	Regel-	1	
																								System	1	
																				×	×		24/12 m / 4 Teilbreiten	_	7	
-+											-			_		~	÷	×	×				24/12 m / 6 Teilbreiten	4	1 cr	,
					-									×	×	^	ĥ						24/15 m / 7 Teilbreiten		ĬŤ	i
						~~~~						Х	Х					<u> </u>					24/18 m / 8 Teilbreiten	1		i
_										×	×												27/15 m / 9 Teilbreiten		K	-
						~		×	×									ļ	ļ				27/18 m / 7 Teilbreiten	4	S	5
				×	×	~	×																28/14 m / 7 Teilbreiten		2	j
-		×	×	-																			28/14 m / 8 Teilbreiten	-	Ŭ.	i
×	×																						28/20 m / 7 Teilbreiten		S	
_					_				-									L		<u> </u>			30/15 m / 9 Teilbreiten	4	6	5
									-													-	32/21 m / 9 Teilbreiten			
-+									-														33/21 m / 9 Teilbreiten	-		
										1													33/21 m / 11 Teilbreiten	-		
																							36/24 m / 9 Teilbreiten			
																							36/24 m / 12 Teilbreiten	_		
								<u> </u>						_			-		-	-		-	39/27 m / 13 Teilbreiten	-		
																			<u> </u>				40/27 m / 13 Teilbreiten	-		
×	×	×	×	×	×	×	×	×	×	×	×	×	х	х	×	×	×	×	×	×	×		Digitale Füllstandsanzeige			7
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	N	Einspülvorrichtung	_		
×	×	×	×	×	×	×	×	×	×	×	×	×	×	X	×	×	×	×	×	×	×	ω	Spülkopf Kanisterreinigung	_		
č	÷	Š	×	č	×	÷	X	ž	×	X	X	X	( X	X	×	×	×	×	×	×	X	4	I ransportbox			
÷	÷	÷	Ĵ	÷	$\hat{\mathbf{x}}$	÷	ŝ	ŝ	Ê	Ê	÷	$\hat{\mathbf{x}}$	X	ŝ	÷	$\frac{2}{2}$	÷	<del>S</del>	Ê	÷	÷	0	Box für persönlicher Schutzausr	<b>၂</b> ရ		
X	×	×	×	$\frac{1}{2}$	×	×	×	×	×	×	×	X	X	X	×	×	×	×	×	×	×	~	Hydrantenanschluss 50mm	und		
×	×	×	×	×	×	×	×	×	×	×	×	×	×	X	×	×	×	×	×	×	×	00	EcoMatic Befüllanschluss	gerä		
×	×	×	×	×	×	×	×	×	×	×	×	×	х	Х	×	×	×	×	×	×	×	9	Rückpumpsatz	17		
×	×	×	×	Х	×	×	х	×	×	×	×	Х	х	Х	х	×	×	×	×	×	Х	10	Selbstreinigender Druckfilter		-	_
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	3	Füllschlauch mit Schwimmer	_	NA A	;
																						12			긑	-
J	÷	- J	J	J	J	~	-	-	-	-		-	~	-	~	~	-	-	1-	-	-	3	Ringleitungzirkulationsystem		- 6	
Ş	Ĵ	Ş	Ş	÷	Ŷ	$\frac{2}{2}$	$\frac{2}{2}$	Ê	Ê	1 <del>×</del>	Ê	X	$\frac{1}{x}$	3	Ŷ	Ŷ	Ê	Ê	Ê	ŝ	÷	4	Druckumlaufzirkulationsystem	-	19	3
-	-	1		-	-	-	1	i -	f	f	F	^	-	-	-	-	F	<u>ا</u>	ŕ	<u> </u>	ĥ	5 16		-	6	ŝ
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	3	Variable Geometrie	Felo		!
$\neg$								<u> </u>	1	<u> </u>					-			-				100		İspri	NZ N	ġ
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	19	Merhfachdüsenkörper	tzle	16	1
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	20	Randdüsenkörper, handbed. 1.	tung		
×	×	×	×	×	×	×	×	$\times$	×	×	×	×	×	×	×	×	×	×	$\times$	×	×	24	Randdüsenkörper, elektr. Ventil 1.	1		
									L		-											12		_		
×	×	×	×	$\geq$	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	23	Abstandshalter		-	
×	×	×	×	즨	×	÷	×	×	×	×	×	X	X	X	×	X	X	X	×	×	×	24 2	Flachstrahldusen EK/GAT/XK/TT/TJ/TD/2.	-		
÷	~ ~ ~				- <i>s</i> = 1		, <i>X</i>		· ×	· ×	1.8	1	1	~	$\sim$	1	1	1	12	1	1	0	ID BENEDI ULSEIT MITULI JULINI LUNINILLIMUULU 3.4	7.1	1	1
×	Ś	ŝ	Ş	믓	5	÷	~	5	5	5	~	~	~	~	~	×	5	12	~	~	~	N	S 13/7 STC6-Lochdüsen für AHL 5.6.7			

