

SARITOR

Instruction book

Australian version

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We congratulate you for choosing a HARDI plant protection product. The reliability and efficiency of this product depend upon your care. The first step is to carefully read and pay attention to this instruction book. It contains essential information for the efficient use and long life of this quality product.

Illustrations, technical information and data in this book are to the best of our belief correct at the time of printing. As it is HARDI AUSTRALIA policy permanently to improve our products, we reserve the right to make changes in design, features, accessories, specifications and maintenance instructions at any time and without notice.

HARDI AUSTRALIA is without any obligation in relation to implements purchased before or after such changes.

HARDI AUSTRALIA cannot undertake any responsibility for possible omissions or inaccuracies in this publication, although everything possible has been done to make it complete and correct.

As this instruction book covers more models and features or equipment, which are available in Australia only, please pay attention to paragraphs dealing with precisely your model.

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Operator safety

Symbols

These symbols are used throughout this book to draw the reader's attention to certain points. This is the meaning of the four symbols.



This symbol means DANGER. Be very alert as your safety is at risk!



This symbol means WARNING. Be very aware as your safety may be at risk!



This symbol means ATTENTION. This guides you towards better, easier and safer use of your sprayer!



This symbol means NOTE.

Precautions

Read and understand this instruction book before using the equipment. It is equally important that other operators of this equipment read and understand this book.

If any part of this instruction book remains unclear after reading it, contact your HARDI dealer for further explanation before using the equipment.

It is particularly strongly recommended that any user:

- Read carefully the labels of the manufacturer of the of product(s) of treatment and respect the instructions given therein (metering, personal protective equipment, etc...);
- Mix only the products, whose compatibility was expressly recognized by the manufacturer of phytosanitary products;
- Avoid incorporating air to fill the container for your sprayer to avoid the formation of foam that can cause problems with overflow;
- Follow the precautions for use and the warnings indicated by the manufacturer of the plant protection product, in terms of storage always keep it located out of the reach of children and animals;

Before using the sprayer, read the following recommendations and the safety instructions:

- Local legislation may require operators to have a certificate of competence in the use of the equipment. Respect then applicable local legislation.
- The driver's seat is the intended working place during operation.
- Wear protective clothing. Clothing may differ according to the plant protection chemicals used. Respect the applicable local legislation. After spraying, the operator should have a wash and change his clothes. Clean any equipment that may have become soiled.
- Do not eat, drink or smoke during the use and maintenance of your sprayer.
- In case of poisoning, immediately seek medical advice or call the emergency service, see instructions indicated on the packaging of the products used.

2 - Safety notes

Filling and application

- No persons are allowed in the operational area of the sprayer. Take care not to harm people or surroundings when manoeuvring the sprayer, especially when reversing.
 - Slow down when driving on uneven terrain as the sprayer may become unbalanced and overturn.
 - Keep children away from the sprayer.
 - Do not attempt to enter the tank.
 - Do not go under the machine unless it is secured. The boom is secure when placed in the transport brackets.
 - For further information, see the Spray Technique book.
-

Usage

This HARDI EVRARD self-propelled sprayer is exclusively intended for use in farming work, i.e. the application of plant protection chemicals and liquid fertilisers.

Any other use is considered contrary to normal usage and is therefore forbidden.

- Carry out a pressure test with clean water prior to filling with chemicals. Never dismantle the hose while the sprayer is in operation.
 - DANGER! Do not exceed the maximum recommended rotation speed of the pump.
 - Rinse and wash the equipment after use and before servicing.
 - Never service or repair the equipment while it is operating. Always replace all safety devices or shields immediately after servicing or repair.
 - Disconnect the electrical power before servicing and depressurise the equipment after use and before servicing.
 - If an arc welder is used and connected to any part of the sprayer, disconnect the power leads from the battery before welding. Remove all inflammable or explosive material from the welding area.
 - The External Cleaning Device should not be used if important parts of the equipment have been damaged, including safety devices, high pressure hoses etc.
 - Take all precautions to avoid the risks related to unintentional contact with overhead power lines.
-

Operator's skill

The machine should be used and maintained by people who are aware of its special use and safety characteristics.

Before using your machine, familiarise yourself with all the commands. When working it will be too late to do so.

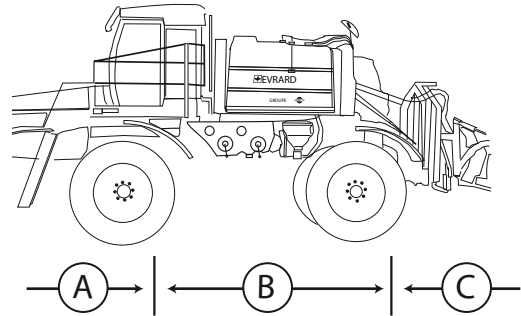
Ensure that you have the skills required for protecting crops and the environment, and for handling and spraying plant protection chemicals. For more information about personal and environmental protection, see the SPRAY TECHNIQUES book.

Definition of the working place

Never leave the operator's seat when the machine is moving.
The following is considered as the working place:

1. the outside area where the valves are located that can be handled during tank filling and liquid preparation operations
2. the operator's seat
3. the access ladder and the footboard for accessing the tank opening

A. Clean Zone	engine cabin access ladder and gangway operator's seat access to main tank
B. Work zone	liquid system valves filling with plant protection chemicals external connectors (filling - transfer)
C. Spraying zone	spraying boom and nozzles boom hydraulic controls



Responsibilities of the manufacturer and the user

- Comply with all recommendations for installation, carrying out adjustments, maintenance and repair contained in this instruction book.
- Use only original spare parts and accessories conforming to the manufacturer's recommendations.
- Do not modify or have your machine and its accessories modified by someone else (mechanical, electrical, hydraulic and pneumatic characteristics) and parts of the machine affecting user safety, without first requesting written agreement from the manufacturer.
- Failure to respect these rules may make your machine dangerous. In the event of damage or injury, HARDI EVRARD shall not be held liable in any way.

Lights, working at night

If there is insufficient light for working at night, the spraying boom should be equipped with boom lights. For more information on this equipment, contact your HARDI retailer.

Driving on public roads

When driving on public roads where the highway code and any other regulations apply, these must be observed, particularly regarding mandatory equipment such as lights, indicators, hazard lights etc.

You should be aware of the vehicle's size and weight, particularly the overall width and height.

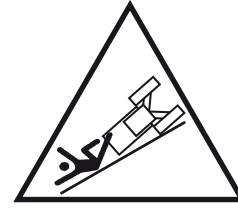


ATTENTION! In all circumstances, you should adapt to road driving, particularly by reducing your speed on bends, on meeting or being overtaking by another vehicle, depending on the state of the road surface and how full the tank is.

2 - Safety notes

Driving in fields

It is advisable to pay attention to the risks of overturning, especially at speeds of more than 15 km/hr or if turning on a sloping terrain.



ATTENTION! As a general rule:

- Adapt your speed and driving to suit the terrain you are driving on. Be aware and take care!
- In all circumstances and particularly on uneven and sloping terrain, drive the machine at a low speed, especially on bends and avoid sudden changes of direction.
- Do not brake or start up suddenly when going up or down a slope, bearing in mind the variable volume of liquid in the sprayer tank.

Safety decals

When you purchased your sprayer the dealer would have informed you of safe operating procedures and areas of potential danger. The orange triangle decals on your sprayer will warn you in regards to hazards.

This manual contains explanations for the decals which are found on your sprayer.

Operator safety

Read and understand this source book in conjunction with your operator's instruction before using the equipment. It is equally important that other operators of this equipment also read and understand this book. Local law may demand that the operator is certified to use spray equipment. Adhere to the law.

The following recommended precautions and safe operating practices, should be adhered to regardless of the decals.

You must:

- Wear protective clothing.
- Rinse and wash equipment after use and before servicing.
- Never service or repair the equipment while it is operating.
- Replace all safety devices or shields immediately after servicing.
- Do not eat, drink or smoke while spraying or working with contaminated equipment.
- Wash and change clothes after spraying.
- Wash tools if they have become contaminated.
- In case of poisoning, immediately seek medical advice. Remember to identify chemicals used.
- Keep children away from the equipment.
- If any portion of this instruction book remains unclear after reading it, contact your HARDI dealer for further explanation before using the equipment.
- Be careful not to hit people or surroundings when using the sprayer, especially when reversing.

Personal safety equipment

Depending on which type of chemical is used, some or all of the following protective clothing and equipment will be required:

1. Ear muffs,
2. Safety goggles or face shield
3. Respirator
4. Chemical resistant coveralls
5. Chemical resistant gloves
6. Chemical resistant boots

Contaminated clothing

Contaminated clothing should be removed and safely stored and laundered. Do not contaminate the inside of the tractor cab with soiled clothing.



2 - Safety notes

Explanation of symbols on safety decals

Mandatory

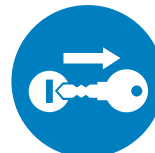
Read manual

- Consult Safety Manual, located inside the black manual canister or in manual slot in the cab.



Remove key

- Used in conjunction with 'Read Manual' symbol to warn that manual must be read before operating the sprayer.



Personal protective equipment

- Overalls, face screen, mask and gloves must be worn to operate in this area.



Maintenance

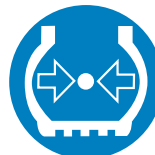
- A regular check and maintenance schedule is needed to keep this part operating safely.

Consult Operator's Manual for maintenance schedule.



Tyre pressure check

- A regular check and maintenance schedule is needed to keep tyres operating safely.
- Consult Operator's Manual for recommended pressure levels



Prohibited

Speed limit

- Maximum speed limit while operating the sprayer.
- Extra care must be taken on hills and on cornering.



No passengers on sprayer

Do not climb onto tank or into it

- Danger of injury or death.



Do not drink

- Hand wash tank water is only for personal hygiene use.



Do not overfill tank

- Risk of contamination
- Risk of tank damage



Overhead wires

- Take care operating near wires to prevent entanglement or electrocution.



Fluids under pressure

- Wear glove and face screen



Chemical hazards

- Read manufacturers labels.
- Wear personal protective equipment; including face screen and gloves when handling these.
- Provide adequate ventilation.



Danger overhead

- Do not enter paralift area or stand under booms
- Take care when opening lids - loose items may be present in them



Danger toxic fumes may be present

- Take care when opening lids - fumes may be present
- Do not inhale tank fumes



Danger of toppling over on hillside or slope

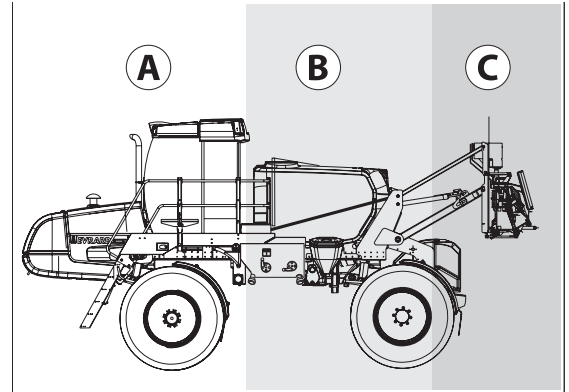
- Drive with extreme caution
- Widen axle track width to minimise risk



General information

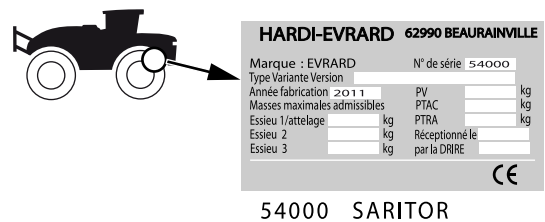
General View

The SARITOR is divided into 3 zones: a Clean zone, a Working zone and an Application zone, referring to the level of possible pesticide contamination see "Sprayer identification plates" on page17. In the following the functions and features are listed by zones. Please note that some of the features are optional equipment.



A: Clean area	Engine
	Working platform with ladder
	Cabin
	Tap for hand washing
	Access to Main tank
B: Working Zone	Tank level indicator
	Multipath Valves
	FastFiller coupler
	ChemFiller
C: Application Zone	Boom lift, up/down
	Boom
	Nozzles
	Mudguards
	Suspension

Sprayer identification plates



Road worthiness

When driving on public roads and other areas where the highway code applies, or areas with special rules and regulations for marking and lights, and you should follow these and equip implements accordingly.

It is imperative to follow the directions of the Highway Code or any other regulations regarding the mandatory equipment on the farm equipment (lighting, beacon, etc.). The sprayer should be conform to the standards in force. Be sure to check the regulation regarding that the overall dimensions, including the height and width of the sprayer

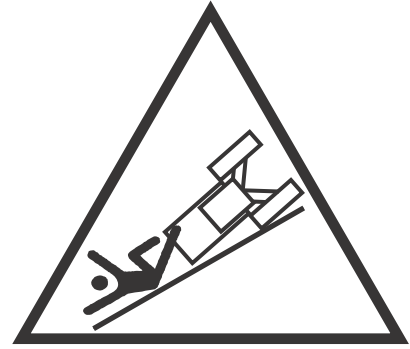


DANGER! You must in all circumstances adapt your driving on the road, particularly by reducing your speed in the turns

3 - Description

Driving in field

Carefulness must be taken with risks of overturning at a speed greater than 15 km/h, as well as to the slope of the field.



Sprayer usage

The HARDI sprayer is for the application of crop protection chemicals and liquid fertilisers. It is not allowable to use the sprayer for other purposes. If no local law demands that the operator must be certified to use spray equipment, it is strongly recommended to be trained in correct plant protection and in safe handling of plant protection chemicals to avoid unnecessary risk for persons and the environment when doing your spray job.

Chassis

Very strong and compact frame which also has a strong chemical and weather resistant electrostatic lacquer coat. The front and rear suspension is provided by a pneumatic system.

Tanks

The main tank made of impact-proof, UV-resistant and chemical resistant polyethylene, has a purposeful design with no sharp corners for easy cleaning. Nominal content 5000 l. A large, easy to read tank contents indicator is placed beside the platform and is visible from the tractor cabin. The filling hole is placed so it can be accessed from the platform. The SARITOR is standard equipped with a rinse water tank with a capacity of 575 litres, and a hand wash tank with clean water, with a capacity of 100 litres.

Boom

Boom and terminology

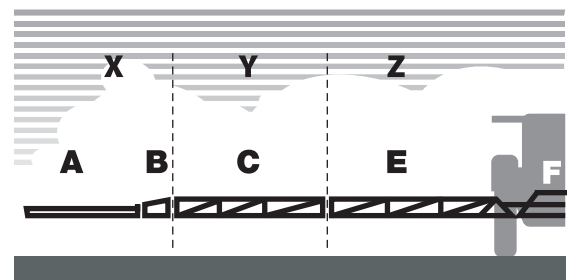
The Saritor is available with three different boom types. The TERRA FORCE boom and B3 48m are 3-folded and the TR5 are 2-folded. The booms are supported by a wide Paralift which enhances the stability of the boom and is hydraulically dampened for smooth ride and performance. The AutoTerrain centre is a Pendulum type specifically designed for stability and auto height control. Yaw-dampening occurs through the fold cylinders. The booms are fully hydraulically operated Z-version with all functions controlled via the Direct Hydraulic System (D.H.).

Boom features:

- Hydraulic centre lock
- Spring-loaded breakaway
- Wing tilt control
- AutoTerrain *optional
- Partial folding of outer sections. This enables alternative boom widths
- Boom light *optional

For 3-folded booms the terminology is as follows:

- A. Breakaway section
- B. Third outer section
- C. Second outer section
- D. First outer section
- F. Centre section

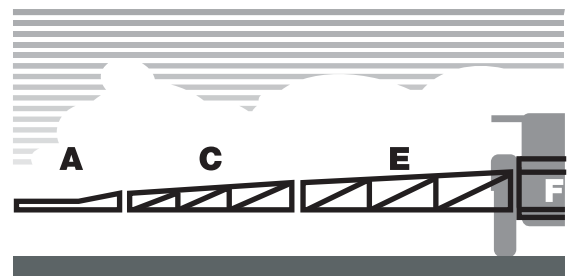


NOTE! When controlling the boom at the SetBox, the folding sections are:

- X Third outer and breakaway section
- Y Second outer section
- Z First outer section

For 2-folded the terminology is as follows:

- A. Breakaway section
- C. 1st outer wing
- E. Inner section
- F. Centre section



3 - Description

Safety info

The boom must not be folded/unfolded while driving! Never use the folding/unfolding functions before the sprayer has been stopped! Failure to do so will damage the boom.



DANGER! When folding or unfolding the boom, make sure that no persons or objects are within the operating area of the boom.



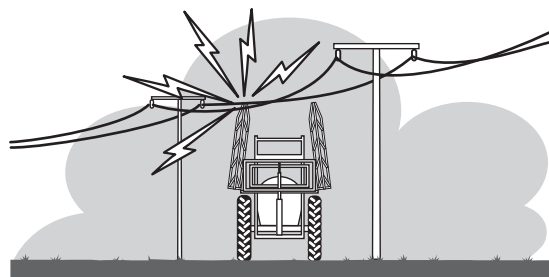
DANGER! Always follow the guidelines listed below when driving in areas with overhead power lines:



Danger! Never use the folding/unfolding functions in areas with overhead power lines. Unintended boom movements may cause contact with overhead power lines.



ATTENTION! Only unfold and fold the boom on level ground.

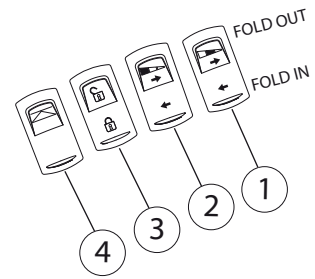


Boom controls

Boom Controls SARITOR equipped with TR5 boom

The boom buttons on the console control the following functions:

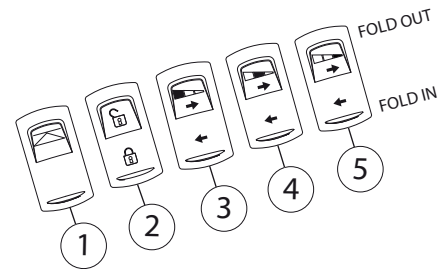
1. Unfold/Fold 1st outer wing.
2. Unfold/Fold inner wing.
3. Lock/Unlock centre.
4. Automatic level centre (Only AutoTerrain).



Boom Controls Saritor equipped with B3 or TerraForce boom

The boom buttons on the console control the following functions:

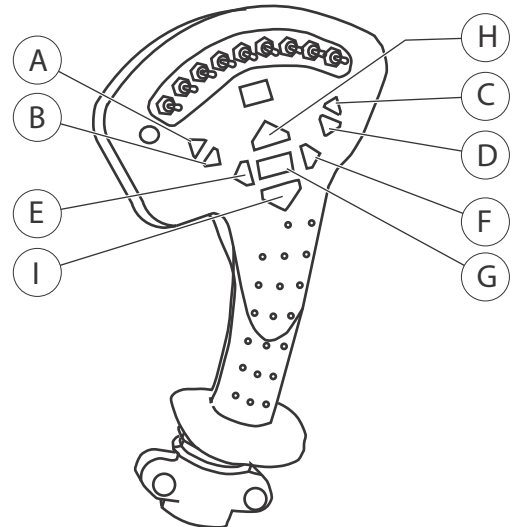
1. Automatic level centre.
2. Lock/Unlock centre.
3. Unfold/Fold inner wing.
4. Unfold/Fold 1st outer wing.
5. Unfold/Fold 2nd outer wing.



Grip controls

The grip controls the following:

- A. Boom tilt up left
- B. Boom tilt down left
- C. Boom tilt up right.
- D. Boom tilt down right
- E. Boom slant left.
- F. Boom slant right.
- G. Main ON/OFF.
- H. Boom lift.
- I. Boom lower.



3 - Description

AutoTerrain (Optional)

AutoTerrain is a computer controlled pre-emptive boom stability and auto height control system which maintains the correct relationship and height of the boom to the different field conditions. AutoTerrain highly tuned computer controlled proportional electro-hydraulics and ultrasonic sensors help spray more safely, reducing potential ground strikes and prevents incorrect spray height.



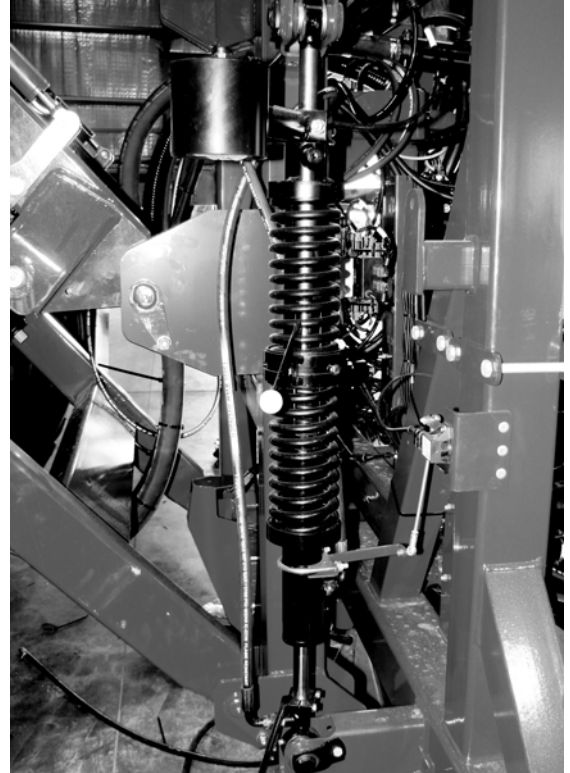
WARNING!

- Stability control roll sensor and indicator must be correctly aligned to prevent uncontrolled and continuous boom oscillation.
- The pendulum centre stability control linkage points must be regularly lubricated to protect swivel balls from moisture penetration and prevent swivel ball seizure.



ATTENTION!

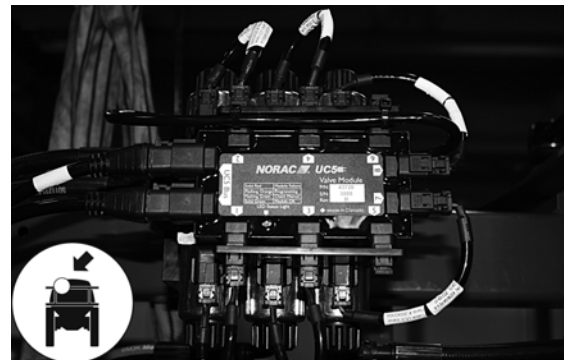
- For optimum AutoTerrain performance the stability & height control sensors must be checked and cleaned regularly.
- Dusty, damp or missing sensors pads will not read accurately and AutoTerrain will be compromised. Foam pads must be washed and dried daily. The boom should not be used if foam pads are missing from the sensors.
- Regarding AutoTerrain, please refer to specific book for information about Operation, Calibration and Maintenance.