# Combination Matrix M952 & M952i - Part 1 (For Germany Only)

WZ290600233—UN—29SEP15 WZ00232,0000622-19-28SEP15

Specifications

M952-40-002	M952-40-001	M952-39-004	M952-39-003	M952-39-002	M952-39-001	M952-36-004	M952-36-003	M952-36-002	M952-36-001	M952-33-004	M952-33-003	M952-33-002	M952-33-001	M952-32-002	M952-32-001	M952-30-004	M952-30-003	M952-30-002	M952-30-001	Ausführung		JOHN DEE	ANHANGE	JOHN DEE
42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	Position		RE RE		RE
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		5200 I	Behälter	Ī	
×	х	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		2 x A-280 Kolbenmembranpumpen	pumpe		
-	<	~	~	v	~	-	~	Ļ	5	-	~	1 <del>,</del>	-	÷	-	÷	÷	Ļ	~	-	MEC mit ID1100 GS 1800/2630	Bedien	-	
$\frac{2}{2}$	x	$\frac{2}{2}$	x	$\frac{2}{x}$	$\frac{2}{2}$	x	X	x	1 <del>2</del>	×	x	x	x	x	$\frac{2}{x}$	$\frac{1}{2}$	x	1 X	X	-	Drucksensor und Durchflussmes.	Regel	4	
				-	-	-			-	1	-	<u> </u>		-				-	-			System		
_								F													24/12 m / 4 Teilbreiten	<u> </u>	1	
									ļ												24/12 m / 6 Teilbreiten			
						ļ	ļ	ļ				ļ	<u> </u>						ļ		24/12 m / 8 Teilbreiten		1 S M	
																					24/15 m / / Tellbreiten	1	盗	
-					-	-		┢		+	┝	-	-	-	-						27/15 m / 9 Teilbreiten	1	1Z	
-							<u> </u>	$\uparrow$	1	1	t	†		<u> </u>						-	27/18 m / 7 Teilbreiten		B	
																					27/21 m / 9 Teilbreiten		S S S	
																					28/14 m / 7 Teilbreiten		ĨĈ	
								<b> </b>		<b> </b>		ļ					ļ	ļ		ļ	28/14 m / 8 Teilbreiten	4	14	
_							-		-			$\vdash$						-	-		28/20 m / / Teilbreiten	-	S	
-								–	–							×	1	<u> </u>	r		30/21 m / 9 Teilbreiten		G	
-								<u> </u>	+					×	×	Ê	<u> </u>				32/21 m / 8 Teilbreiten	1		G
					-		$\vdash$	1	1			×	×	-					-	-	33/21 m / 9 Teilbreiten			pr
										×	×										33/21 m / 11 Teilbreiten	]		67
_						ļ		×	×	[											36/24 m / 9 Teilbreiten			en
						×	×		<u> </u>		L	ļ					ļ	L	-		36/24 m / 12 Teilbreiten	-		ite
_			-	×	×			–				_						ļ			39/27 m / 9 Tellbreiten	-		đ
~	×	^	Ê		-	+	┝	┢	$\vdash$	-		┼──	$\vdash$	-				┝	-	⊢	40/27 m / 13 Teilbreiten	-		m
×	X	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	1	Digitale Füllstandsanzeige			äc
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	N	Einspülvorrichtung			De
×	X	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	ω	Spülkopf Kanisterreinigung			
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	4	Transportbox			Ē
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	υn	Waschbürste mit Schlauchhaspel	1		ē
×	х	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	o	Box für persönlicher Schutzausr.	Gr		
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	1	Hydrantenanschluss 50mm	Dop		
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	8	EcoMatic Befüllanschluss	erät		
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	9	Rückpumpsatz			
×	×	×	×	×	×	$\times$	×	$\times$	×	$\times$	×	$\times$	$\times$	×	×	×	×	$\times$	×	5	Selbstreinigender Druckfilter		1	
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×		Füllschlauch mit Schwimmer	4	A	
_					L	ļ	-	_	ļ	ļ	ļ	<u> </u>					ļ		ļ	N		4	두	
_						<u> </u>					-	-								ω	Minet Manager Manager		18	
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	4	Ringleitungzirkulationsystem	ł	1 Sh	
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	ľ~	(m	Druckumiaurzirkulationsystem		ĨĈ	
					-	-	-		-		-		-	-	-	-	-		-	6 1	Variable Coometrie	n o	14	
2	-	^	<u> </u>	$\hat{}$	l^	ĥ	ĥ	l-	ĥ	12	ĥ	l^	l^	ĥ	^	<u> </u>	ĥ	ĥ	l^	7 1	Valiable Geometrie	ldsp	Z	
_	-	0	~	-	-		-	10	te	-	5	5	5	-	5	-	-	5		00	Marhfachdücankörner	Xitz	G	
	Ŷ	Ŷ	Ĵ	ŝ	1 <del>,</del>	Ê	1 <del>,</del>	Ê	Ê	Ê	1 <del>,</del>	Ê	Ê	Ê	Ŷ	÷	Ê	Ê	1 <del>,</del>	9 21	Randdűsenkörper handbed 1	eitu		
	X	x	2	<del>S</del>	Ê	Ê	Ê	Ê	ţÇ	Ê	Ê	1 <del>2</del>	Ê	F	1 X	F	1 <del>,</del>	E	Ê	02	Randdüsenkörper elektr Ventil 1	<u>õ</u> u		
-	-		F-	-	F	F	ŕ	f	f	f	f	f	f^	F	<u>م</u>	ŕ	۴ ^۵	r^	<u>ا</u>	1	Contraction and the second	1		
~	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	222	Abstandshalter	1		
×	×	×	×	×	×	×	×	×	×	×	×	x	×	×	×	×	×	×	×	3 24	Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2		1	N
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	1 25	Injektordűsen Al/ID(3)/IDK(T)/IDKN/LDA/ULD 3.4			1/8
×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	26	SJ3 / 7, STC6 -Lochdüsen für AHL 5, 6, 7.	Düs		/90
								<b> </b>												É		ien i		2016
- 1					1		1						1				,			1		i i		1

# Combination Matrix M952 & M952i - Part 2 (For Germany Only)

WZ290600234

WZ290600234—UN—29SEP15 WZ00232,0000623-19-28SEP15

Düsen für Pflanzenschutzmittel und/oder f	"lüssigdünger:			
1. Exzentrische Flachstrahldüse (Off-center)	Typ: AIUB	Größe: 025, 03, 04	Hersteller: Spraying Systems Co. / TeeJet	Material: V2A
	Typ: IS-80°	Größe: 02, 025, 03, 04, 05, 06	Hersteller: Lechler	Material: Kunststoff
2. Mehrbereichsflachstrahldüse	Typ: ER 110°	Größe: 02, 03, 04, 05, 06, 08	Hersteller: John Deere	Material: Kunststoff Polyacetal
	Typ: GAT 110°	Größe: 02, 025, 03, 04, 05, 06, 08	Hersteller: John Deere	Material: Kunststoff Polyacetal
	Typ: XR-110°	Größe: 02, 03, 04, 05, 06, 08	Hersteller: Spraying Systems Co. / TeeJet	Material: Kunststoff, Keramik, V2A
	Typ: TT-110°	Größe: 02, 025, 03, 04, 05, 06, 08	Hersteller: Spraying Systems Co. / TeeJet	Material: Kunststoff (POM)
	Typ: TTJ60-110	° Größe: 02, 025, 03, 04, 05, 06	Hersteller: Spraying Systems Co. / TeeJet	Material: Kunststoff (POM)
	Typ: TD-110°	Größe: 02, 03, 04	Hersteller: Agrotop	Material: Keramik (POM)
<ol><li>Injektordüse</li></ol>	Typ: Al-110°	Größe: 015, 02, 025, 03, 04, 05, 06	Hersteller: Spraying Systems Co. / TeeJet	Material: V2A
	Typ: ID-120°	Größe: 015, 02, 025, 03, 04, 05, 06, 08	Hersteller: Lechler	Material: Kunststoff, Keramik
	Typ: LDA 110°	Größe: 015, 02, 025, 03, 04, 05	Hersteller: John Deere	Material: Kunststoff Polyacetal
	Typ: IDN-120°	Größe: 025, 03	Hersteller: Lechler	Material: Kunststoff (POM)
<ol><li>Injektordüse Kompakt</li></ol>	Typ: IDK-120°	Größe: 015, 02, 025, 03, 04, 05	Hersteller: Lechler	Material: Kunststoff (POM)
	Typ: IDKN-120°	Größe: 04	Hersteller: Lechler	Material: Kunststoff (POM)
	Typ: IDKT-120°	Größe: 03, 04, 05	Hersteller: Lechler	Material: Kunststoff (POM)
	Typ: ULD 120°	Größe: 015, 02, 025, 03, 04, 05	Hersteller: John Deere	Material: Kunststoff Polyacetal
Düsen für Flüssigdünger:				
<ol><li>3-Lochdüse, einteilig</li></ol>	Typ: SJ3	Größe: 015, 02, 03, 04, 05, 06, 08, 10, 15	Hersteller: Spraying Systems Co. / TeeJet	Material: V2A (Dosierblende)
<ol><li>7-Lochdüse, einteilig</li></ol>	Typ: SJ7	Größe: 015, 02, 03, 04, 05, 06, 08, 10	Hersteller: Spraying Systems Co. / TeeJet	Materiał: V2A (Dosierblende)
7. 6-Lochdüse, einteilig	Typ: STC6	Größe: 015, 02, 03, 04, 05, 06, 08, 10, 15	Hersteller: John Deere	Material: Kunststoff Polyacetal
WZ290600232				