AutoTerrain Hydraulic block

On sprayers with AutoTerrain this hydraulic block manages hydraulic pressure for the automatic boom height control functions. Functions controlled include:

- Lift (paralift)
- Wing Tilt (left and right hand side)
- Centre AutoTerrain Cylinder



Liquid system

General information - valve system

All of the spray functions are operated via centrally situated valves with colour coded pictorial symbols for easy operation. The fluid system is located on the self-propelled sprayers left side under the cover. To access the Fluid Working Zone open the cover. Most valves can be operated from both the Fluid Working Zone or from the cab.

Pump

The centrifugal pump has a simple design. The pump and valves are easy to access, they isolate the moving parts from the liquid.

Valves and symbols

The valves are identified by coloured symbols according to their function. They correspond to the different possible functions of the valves, thus facilitating their use. A function is activated by turning the handle towards the desired function.

Suction valve

Suction valve = blue symbols

Turn the handle towards the symbol for the required function



TurboFiller empty



Chemical probe transfer



Side Filtered Fast Filling System



Rinse venturi



Suction from external source)



Front Filtered Fast Filling System (optional)



Flush Tank fill



Main Tank fill



Main Tank drain

Pressure valve

Pressure valve = green symbols

Turn the handle towards the symbol for the required function



TurboFiller Venturi/Probe



Spray boom


3 - Description


TurboFiller

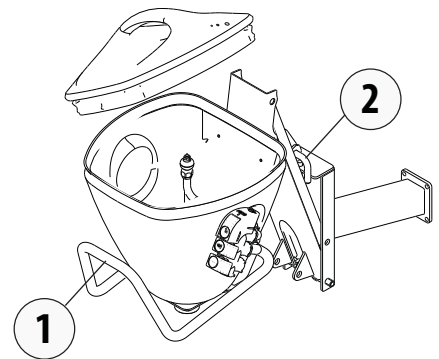
TurboFiller = yellow symbols

The TurboFiller is located in the Fluid Working Zone on the sprayers left side. When being used it should be unlocked by pulling out the lock pin(2) situated to the right of the TurboFiller and pushed down by grabbing the handle (1) on the TurboFiller until it clicks into locked down-position.

When retracting the TurboFiller after use, Pull the handle (1) upwards until it is back in storing position. secure it by refit the lock pin(2).

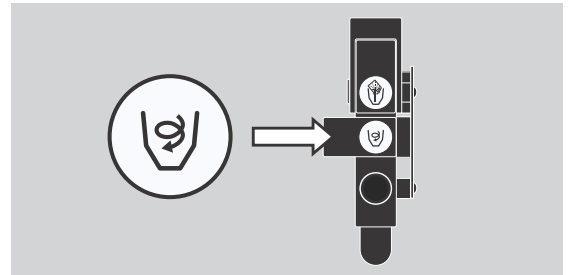
 **DANGER!** Never operate the cleaning nozzle with the lid open unless it is covered by a chemical container!

 **WARNING!** Before releasing the lock pin (2) always keep a hand on the grip to avoid abrupt movement of the TurboFiller!



TurboDeflector valve

This TurboDeflector valve activates the vortex flushing of the TurboFiller. The valve is the middle valve situated to the left side of the TurboFiller and is activated in two ways. Push the valve lever down to get a quick flush in the hopper. Lift the lever to lock it in open position for continuous liquid rotation in the hopper.




Chemical container cleaning lever

The upper level located to the left of TurboFiller are used for two purposes:

When TurboFiller lid is open: For cleaning empty containers. Put container over the rotating flushing nozzle in the middle of the TurboFiller to rinse inside of the container.

When TurboFiller lid is closed: Use the Chemical Container Cleaning lever to rinse the hopper after filling of chemicals has ended.

 **DANGER!** Do not press lever unless the multi-hole nozzle is covered by a container to avoid spray liquid hitting the operator.

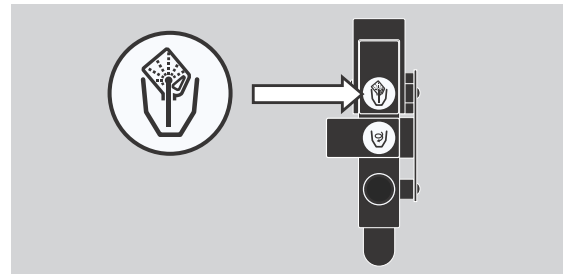
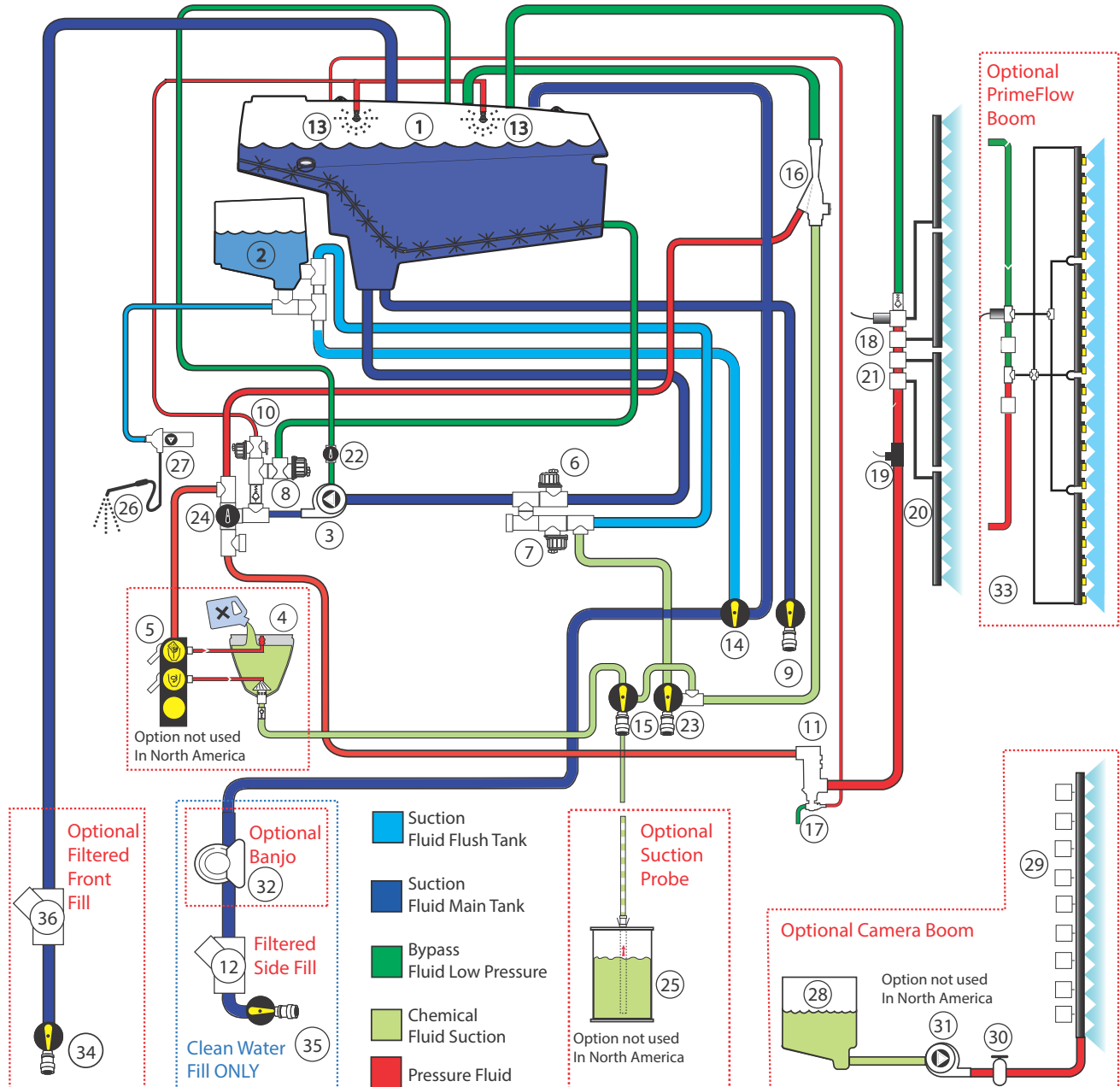


Diagram - Liquid system with optional extra

SARITOR 5500 FLUID SYSTEM



SARITOR 5500 FLUID SYSTEM V17 20 January 2014

- | | | |
|-------------------------|-----------------------------|----------------------------------|
| 1 Main Tank | 13 Rinse Nozzles | 25 Chemical Tank (not supplied) |
| 2 Flush Tank | 14 Fill Direction Valve | 26 Wash Down Hose |
| 3 Main Fluid Pump | 15 Vacuum Source Valve | 27 Flow Jet Pump |
| 4 Turbo Filler Tank | 16 Ejector - FastFill | 28 Camera Boom Tank (opt) |
| 5 Turbo Filler controls | 17 Filter Bypass Return | 29 Camera Boom (opt) |
| 6 Main Tank Valve | 18 Pressure Sensor | 30 Manual Regulation Valve (opt) |
| 7 Rinse Tank Valve | 19 Flow Meter | 31 Second Fluid Pump (opt) |
| 8 Agitation Valve | 20 Spray Boom | 32 Banjo Filling Pump (opt) |
| 9 Main Tank Empty Valve | 21 Section Valves | 33 PrimeFlow Boom (opt) |
| 10 Rinse Nozzle Valve | 22 Pump Bleed Valve | 34 Front Filling Valve (opt) |
| 11 Cyclone Filter | 23 Chemical Induction Valve | 35 Side Filling Valve (opt) |
| 12 Side Filling Filter | 24 Chemfiller/Ejector | 36 Front Filling Filter (opt) |

3 - Description

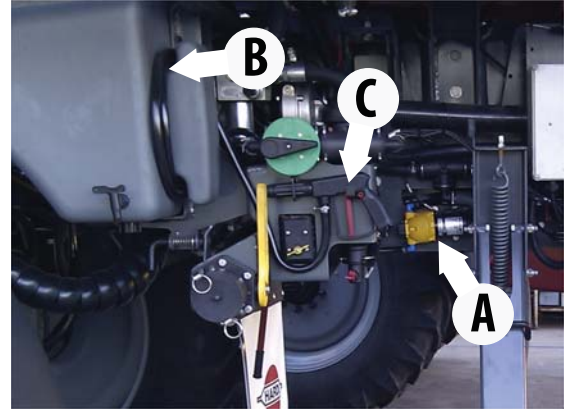
External Cleaning Device

The External Cleaning Device comprises a hose (B), spray gun (C) and a electric pump (A).



DANGER! The External Cleaning Device operates at very high pressure and could potentially cause serious personal injury, it is therefore essential the following Safety rules be observed and strictly enforced:

1. Never point the water jet at people, animals, electric installations or equipment, overhead power lines or other sensitive objects.
2. Never try to clean clothing or foot wear, especially if being worn by a persons.
3. Pressure can penetrate skin and cause severe injury. Newer work with un-protected eyes, bare feet or sandals.
4. Never operate without approved chemical safety wear including face mask, gloves, respirator, boots and overall.
5. Beware of flying particles being dislodged by the cleaning jet.
6. The spray gun and hose are affected by "recoil" when the handle is released during operation - therefore always hold the insulation on top of the gun with one hand and the pistol grip with the other hand to facilitate better control of the device.