# Combination Matrix M952 & M952i - Part 3 (For Germany Only)

X × X × X × X × X × X × X × X × X × X ×	M962-27-006         16         X         X           M962-28-001         17         X         X           M962-28-002         18         X         X           M962-28-003         19         X         X           M962-28-003         19         X         X           M962-28-004         20         X         X           M962-28-005         21         X         X	M962-27-006         16         X         X           M962-28-001         17         X         X           M962-28-002         18         X         X           M962-28-003         19         X         X           M962-28-003         19         X         X           M962-28-003         19         X         X           M962-28-004         20         X         X	M962-27-006         16         X         X           M962-28-001         17         X         X           M962-28-002         18         X         X           M962-28-002         18         X         X           M962-28-003         19         X         X	M962-27-006         16         X         X           M962-28-001         17         X         X           M962-28-002         18         X         X	M962-27-006 16 X X	M962-27-006 16 X X		M962-27-005 15 X X	M962-27-004 14 X X	M962-27-003 13 X X	M962-27-002 12 X X	M962-27-001 11 X X	M962-24-010 10 X X	M962-24-009 9 X X	M962-24-008 8 X X .	M962-24-007 7 X X	M962-24-006 6 X X .	M962-24-005 5 X X	M962-24-004 4 X X	M962-24-003 3 X X	M962-24-002 2 X X	M962-24-001 1 X X	Ausführung Position	6200 1 2 x A-280 Kolbenmembranpumpen	JOHN DEERE Behälter pumpe	ANHÄNGE	JOHN DEERE
Normalization         System         System           System         System         System         System           System         XX         24/12 m / 4 Teilbreiten         System           XX         XX         24/12 m / 4 Teilbreiten         System           XX         24/12 m / 6 Teilbreiten         System         System           XX         24/12 m / 6 Teilbreiten         System         System           XX         24/12 m / 6 Teilbreiten         System         System           XX         24/12 m / 7 Teilbreiten         System         System           XX         24/12 m / 7 Teilbreiten         System         System           XX         1         27/16 m / 7 Teilbreiten         System           XX         1         1         System         System           XX         1         1         1         1         System           XX         1         1         1         1         System           XX         1	XX	××		××	××	××	××	××	××	$\frac{\times}{\times}$	××	××	XX	××	××	××	××	××	××	××	××	××		MFC mit ID1100, GS 1800/2630 Drucksensor und Durchflussmes	Bedien.	-	5
Image: Second											x         x	×						×		×				24/12 m / 4 Teilbreiten 24/12 m / 6 Teilbreiten 24/12 m / 6 Teilbreiten 24/15 m / 7 Teilbreiten 24/18 m / 8 Teilbreiten 27/15 m / 9 Teilbreiten	System	SERIENA	
X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X         X	L								×	×														27/18 m / 7 Teilbreiten		1C	
X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X	┝		-		×	×	×	×	$\vdash$							-		-			<u> </u>		-	28/14 m / 7 Teilbreiten			
x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x	t		×	×																				28/14 m / 8 Teilbreiten		10	
Image: Second	Ŀ	×																						28/20 m / 7 Teilbreiten		Ş	
Optigeräte         Fillspelten           Image: Signal S																								30/15 m / 9 Teilbreiten		ົດ	
Image: Non-Section 1         Image: No	$\frac{1}{2}$								-											-				32/21 m / 8 Teilbreiten			w
Image: Section of the sectio			+																-					33/21 m / 9 Teilbreiten			pri
Image: Second	Ţ																							33/21 m / 11 Teilbreiten			021
Image: Solution of the second secon	ļ									ļ									ļ					36/24 m / 9 Teilbreiten			era
Image: Section of the sectin of the section of the																								39/27 m / 9 Teilbreiten			ē
Image: Section of the section of th										$\vdash$								-	-	-				39/27 m / 13 Teilbreiten			ŝ
K       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X	t																							40/27 m / 13 Teilbreiten			금
x × × × × × × × × × × × × × × × × × × ×	1	×	×	×	Х	×	×	×	×	×	×	×	Х	×	×	×	×	×	×	×	×	×		Digitale Füllstandsanzeige			ich
X X X X X X X X X X X X X X X X X X X	;	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	2	Einspülvorrichtung			en l
XX       XX <td< td=""><td>Ľ</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>X</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>ω</td><td>Spulkopt Kanisterreinigung</td><td></td><td></td><td>Ê</td></td<>	Ľ	×	×	×	×	×	×	×	×	×	×	×	X	×	×	×	×	×	×	×	×	×	ω	Spulkopt Kanisterreinigung			Ê
		÷	Ĉ	×	X	×	× v	ŝ	×	Ĉ	X	Š	× v	×	ŝ	× v	X	Ĉ	Ĉ	Š	Ĉ	Ĉ	44	Maschhürste mit Schlauchhaspel			ure
X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X	t	$\frac{2}{x}$	Î	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{2}{x}$	$\frac{2}{2}$	$\frac{2}{2}$	Ŷ	<del>2</del>	$\frac{2}{x}$	$\frac{1}{2}$	X	x	$\frac{2}{x}$	$\frac{2}{x}$	$\frac{2}{2}$	Î	ŝ	$\frac{2}{x}$	Ŷ	$\frac{2}{2}$	6	Box für persönlicher Schutzausr	ଦ୍ର		3
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	t	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	1	Hydrantenanschluss 50mm	undg		
X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X	t	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	~	EcoMatic Befüllanschluss	lerat		
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	t	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	9	Rückpumpsatz			
X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X	I	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	10	Selbstreinigender Druckfilter		-	
Image: Section of the section of th	1	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	11	Füllschlauch mit Schwimmer		A	
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	Ļ									ļ								ļ					12			干	
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	Ļ		-		<u> </u>	L			-	<u> </u>								-	<u> </u>	-	-	L	1	Dissleit un agrielu detien euroteren		P	
² · · · · · · · · · · · · · · · · · · ·	ł	× U	×	×	X	X	X	×	×	×	X	X	×	×	×	X	X	×	×	X	X	×	4	nungierungzirkulationsystem		1SR	
X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X	ł	_	ŕ	<b>É</b>	ŕ	~	ŕ	ŕ	ŕ	ŕ	ŕ			ŕ	^	ŕ		ŕ	ŕ	ŕ	ŕ	r -	5	Lordokarniaaiziikaiaaonsystem		10	
Solution       Solution <td< td=""><td>5</td><td>&lt;</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>X</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>×</td><td>6 17</td><td>Variable Geometrie</td><td>Feld</td><td>JT</td><td></td></td<>	5	<	×	×	×	×	×	×	×	×	×	×	X	×	×	×	×	×	×	×	×	×	6 17	Variable Geometrie	Feld	JT	
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	t																						5		sprit	1ZO	
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	3	<	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	19	Merhfachdüsenkörper	Izlei		
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	Ŀ	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	20	Randdüsenkörper, handbed. 1.	tung		
x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x       x	Ļ	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	21 2	Randdüsenkörper, elektr. Ventil 1.			
X × X × X × X × X × X × X × X × X × X ×	ŀ	~	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	22	Abstandshalter			
×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×         ×	t	$\frac{2}{\times}$	Ê	X	X	1 X	1 X	$\frac{2}{\times}$	x	1 X	X	×	X	X	$\frac{2}{2}$	X	X	1 <del>2</del>	1 X	1 <del>x</del>	1 ×	X	3 24	Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2		1	
x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x         x	ł	×	×	×	X	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	125	Injektordüsen Al/ID(3)/IDK(T)/IDKN/LDA/ULD 3.4.	_		8/0
		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	26	SJ3 / 7, STC6 -Lochdüsen für AHL 5, 6, 7.	Jüse		2/6(
																									э		015

# Combination Matrix M962 & M962i - Part 1 (For Germany Only)

WZ290600235—UN—29SEP15 WZ00232,0000625-19-29SEP15

ANHÄNGE FELDSPRIT JOHN DEER M962 & M9	62i (II)	Behälter	pumpe	Bedien.	Regel-	System			w	0		□ □	×		S S		IS	2	Ż	ົດ						iii				ā	2						a'	b			1 1			WA	WAHL						Feldsg	Feldspriz	Feldspritzleit	Feldspitzleitung	VVAHLAUSRÜSTUNG Feldspritzleitung	VAHLAUSRÜSTUNG	WAHLAUSRÜSTUNG	Feldsprizzleitung	Feldspritzleitung	Feldspritzleitung	Feldspritzleitung           //TTJ/TD 2.           ⟨N/LDA/ULD 3, 4.           UI:5, 6, 7.	Feldspritzleitung           //TTJ/TD 2.           (N/LDA/ULD 3, 4.)           L 5, 6, 7.
		62001		MFC mit ID1100, GS 1800/2630	Drucksensor und Durchflussmes.		24/12 m / 4 Teilbreiten	24/12 m / 6 Teilbreiten	24/12 m / 8 Teilbreiten	24/15 m / 7 Teilbreiten	24/18 m / 8 Teilbreiten		21/10 m/9 Tellbreiten	27/18 m / 7 Teilbreiten	27/21 m / 9 Teilbreiten	28/14 m / 7 Teilbreiten	28/14 m / 8 Teilbreiten	28/20 m / 7 Teilbreiten	20/16 m ( 0 Tailbraitan		30/21 m / 9 Telibreiten	32/21 m / 8 Teilbreiten	33/21 m / 9 Teilbreiten	33/21 m / 11 Teilbreiten	36/24 m / 9 Teilbreiten	36/24 m / 12 Teilbreiten	20/07 m / 0 Talbrahan	100/07 / 40 7 W N	39/27 m / 13 Tellbreiten	40/27 m / 13 Teilbreiten	Digitale Füllstandsanzeige	Einspülvorrichtung	Spülkopf Kanisterreinigung	Transporthau	Hansportbox	1107 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Waschbürste mit Schlauchhaspel	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rücknumpsatz	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed. 1.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed, 1. Randdüsenkörper, elektr. Ventil 1.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed. 1. Randdüsenkörper, elektr. Ventil 1.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Werhfachdüsenkörper Randdüsenkörper, handbed. 1. Randdüsenkörper, elektr. Ventil 1.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed, 1. Randdüsenkörper, elektr. Ventil 1. Abstandshalter Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed. 1. Randdüsenkörper, handbed. 1. Randdüsenkörper, elektr. Ventil 1. Abstandshalter Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2. Injektordüsen AI/ID(3)/IDK(T)/IDKN/LDA/ULD	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Ringleitungzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed. 1. Randdüsenkörper, handbed. 1. Randdüsenkörper, elektr. Ventil 1. Abstandshalter Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2. Injektordüsen AI/ID(3)/IDK(T)/IDKN/LDA/ULD SJ3 / 7, STC6 -Lochdüsen für AHL 5, 6, 7.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoMatic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Druckumlaufzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed. 1. Randdüsenkörper, elektr. Ventil 1. Abstandshalter Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2. Injektordüsen Al/ID(3)/IDK(T)/IDKN/LDA/ULD SJ3 / 7, STC6 -Lochdüsen für AHL 5, 6, 7.	Waschbürste mit Schlauchhaspel Box für persönlicher Schutzausr. Hydrantenanschluss 50mm EcoM atic Befüllanschluss Rückpumpsatz Selbstreinigender Druckfilter Füllschlauch mit Schwimmer Druckumlaufzirkulationsystem Druckumlaufzirkulationsystem Variable Geometrie Merhfachdüsenkörper Randdüsenkörper, handbed. 1. Randdüsenkörper, elektr. Ventil 1. Randdüsenkörper, elektr. Ventil 1. Randdüsenkörper, elektr. Ventil 1. Abstandshalter Flachstrahldüsen ER/GAT/XR/TT/TTJ/TD 2. Injektordüsen Al/ID(3)/IDK(T)/IDKN/LDA/ULD SJ3 / 7, STC6 -Lochdüsen für AHL 5, 6, 7.
Ausführung	Position		┝╍┼							t			ļļ			T	1-1		++								<u> </u>			Ŀ		N			1424	<u>+</u>  ,	5	56	5 6 7	5 6 7 8	5 6 7 8 9	5 6 7 8 9 1	5 6 7 8 9 10	5 6 7 8 9 10 11	5 6 7 8 9 10 11 12	5 6 7 8 9 10 11 12 13	5 6 7 8 9 10 11 12 13 14	5 6 7 8 9 10 11 12 13 14 15	5 6 7 8 9 10 11 12 13 14 15 10	5 6 7 8 9 10 11 12 13 14 15 16 1	5 6 7 8 9 10 11 12 13 14 15 16 17 1	5 6 7 8 9 10 11 12 13 14 15 16 17 18 1	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 2	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 2	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