Filters

A Cyclone filter is fitted in the work zone on the right side of the TurboFiller. It has a built in self-cleaning function.

In-line pressure filters can be fitted at each section as an option.

Nozzle filters are fitted at each nozzle.

All filters should always be in use and their function checked regularly. Pay attention to the correct combination of filter and mesh size. The mesh size should always be less than the average of the nozzles in use.

CycloneFilter

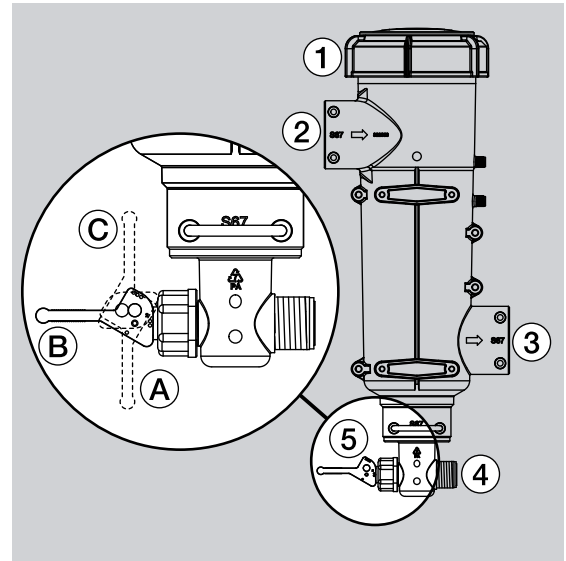
With the CycloneFilter any impurities in the spray liquid will by-pass the filter and be re-circulated back to the tank via the return flow.



DANGER! The main fluid pump must be stopped and the Chemfiller/Ejector valve should be closed(facing upwards) " before opening the Cyclone filter! If not, then spraying liquid can hit you when opening the filter and drain the main tank content!

Function diagram

1. Filter lid
2. From pump
3. To boom
4. Return to tank
5. Return valve



Valve (5) has three positions marked with small dots on the lever:

- A. This position marked with 1 dot: There is no return flow. Position is used when rinsing the boom if there is spray liquid in the main tank. Also used when high spraying volume is required.
- B. This position marked with 2 dots: Normal spraying position. With return flow to prevent filter is going to be clogged when spraying. This position is used when rinsing the boom if the main tank is empty.
- C. This position marked with 3 dots: Flushing position which is used if filter is clogged. Lift and hold the lever to use this position which largely increases return flow and flushes the filter. The pressure valve must be set to "Spraying".

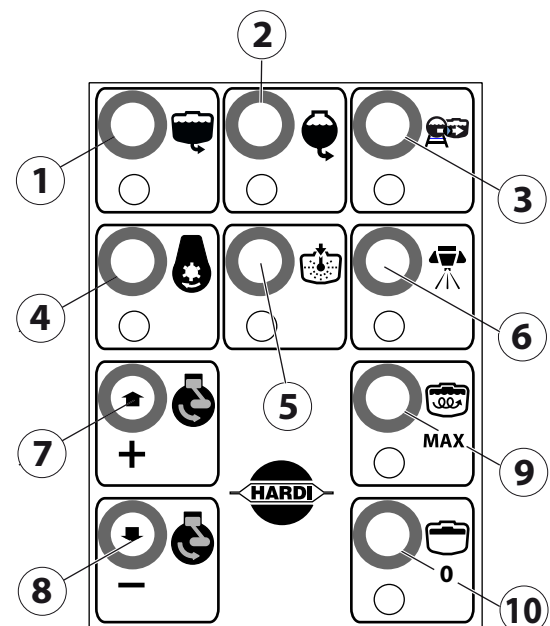


ATTENTION! Use of position (C) is no guarantee for a clean filter. Always regularly do a visual inspection and cleaning of the filter. If needed see "10 hours service - Cyclone filter" in the Maintenance section.

External controls

A panel of push buttons allows external control of the main functions of spraying and the engine speed. The commands are grouped together by colour to allow to simplify their use. An indicator show when the function is activated.

1. Main tank source valve on/off
2. Flush tank source valve on/off
3. Banjo FastFill pump on/off (if fitted)
4. Main fluid pump on/off
5. Tank rinse nozzles on/off
6. Boom nozzles on/off
7. Engine rpm increase
8. Engine rpm decrease
9. Agitation increase to maximum
10. Agitation decrease and off



3 - Description

Cabin

Emergency Exit

In case of emergency, a handle to the emergency exit is placed to the right of the driver's seat, on the opposite side to the access door to the cab.

To exit the cab using the emergency door, proceed in the following way:

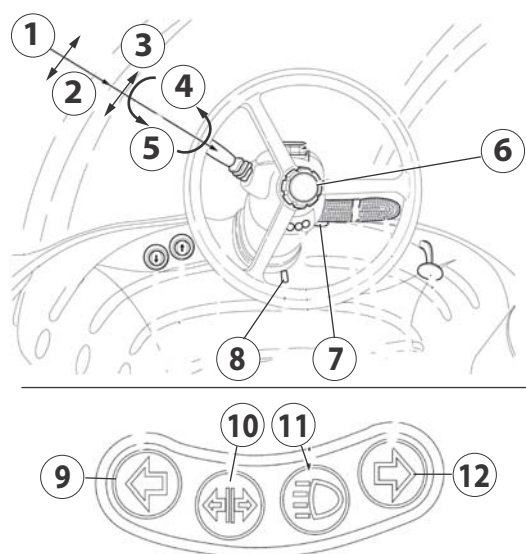
- Place the handle of the emergency door horizontally
- Slightly open the emergency door until the metal pin is visible at the bottom of the handle. Then lift the handle to release the door lock.
- Open the door completely.
- Exit the cab.



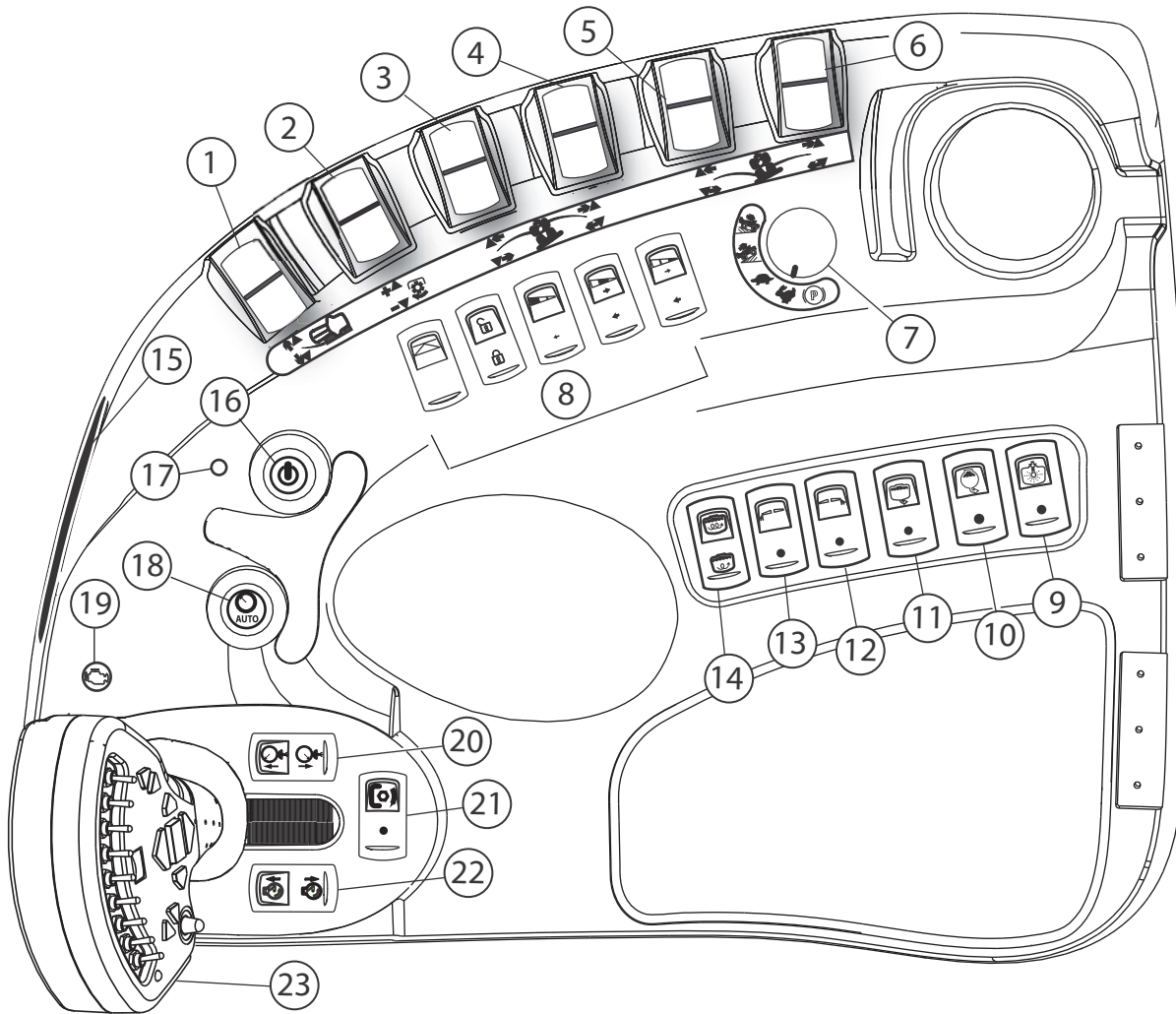
The gateway of access to the cab must remain free of any obstacle, to allow access in case of emergency

Steering column

1. Direction indicator
2. Horn
3. Selection of lights road (top) and high-beam headlights (bottom)
4. Position Lights
5. Rotary switch for lights of road
6. Adjusting the height of the steering wheel
 - Unscrew the bolt, then raise or lower the steering wheel to the desired height
7. Tilt of the steering wheel
8. Steering column inclination adjustment
9. Direction indicator left
10. Hazard warning lights
11. Road Lights
12. Direction indicator right



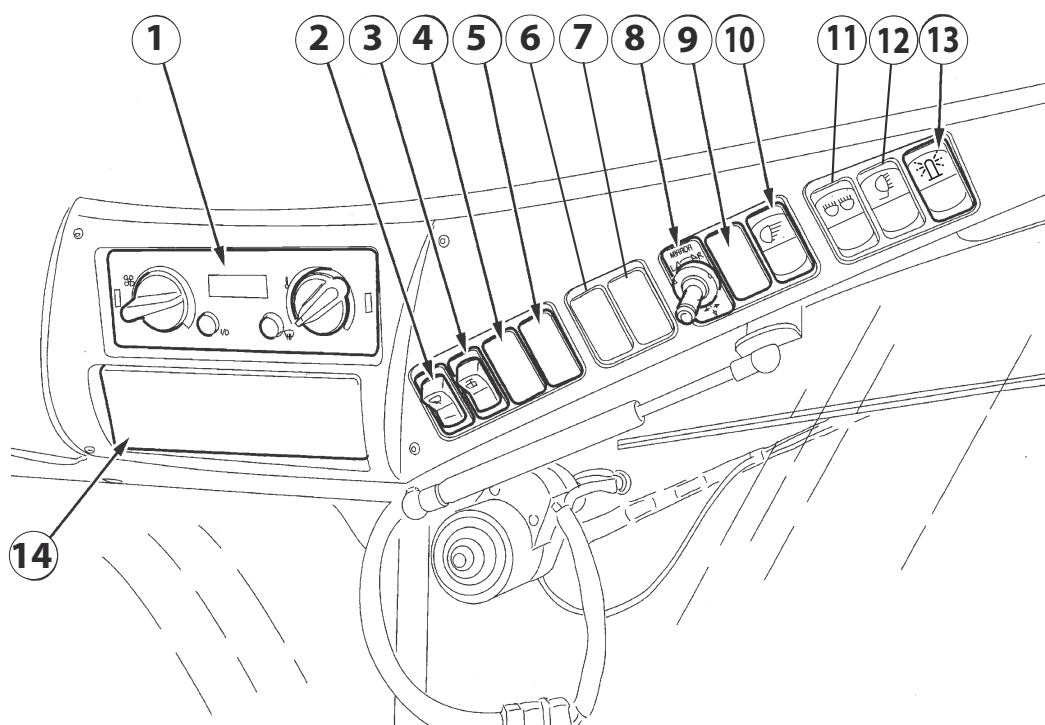
Instrument panel



- | | |
|--|---|
| 1. Not used | 15. Ashtray |
| 2. Not used | 16. On/Off button of the electronic computers |
| 3. Switch to the track on the left front wheel | 17. Power on LED for computers |
| 4. Variation of the track Switch Front Right | 18. Auto Switch/Manu for pressure regulation |
| 5. Variation of the track Switch Rear Left | 19. Engine fault indicator |
| 6. Variation of the track Switch Right Rear | 20. Spray pressure |
| 7. Speed selector and parking brake | 21. Spray pump clutch switch |
| 8. Boom hydraulic controls | 22. Engine speed variation switch |
| 9. Tank rinsing nozzles | 23. Multi-functional forward handle |
| 10. Suction from rinsing tank | |
| 11. Suction tank Main Switch | |
| 12. Right end nozzle control switch | |
| 13. Left end nozzle control switch | |
| 14. Command of the agitation | |

3 - Description

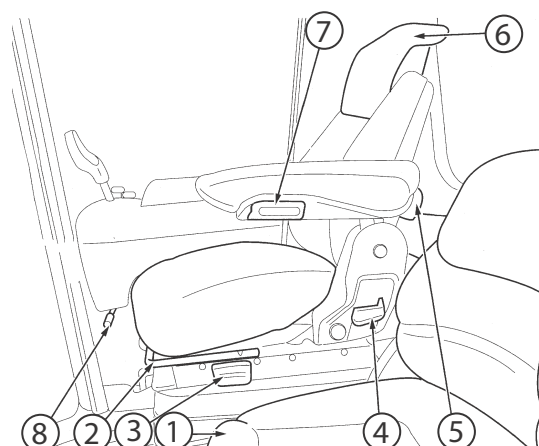
Cabin roof instrumentation



1. Air-conditioning controls	8. Adjusting the door mirrors
2. Switch of the wipers	9. Not used
3. Switch window washer	10. Boom lights + Rear light
4. Not used	11. Cab front work lights
5. Not used	12. Side work lights + optional front work lights
6. Not used	13. Beacon Light
7. Not used	14. Location of the radio

The seat

1. Passenger Seat Cushion
2. The driver's seat before and after settings
3. Settings of the weight and height of the seat
4. Adjusting the inclination of the backrest
5. Lumbar adjustment
6. Top adjustment of the height of the folder
7. Adjust the armrest of the left side
8. Setting right-hand side of the module from front to back

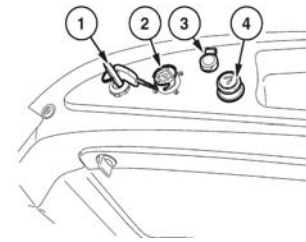


Start-up and diagnostics of the engine

The start module and diagnostic of the engine is placed on the right hand side at the rear of the seat.

1. Ignition key and start (4 positions)

- Not used
- OFF
- Contact
- Starting the engine

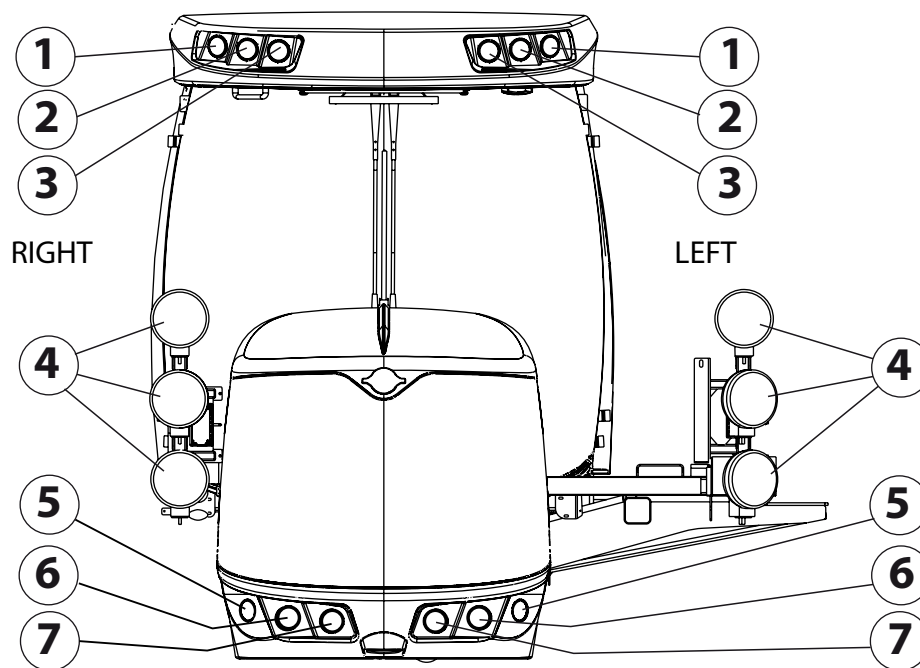


The position 'Contact' engages the power of the electrical circuits and the engine preheat

2. Diagnostic socket of the engine -IS¹
3. Taken 12 volts (permanent)
4. Cigarette lighter

3 - Description

Lighting and cab light



- | | |
|---|--|
| <ul style="list-style-type: none">1. Cab front outer working lights2. Cab front center working lights3. Cab front inner working lights4. *Optional work lights | <ul style="list-style-type: none">5. Hood working lights6. Road Lights dipped headlights7. Road Lights high beam |
|---|--|



The headlights ref. 2 and ref.3 will light up simultaneously.

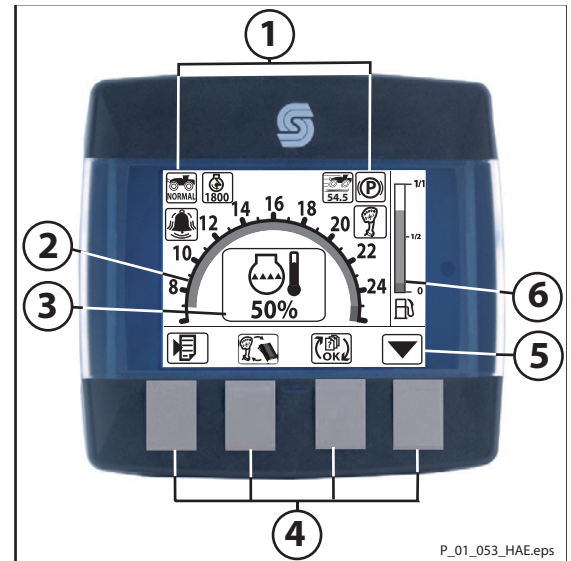


The headlights ref. 1, ref. 4 and ref.5 will light up simultaneously.

The multifunction display

The multifunction display shows information relating to the operation of the engine, (tachometer, temperature, etc.) and the various driving modes (hare, tortoise, etc.). The display also shows the errors that may occur during the use of the machine (temperature and pressure the engine oil, transmission error, etc.).

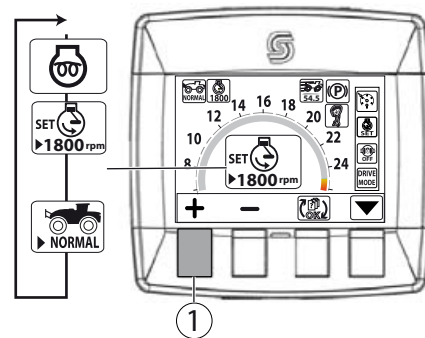
1. Driving mode status
2. Tachometer
3. Display of the functions of the engine and transmission
4. Push Buttons of controls and settings
5. Horizontal Menu
6. Vertical Menu



P_01_053_HAE.eps

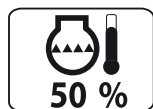
Display of functions

- Press the push button ref.1 to scroll through the various functions

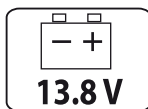


3 - Description

Messages in normal operating mode



Engine temperature
0 à 100%.



Battery charge voltage



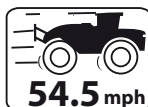
Engine oil pressure



Limitation of the motor speed mode [field]
See "Limitation of engine speed - hydraulic oil temperature too high" on page 54.



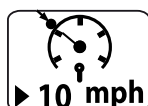
Turbocharger pressure



Restricting the speed of movement in mode [route]



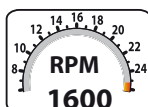
Hydraulic pressure of the transmission



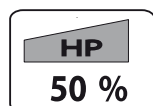
Restricting the speed of movement in mode [Field]



Instant fuel consumption



Displays the speed of the engine



Power supplied by the engine



Errors of functioning of the driveshaft
See "Transmission error codes" on page 121.



Displays if errors of engine operation to occur (level 1)



Preheating of the engine

Message in selection mode



COMFORT Mode of conduct
See "Driving mode" on page 51.



Anti-slip disabled
See "Traction Control System" on page 51.



NORMAL Driving Mode
See "Driving mode" on page 51.



Anti-slip engaged
See "Traction Control System" on page 51.



Mode of conduct POWER
See "Driving mode" on page 51.

Alarm Messages - priority



The display of these alerts imposes the immediate shutdown of the engine.



Alarm engine overheating



Alarm pressure of the turbo-compressor



Alarm engine oil pressure.



Alarm engine defect (level 3)

Alarm Messages - Mode 'Degraded'



These warning messages are displayed when the operating anomalies appear on the self-propelled



Temperature of the hydraulic transmission too high



Temperature of the hydraulic transmission too low



Alert default engine (Level 2)

3 - Description

Alarm Messages - Maintenance

These warning messages are displayed when maintenance work must be performed on the self-propelled



Maintenance (level 1)

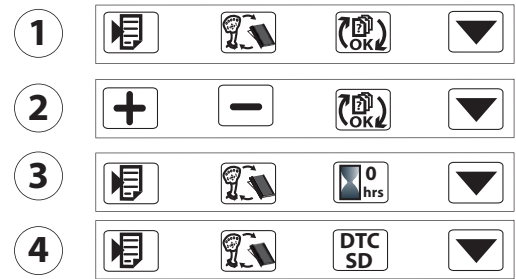


Maintenance (level 2)

Horizontal Menus

Press button to select the menu corresponding to the symbol.