M962-30-001	23	×		×	$\times$			1	1	+	+	+			1	1	+	+		1	-					+	+		1		$\times$	×	10	100	~	×	XX	XXX	XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXXX	XXXXXXXXX	X X X X X X X X	X X X X X X X X	X X X X X X X X X	x x x x x x x x x x x	x x x x x x x x x x x x	x x x x x x x x x x x x x	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X
M962-30-003	25	×		×	×		T			-+	-+-				T	-	+		-	-	<u>×</u>					-+-					×	×	1		-	×	× : × :	× : × : × :	× : × : × : × :	X X X X X	XXXXXX	XXXXXXX																				
M962-30-004	26	×	4	×	×		T			-+	-+				T		-		+		$\times$		1								×	×	1		러	×	××	x x x	( X X X X	( X X X X X	( X X X X X X														(			( X X X X X X X X X X X X X X X X X X X	( X X X X X X X X X X X X X X X X X X X	( X X X X X X X X X X X X X X X X X X X	( X X X X X X X X X X X X X X X X X X X	
M962-32-001	27	×	ŕ	×	×					1	+		ļ									$\times$						<b> </b>		1	×	×	5		1	×	××	XXX	XXXX	XXXXX	XXXXXXX	XXXXXXX	XXXXXXXX	XXXXXXXXX					X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	
M962-32-002	28	< ×		< ×	¥×	1		T	1	+	+-	+					1	+	+		1	×	(		1	+	+	+	-	1		: >			10		× × ×	× × × ×																								
M962-33-001	30	×>	7	$\times$	× >										T			-+-	+				$\times$								$\times$	×>	1		36	×>	×> ×>	~ × × × ×	(	(								(														
M962-33-003	31	×	$\hat{}$	×	×																			×							×	×	-		0	×	^ × ×	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	^ X X X X	<pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre>	<	<pre>&lt; x x x x x x x</pre>					<pre>&lt; x x x x x x x x x x</pre>	<pre>&lt; x x x x x x x x x x x x</pre>		<pre>&lt; x x x x x x x x x x x x x</pre>								<pre></pre>	<pre></pre>	<pre></pre>	<pre>( X X X X X X X X X X X X X X X X X X X</pre>	<pre>( X X X X X X X X X X X X X X X X X X X</pre>
M962-33-004	32	×	1×	$\times$	$\times$			T	1	+	+	+				1	1	+	+					×	:	·				1	×		10		÷	×		x x x x																								
M962-36-001	33	< ×		< ×	۲×			T	1	+	+					1	1	+	+	+	4_			1					1		×		1	1 ×			: × : × : ×	« × « × « ×	x	X	X X X X X X X X		XXXXXXXXX	XXXXXXXXXXX																		
M962-36-003	35 4	××	<u> </u>	××	× ×														+		-				×	<del>ct'</del>	<u>-</u>  -				$\times$	××		$\times 1 \times$		×× ××	X X X X X X	X X X X X	XXXXXX	XXXXXXX	X X X X X X X X X X X X X X X X X X X	X	XXXXXXXXXXX	<u> </u>	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X		X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X
M962-36-004	36	×		×	$\times$					-+																					$ \times $	×		×	×	ХХ	ххх	XXXX	XXXXX	XXXXXXX	XXXXXXXX	XXXXXXXXX	XXXXXXXXX	XXXXXXXXXXX	X X X X X X X X X X	XXXXXXXXXX	XXXXXXXXXX	X X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X
M962-39-001	37	×	Ê	×	$\times$					1	+							-										×			×	×	1	X	×	×××	XXX	XXXX	XXXXX	XXXXXX	XXXXXXX	XXXXXXXX	XXXXXXXXX	XXXXXXXXXX	X X X X X X X X X	XXXXXXXXX	XXXXXXXXX	XXXXXXXXXXXXX	X X X X X X X X X X X X	X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X X	X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X
M962-39-002	38	×	ŕ	×	$\times$			1	1	+	+	+	<b> </b>		1	1	1	+	+	+	<u> </u>			1	1	+	1.	1×	1		×	×		×	×	××	X X X	XXXX	XXXXX	XXXXXX	XXXXXXX	XXXXXXXX	XXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXX	XXXXXXXXXX	X X X X X X X X X X X X	X X X X X X X X X X X X	XXXXXXXXXXXXXX	X X X X X X X X X X X X X	X X X X X X X X X X X X X	X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X
	39		Ê	×	$\times$			T	1	+-	+	+	+		1	T	1	+	+						1	+	+	+	×		×	×		×	×	××	XXX	XXXX	XXXXX	XXXXXX	XXXXXXXX	XXXXXX	XXXXXXXX	XXXXXXXXXX	XXXXXXXXXX							X X X X X X X X X X X X X			X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X		
M962-39-003	40	×		×	$ \times$			T	1	+	+		4		1	1	1		_								+	4	$ \times$		×	×		X	×	×××	XXXX	XXXX	XXXXX	XXXXXX	XXXXXXX	XXXXXXX	XXXXXXXXX	XXXXXXXXXXX		XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXXXXX		XXXXXXXXXXXXXX	X X X X X X X X X X X X X			X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X		X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X	X X X X X X X X X X X X X X X X X X X		X X X X X X X X X X X X X X X X X X X
M962-39-003 M962-39-004		< × ×	¶^	>	>		Ľ		-			•		_				+		_	4				-	+	-		_	<	$\langle \rangle$	<	~	5	>	>	<u>v v v</u>	<u>&gt; &gt; </u>	<u>v v v v v</u>	<u>v v v v v v</u>	<u> </u>	<u> </u>	<u> </u>							v    v v     v v v v v v v v	> > > > > > > > > > > > > > > > > > > >						<u> </u>	X X X X X X X X X X X X X X X X X X X		x x x x x x x x x x x x x x x x x x x		