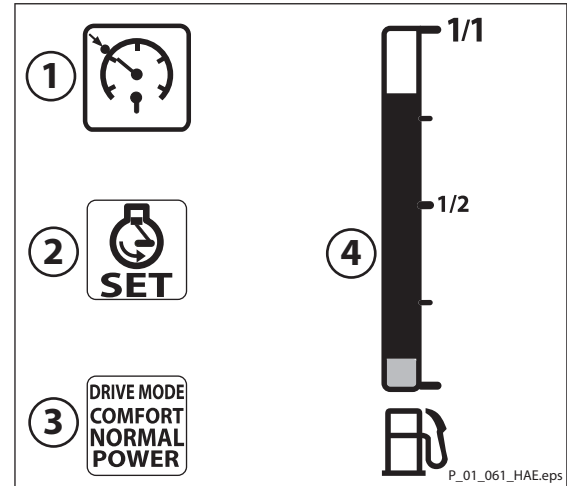
1. Normal Mode of Operation
2. Settings / settings
3. Hour meter
4. Management of errors of the transmission (SD) and the engine (DTC).



Vertical Menus

Press button to select the menu corresponding to the symbol.

1. Forward speed limitation
2. Engine speed limitation
3. Driving mode selector switch
4. Fuel gauge



The fuel gauge ref.4 is displayed by default, if pressing the vertical selecting button it will automatically hide after 5 seconds of inactivity it will reappear.

General information

Unloading the sprayer from the truck

The machine can only be unloaded if the engine is running. To move the self-propelled, you must observe the following points

Turn the battery switch to power the electrical circuits

Place the forward handle in neutral.

Check that the parking brake is engaged.

Turn the ignition key to start the engine

Press the switch of the acceleration of the engine

Push the handle of progress very slowly toward the front to move forward, toward the back to go back

Ensure that no one is in the unloading area.

Do not unload the sprayer if you are not familiar with the instructions described above

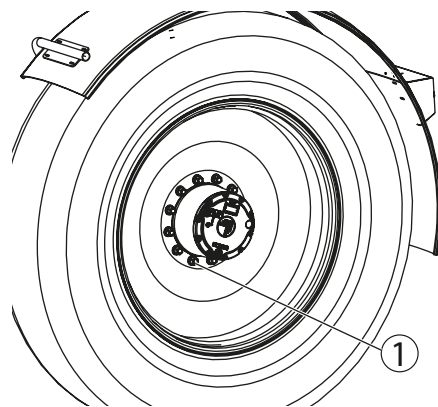
To ensure a sufficient traction and braking of the self-propelled when unloading, the engine rpm must be a minimum of 1500 rpm.

Wheel nuts

- Tighten the nuts and apply a tightening torque of **60 daN.m (442.4 lb.ft)**.



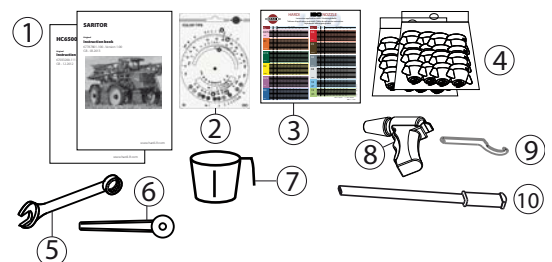
WARNING! Never oil or grease the wheel nut threads. Observe the tightening torque.



Accessories

Some accessories are supplied separately with the machine. The list varies according to the equipment and options

1. Instruction books	6. Brake release handle
2. ISO nozzle disc	7. Graduated cup
3. Table ISO nozzle	8. Multi-jets spray
4. Nozzles	9. Key for external connector
5. Socket spanner	10. Hydraulic pump lever (brake release-bonnet open)



4 - Sprayer setup

Access to the engine

To access the engine, you must lift the hood.

Opening the hood

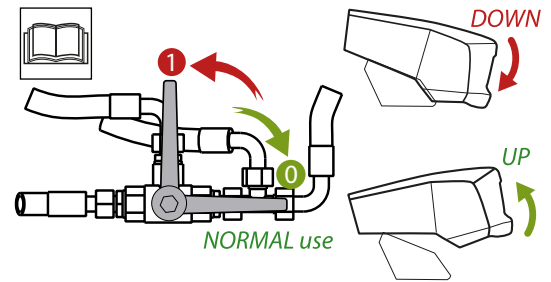
- Turn the valve on the position (1).
- Use the manual pump to lift and hold the hood open to the desired height.

Closing the hood

- Gradually turn the valve to the position (0) to close the hood



NOTE! The valve should remain in the position (0) when the hood is lowered.



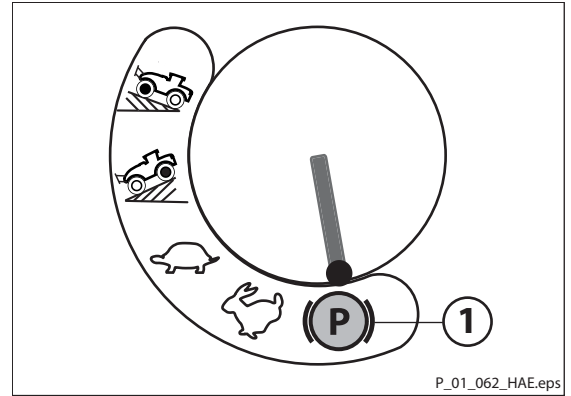
Check engine

The main elements must be verified before the first commissioning of the engine:

- Coolant Level and engine Oil Level
- Correct tightness of the cartridge of oil and fuel
- Tension on the belts

Access to the driving position

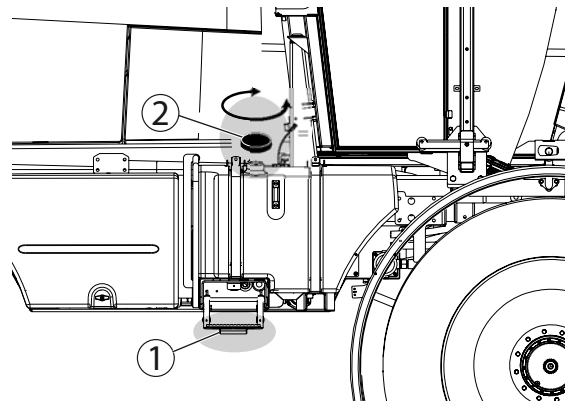
When the engine is off, the ladder to access to the driving position is lowered. It goes back automatically as soon as the engine is running and the parking brake is no longer engaged (pos.1).



Filling the fuel tank

The fuel tank has a 550-litre capacity. Before filling, do following:

- Stop the engine
- Pull and lower the access ladder ref.1 to access the reservoir
- Thoroughly clean the plug ref.2 to prevent the introduction of impurities into the tank. Use a funnel and a filter if necessary.
- Do not smoke not during the filling of the tank



i Avoid the fluid tank to be completely empty, in order not to introduce any impurities or air in the circuit.

i Before a prolonged shutdown, it is preferable to keep the tank filled to the maximum qty, in order to avoid any trace of condensation in the tank.

The CUMMINS engines with electronic injection meet the standards in US, CANADA and Europe. The engines must operate with diesel to low sulfur (ultra-low ULSD diesel - ULSD), with a maximum of 15 ppm for the United States and Canada, and 10 ppm for Europe.

The mixture of fuels to low sulfur (ULSD) and biodiesel is accepted up to 20% in order to meet the certification B9000.

i • Refer to CGE Cummins Service Bulletin 3379001 "Fuels For Cummins Engines" for more details.

4 - Sprayer setup

Hydraulic Oil Level

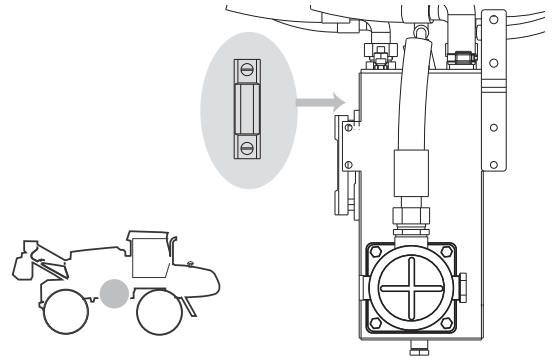
A visual gauge is installed on the hydraulic reservoir with a capacity of 100 liters. A detector warns the user that the level in the tank is too low. Periodically check hydraulic oil level.



To avoid any risk of damage to the hydraulic components, when the audible alarm sounds, stop immediately the self-propelled and stop the engine.

The fill hole of the hydraulic reservoir is located in the vicinity of the platform for access to the cab. To fill the tank, it is recommended that:

- Thoroughly clean the tank cap, to eliminate all traces of dirt and moisture.
- Filter the oil when filling
- It is essential to observe the quality of the recommended oil. See "Table of recommended lubricants" on page 83.



Wheel Drive Gearbox Oil Level

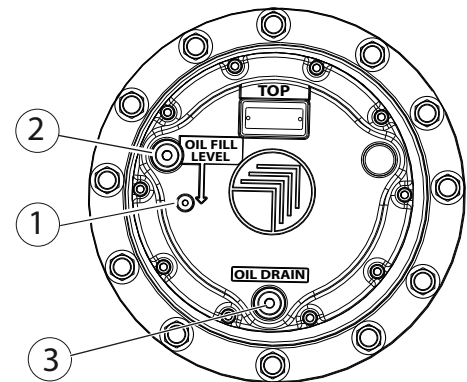


Before travelling, check the oil level

- Move the self-propelled to orient the reducers as shown in the illustration
- Unscrew the level rep.1
- Add oil if necessary, by the port (REF. 2); fill until the oil flows through the port of level rep. 1.



Use exclusively recommended transmission oil. See "Table of recommended lubricants" on page 83.

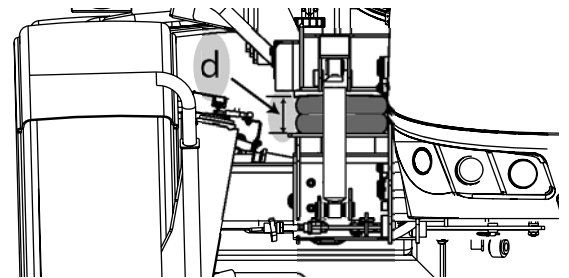


Air Suspension

Height of the suspension cushions (distance d), when the pressure of service is reached

Front = 254 mm (10 in)

Rear = 235 mm (9.25 in).



If this is not the case, see chapter: "Air suspension adjustment" on page 98

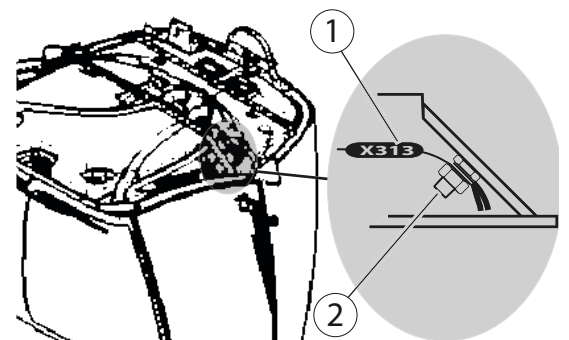
Selection of temperature unit

A wire marked X313 is located at the right hand side of the cab :

- Open the cab roof
- Select the temperature unit Celsius or Fareinheit

Celsius (°C) = wire (1) is connected to the nut (2) (ground)

Fareinheit (°F) = Disconnect and isolate the wire (1)

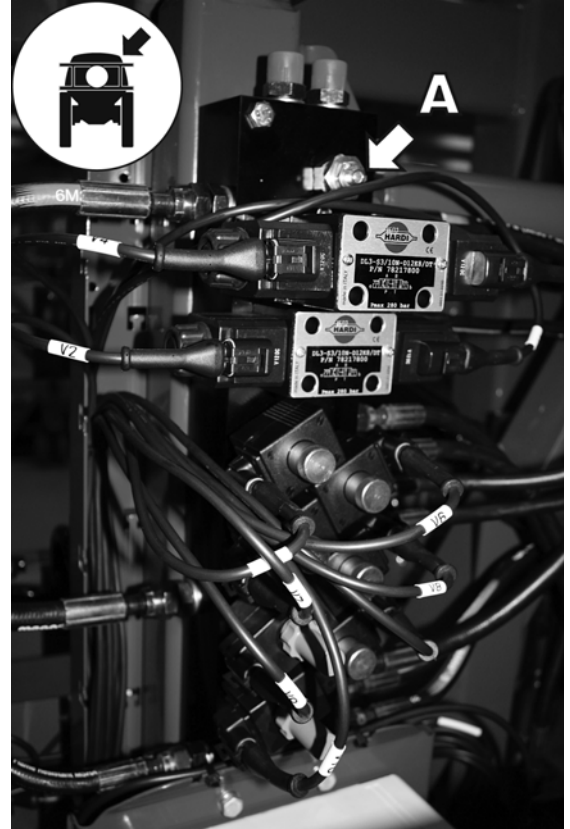


Boom folding speed adjustment

The restrictor for adjusting the boom folding speed is in the main hydraulics block

The throttle valve (A) can adjust the folding speed of the boom.

Adjusting inwards = slower boom.



4 - Sprayer setup

Auto-steer

Auto Steering system and warnings



WARNING!

- Failure to take note of this warnings will damage the boom.
- Auto steer should never be engaged before the tractor is brought on the line. The combined aggression of the auto steering system snapping to the line and continued uncontrolled auto steer oscillation is a major cause of boom yaw movement and fatigue.



ATTENTION!

- Auto-steering is a GPS controlled system that control or allows the tractor to acquire and stay on a predetermined heading. Auto-steer is user friendly however a poorly setup system can result in very aggressive boom behaviour.
- Auto-steer systems can contribute to uncontrolled boom yaw movements and therefore must be considered when trying to control yaw movement.
- Auto steer re-tuning is highly recommended to minimise tractor oscillation and boom Yaw movement. Contact your guidance system provider for the latest firmware available that should provide the most up-to-date line acquisition settings and performance.
- Recalibrated the dead-zone & gain settings to minimise oscillation (chasing the line) and line acquisition aggression.
- Ask your dealer service technicians to help evaluate your auto-steer aggressiveness.

Starting and stopping of the machine

General information



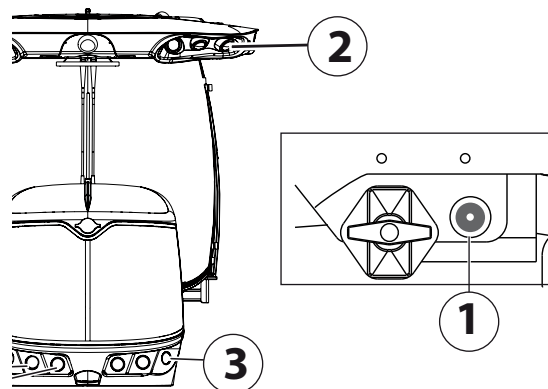
Before starting the engine, check the level of the engine oil, coolant and hydraulic oil. Check that the engine radiator and air filter is clean.

Lighting of the gateway of access to the driving position

The self-propelled SARITOR is equipped with a light at the side of the ladder and the gateway.

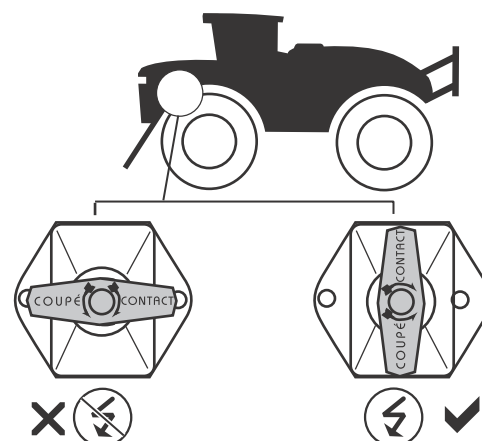
Press the push button ref.1 to turn on the headlights rep2 and rep3

The will turn off automatically after a few minutes.

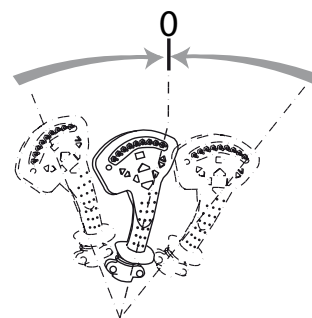


Initialize the system more+One

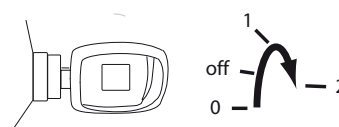
- Turn the battery switch to power the electrical circuits of the self-propelled



- Place the grip in neutral to start the engine.



- Turn the ignition key to position [1] to initialize the Plus+One system.
- Turn the key start the engine on the ref. 2. Release it after start-up and the key will automatically return to position [1].



5 - Operation

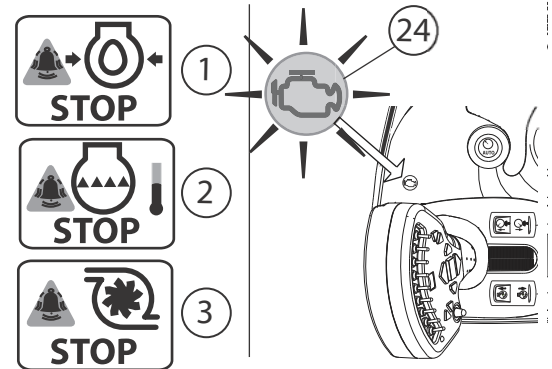
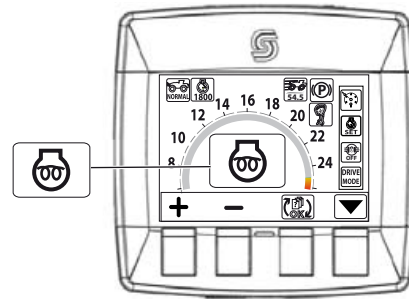


The symbol only appears if the engine preheat is required to start.



After starting the engine, if light ref.24 lights up and one of the 3 priority messages appears on the screen, you must stop the engine immediately to prevent any deterioration of the engine

1. Engine oil pressure is too low.
2. Engine overheating.
3. Pressure turbo-compressor too low.

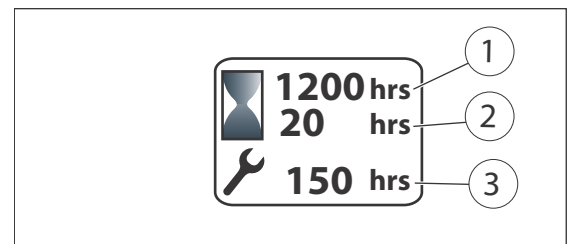


For more information on the error messages, see the chapter of maintenance "CUMMINS engine error codes" on page 122 .

Hour Meter

Description

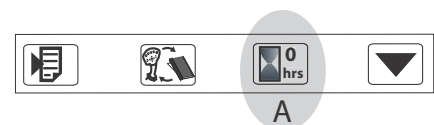
1. Total hours meter
2. Counter partial time
3. Hour Meter for maintenance



For more information on the maintenance of the self-propelled sprayer, see the chapter "Periodic Maintenance Sprayer" on page 86.

Reset the Hour Meter

At any time, you can reset the Hour Meter, by pressing the button (A) during few seconds.



Field Mode / Road

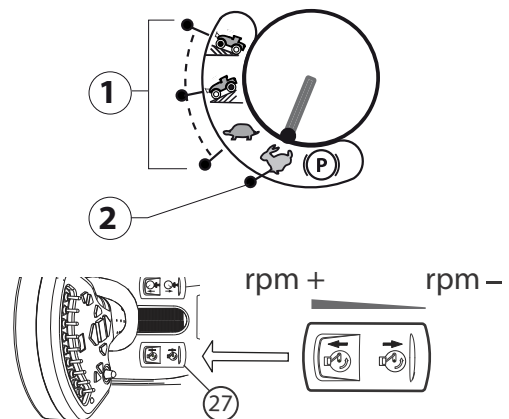
Selector Mode

The mode selection knob has 5 positions.

1. Mode [FIELD]
2. Mode [ROAD] - (automotive)

To change the engine speed in mode [field] you must act on the switch ref.27 on the console.

In the [road] mode the computer directly controls the engine speed depending on the position of the grip or of the pedal.



The responsiveness of the acceleration and deceleration of the self-propelled are predefined in the computer. For more information, see the chapter. "Driving mode" on page 51

Mode [Road] using the joystick

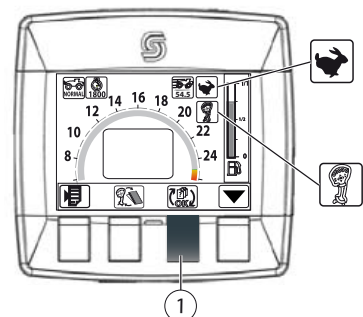
The sprayer travel is obtained by pushing the joystick forward for forward travel or pulling for reverse travel.


The engine speed varies according to the position of the grip.

Braking is achieved by pulling the grip toward the neutral point. The self-propelled is at a complete stop when the joystick is in the neutral position.

To use the ROAD mode

- Place the grip in the neutral position (ref.0), the engine then turns to idle
- Press the key ref.1 to select the mode [grip]. The grip symbol shows that mode [grip] is selected.
- Turn the speed selector switch to [road] mode the ref.2. The rabbit symbol shows in the display that mode [Road] is selected.
- Push the grip forward, or backwards to indicate the direction of the displacement ref.3

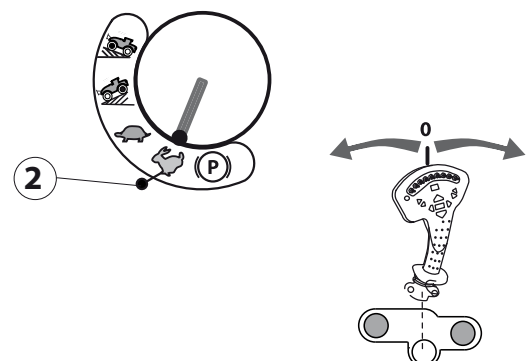


 In [Road] mode, if the grip is selected the pedal is inoperative.

 To change direction, first place the grip at the neutral point, and then push it again in opposite direction.

 To limit the speed in road mode, see the page 53.

 To preset the engine speed, see the page 52.



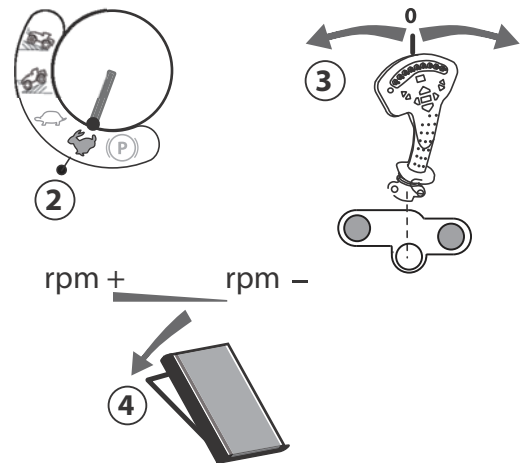
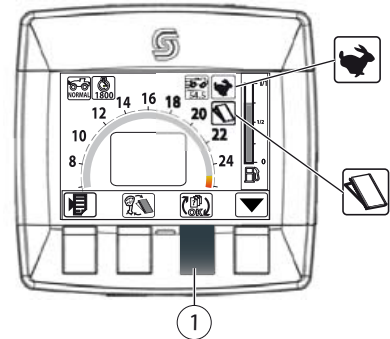
5 - Operation

[Road] mode using the foot pedal

The sprayer travel is obtained by pressing the pedal. The direction of travel of the self-propelled is obtained by pushing the joystick forward or by pulling it toward the rear.