# Combination Matrix M962 & M962i - Part 2 (For Germany Only)

WZ290600236—UN—29SEP15 WZ00232,0000626-19-29SEP15

.....

# Combination Matrix M962 & M962i - Part 3 (For Germany Only)

# JOHN DEERE Rode //ensie Yps August Rk. Seid Rude Rude //ensie Yps August Rk. Seid Rude Rude //ensie 
**Basic Machine Identification Plate** 

### WZ290201482

WZ290201482—UN—270CT14 Machine Identification Plate



European Identification Plate

The machine identification plate is located on the right side of the frame by the front of the right wheel. The machine identification plate includes the European Union and the Custom Union certification.

WZ00232,0000476-19-14AUG18

# **Pump Identification Plate**



The pump identification plate is located on the pump.

OUCC020,000247D-19-06MAY10

# Keep Proof of Ownership



TS1680-UN-09DEC03

- 1. Maintain in a secure location an up-to-date inventory of all product and component serial numbers.
- 2. Regularly verify that identification plates have not been removed. Report any evidence of tampering to law enforcement agencies and order duplicate plates.

3. Other steps you can take:

- Mark your machine with your own numbering system
- Take color photographs from several angles of each machine

DX,SECURE1-19-18NOV03

# **Keep Machines Secure**



TS230-UN-24MAY89

Install vandal-proof devices.
 When machine is in storage:

- Lower equipment to the ground
- Set wheels to widest position to make loading more difficult
- Remove any keys and batteries
- 3. When parking indoors, put large equipment in front of exits and lock your storage buildings.
- 4. When parking outdoors, store in a well-lighted and fenced area.
- 5. Make note of suspicious activity and report any thefts immediately to law enforcement agencies.

6. Notify your John Deere dealer of any losses.

DX,SECURE2-19-18NOV03

# John Deere Service Keeps You On The Job

# John Deere Parts



We help minimize downtime by putting genuine John Deere parts in your hands in a hurry.

That's why we maintain a large and varied inventory—to stay a jump ahead of your needs.

DX,IBC,A-19-04JUN90

# 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

# **Technical Information**

Technical information can be purchased from John Deere. Publications are available in print or CD-ROM format.

Orders can be made using one of the following:

- John Deere Technical Information Store: www. JohnDeere.com/TechInfoStore
- Call 1-800-522-7448
- Contact your John Deere dealer

Available information includes:



TS189—UN—17JAN89

PARTS CATALOGS list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.



OPERATOR'S MANUALS providing safety, operating, maintenance, and service information.



TS1663—UN—100CT97

EDUCATIONAL CURRICULUM including five comprehensive series of books detailing basic information regardless of manufacturer:

- Agricultural Primer series covers technology in farming and ranching.
- Farm Business Management series examines "realworld" problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
- Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
- Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.
- Fundamentals of Compact Equipment manuals provide instruction in servicing and maintaining equipment up to 40 PTO horsepower.

DX,SERVLIT-19-07DEC16



TS224—UN—17JAN89

TECHNICAL MANUALS outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in a separate component technical manual.

# Α

Agitation Injectors	. 40-17
Analogue Pressure Measurement	. 40-30
Assembly of Automatic Tracking System	
Distance, Connection Tow Eye to Trailer	
Hitch	. 15-20
AutoDilute	
AutoDilute components	. 40-60
ContinuousDilution	. 40-67
Dead volume factory settings	. 40-65
Select the system	. 40-61
Setting the ContinuousDilution system	. 40-67
Setting the system	. 40-62
System composition	. 40-60
Working with AutoDilute	. 40-62
Working with ContinuousDilution	. 40-67
Automatic Tracking System	. 25-11
Automatic Trailing System	
Spraying with HMS	. 40-71
Spraving without HMS	. 40-71
Axle Maintenance	60-7
Brake Adjustment of the Slack Adjuster	60-8
Brake Lining Check	60-8
Check Hubs for Bearing Play – Adjust if	
Required	60-8
General Axle Inspection	60-9
General Safety	60-8
Grease Replacement	60-9
Hub Bearing Inspection	60-9
Wheel Nut Tightness	60-8

# В

40-1
60-22
35-3
41-19
40-51
40-52
55-16
55-18
55-17
0-3, 30-5

# С

Calibrating nozzles4	0-56
CAN-Bus Wiring Harness	
Preassembled Box 15-14, 1	5-19
Chemical incorporator	
Using the incorporator5	0-13
Chemical Inductor4	0-17
Chemicals, avoid contact4	0-12
Cleaning of the machine	
Dilution of Residual Liquids4	0-22
Dilution of Residual Liquids and Cleaning4	0-22

External cleaning of the machine Flushing the machine Internal cleaning of the tank	
Compressed Air Storage Tank	30-4, 30-6
Control System	40-1
Controls	
MFC	
Coupling Brake Hoses	25-7
Hydraulic Braking System	25-7
Pneumatic Braking System	25-8

# D

Digital Pressure Measurement	40-30
Display	
Navigation	25-10
Display Connector	25-10
Drain valve	40-37
Drain Valve	, 30-6
Cleaning of the Machine for Storage	60-20

# Е

Electrical connection	
GreenStar displays	
Implement Display 1100	15-6
External filling connection	

# F

# Н

Hand Washing Tank	
Hardware torque values	
Metric	
Hydraulic Braking System	

I

IBS		
Operating	 	40-31

# J

Jack Up the Machine	
Job Settings	
Agit. (Agitation Control	) 41-20
Job 1	
Job 2	

John Deere TerrainCommand	55-19
Working mode	55-20
John Deere TerrainCommand [™] Pro	55-6
Boom working mode	55-8
BoomCtrl Settings	55-10
John Deere TerrainControl [™] Pro	55-11
Boom working mode	55-13
BoomCtrl Settings	55-15

# L

Liquid fertilizers	50-6
Nozzle output	50-8
Lubrication	60-1
Lubrication High Pressure Cleaner	

# Μ

Machine design life	70-1
Machine rinsing	40-59, 40-68
Main Shut-Off Valve	40-29
Metric bolt and screw torque values	60-22
MFC	40-28
Minimize spray drift recomendations	50-2

# Ν

25-10
40-53
40-55
40-55
40-54
40-55
40-55
50-2
40-56
40-56
50-1
50-1
50-1
50-1
50-3
50-1
50-1
50-2

# 0

Operation of Hydraulic Functions	
Adjustment of Hydraulic Flow Divider	15-3
Select Different Hydraulic Systems OC,	
CC, LS	15-1

# Ρ

Park Brake		
Hydraulic Braking	System	30-2
Plug (3-pole Cobo)		15-14, 15-19

Pneumatic Braking System	30-3
Option from Model Year 2019	30-4
Power supply	15-11
Pressure Circulation System	40-34
Air Filters	40-34
On-Board Air Compressor	40-35
Pressure Filter	40-30
Pressure Regulator	40-29
Pump	
Filling via the Pump	40-39
Malfunctions	60-21
Operation	40-38
Pressure Accumulator	40-40
Use	40-39
Pump oil level check	20-1

# R

Rinse tank	
Preparing spraying liquid	
Rinsing the empty package	ging 40-25
Rinse Water Tank	
Filling	
Rinsing Empty Containers	

# S

Safety	
Protect against noise	05-2
Safe maintenance, practice	. 05-13
Safety, Avoid High-Pressure Fluids	
Avoid High-Pressure Fluids	4, 25-7
Safety, Steps and Handholds	
Use Steps and Handholds Correctly	05-2
Secondary Navigation	. 25-10
Self Rinsing Pressure Filter 40-31	, 55-24
Signal words, understand	05-1
Solution density	50-6
Solution Tank	
Filling	. 40-57
Solution Tank Filling	
Using the Filling Connection	. 40-57
Without Using Filling Connection	. 40-57
Spray boom	
Electro-hydraulic	
Folding boom tips	. 40-46
Independant folding boom tips	. 40-48
Variable geometry.	. 40-49
Hydraulic selector	. 40-43
Selective control valves	. 40-43
Spray Boom	40-1
Adjustment	35-3
Alignment	35-2
Folding/Unfolding	. 40-42
Height Adjustment	. 40-41
Section Division	. 40-40
Working Width	. 40-40
Spray drift control tips	50-2

Suction Selection Valve	
Suction unit	
Switch	
Master Valve On/Off	
Symbol List	41-6

# Т

T-splitter 15-	15, 55-24
Tank Filling	
AutoFill	41-21
Automatic	41-21
Manual	41-22
Tank, Rinse Water	40-21
TerrainCommand	
BoomTrac Settings	55-21
Tires and Wheels	40-1
Torque charts	
Metric	60-22
Tow Eyes	25-1
Transport safety	30-1
TwinSelect Automatic In Cab Nozzle Control	41-7

# U

USB Drive	-
Connector	
USB Drive Connector	

# W

Water (	Rinse)	Tank	
---------	--------	------	--

# Notes

# Notes