Braking is achieved by either releasing the pedal up, or by putting the joystick in the neutral position.

- Place the grip in the neutral position ref.3.
- Press the key ref.1 to select the mode [foot]. The foot symbol shows that mode [foot] is selected.
- Turn the speed selector switch to [road] mode the ref.2. The rabbit symbol shows in the display that mode [Road] is selected.
- Push the grip forward, or backwards to indicate the direction of the displacement ref.2
- Gradually press on the pedal ref.4, to accelerate the motor and starts to move, depending on the position of the grip
- Release more or less the pedal to slow down the machine. The speed of the engine automatically adapts to the forward speed of the machine.
- Press the brake pedal to slow down and stop the machine.
-



i In [Road] mode, the maximum speed is 50 km/h. However the ground speed may be limited. For more information, see section "Restricting the speed of movement in [Road] mode" on page 53.



Braking is more or less effective depending on the pressure exerted on the brake pedal.



To change direction, first place the grip at the neutral point, and then push it again in opposite direction.



To limit the speed in road mode, see the page 53.



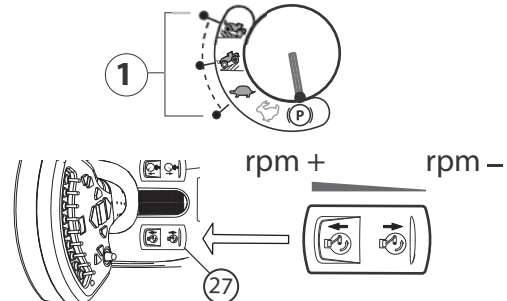
To preset the engine speed, see the page 52.

Mode displacement [field]

In the FIELD mode, the engine speed is set by using the switch on the instrument panel. In the FIELD modes the speed of the engine remains constant, regardless of the position of the joystick.

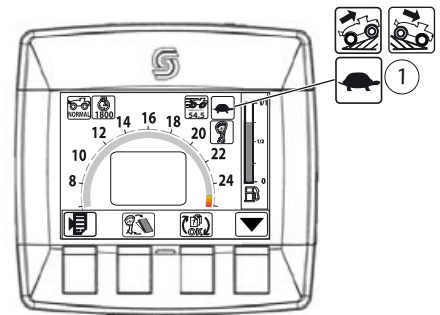
i The 3 selections modes (turtle-uphill-downhill) can be performed when the self-propelled is in motion. FIELD mode require a minimum engine speed of 1500 rpm for the transmission to give enough traction and braking torque.

- "TURTLE" mode. The transmission pump flow is evenly distributed in all the hydraulic motors. This flow is proportional to the position of the joystick.
- "UP" mode. In order to limit the slippage of the front wheels if travelling uphill, the displacement of the rear hydraulic motors is superior to that of the front motors.
- "DOWN" mode. In order to limit the slipping of the self-propelled travelling downhill, the displacement of the front hydraulic motors is superior to rear hydraulic motors.



To use one of the Field modes:

- Place the grip in the neutral position.
- Turn the speed selector switch ref.1 on one of the positions (Turtle-Up-Down), The display shows the current mode of use ref.1
- Press the switch rep 27 to accelerate the engine
- Push the joystick to obtain the desired travel speed.



i In mode [field], the maximum speed is 30 km/h. However the ground speed may be limited. For more information, see section "Restricting the speed of movement in mode [Field]" on page 53.



In the FIELD mode, before any movement, the engine rpm must be minimum of 1500 rpm, to allow a maximum use of traction and braking.



The passage between the modes 'Turtle', 'Up' or 'Down' can be performed with the vehicle rolling. It is not necessary to place the grip in the neutral position.

Braking

The braking of the machine is obtained in 2 ways:

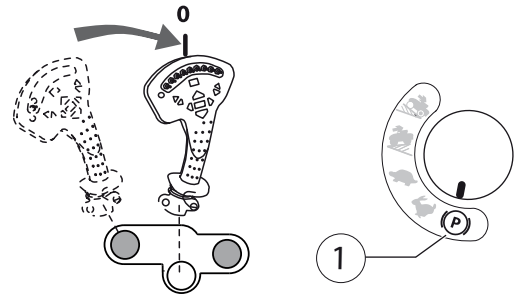
1. By pulling the joystick in the neutral point or by releasing the accelerator pedal (hydrostatic braking),
2. By pressing the brake pedal (dynamic braking).

5 - Operation

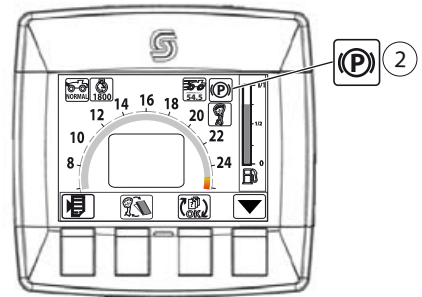
Parking brake

The parking brake is used to keep the machine at a standstill. To engage the parking brake:

- Pull the joystick in the neutral position to immobilise the self-propelled
- Turn the speed selector switch to the parking position.



1. The display indicates that the parking brake is engaged ref.2



When the parking brake is on, any action on the grip will not make the machine to move.

- Verify that the joystick is in the neutral position
- Turn the speed selector to [field] or [road], and then push the joystick to move the self-propelled

If the self-propelled is in motion and that the parking brake is engaged (selector on the position [P]), the braking is performed following a deceleration ramp up to the cancellation of flow of the pump and hydraulic motors.



The parking brake is very effective. Avoid engaging it when the machine is moving, except in an extreme emergency.



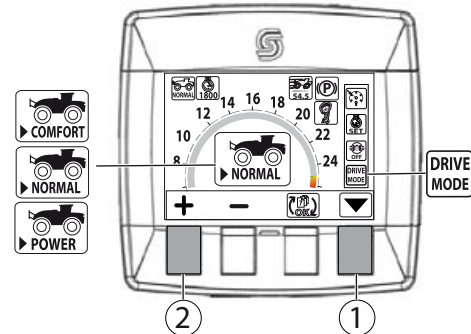
When the parking brake is engaged, the access ladder to the cab is automatically lowered, see the chapter "Driving mode" on page 51

Driving mode

The self-propelled SARITOR has 3 modes of conduct, which allows you to optimise the overall performance of the transmission (speed/torque, acceleration and progressive braking) depending on the variations and conditions of use.

The mode [COMFORT] is designed for a gradual acceleration of the self-propelled. The [NORMAL] has a quicker acceleration compared to the mode COMFORT. The [POWER] mode has a more instant reaction to the self-propelled and the fastest acceleration.

- Press the key ref.1 to select [DRIVE MODE]
- Press the key ref.2 to change the driving mode.



i The mode can be changed while driving.

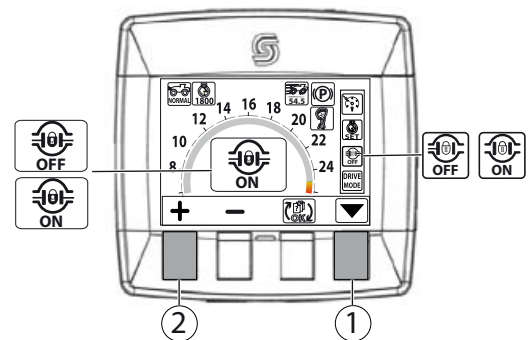
Traction Control System

Sensors built into the hydraulic motors constantly measure the speed of each wheel. A computer compares these speeds and if necessary operates a reduction in the hydraulic power in the current wheel slip.

To improve the control of the traction control system in the turns, the angular sensors placed on the front axle measure the turning angle of the wheels to allow the computer to optimise the traction control system.

The traction control function is operational only in the mode [field]

- Press the key ref.1 to select the traction control system
- Press the rep button. 2 To engage the traction control system

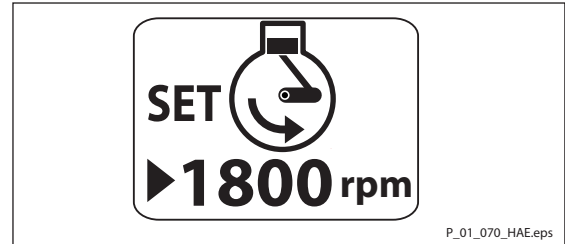


i Activation can be done while driving

5 - Operation

Preset the speed of the engine

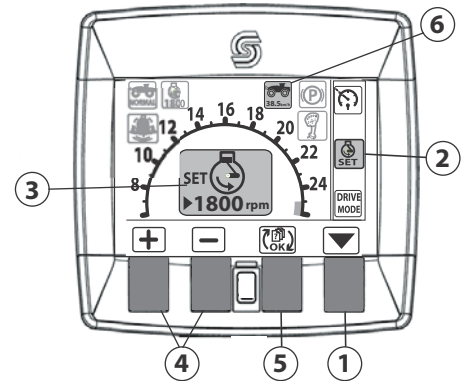
This feature allows you to optimise the power of the engine, while reducing fuel consumption. Preset the engine speed varies between 1200 rpm and 2500 rpm. This limitation applies only in mode [Field]



To change the value of the preset of the engine speed:

- Press 2 times on the push button ref. 1. The symbols ref. 2 and ref.3 show that the preset function of the engine speed is selected.
- Press the push-buttons ref.4 to increase or decrease the value, the steps are 100 rpm.
- Press the key ref.5 to save the value and return to the previous menu.

The symbol ref.6 indicates the value of the pre-adjustment of the engine speed.

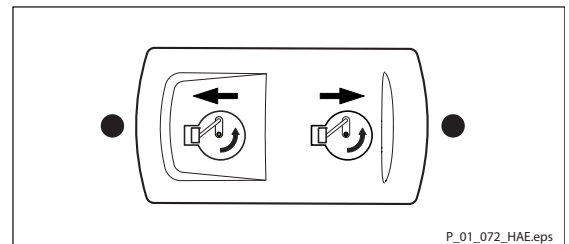


The fuel gauge reappears after 5 seconds of inactivity on the push buttons.

To disable the pre-setting the speed of the engine, it is sufficient to press the accelerator switch on the dashboard.



The default speed: 2500 rpm



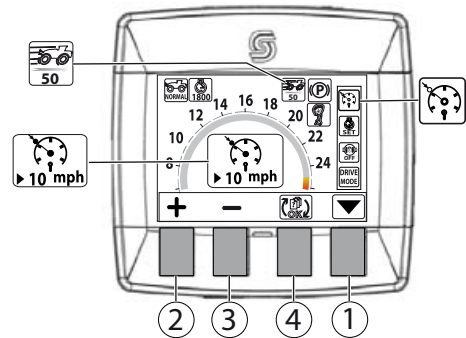
Restricting the speed of movement in mode [Field]

It is possible to limit the travel cruise mode [Field].

- Turn the speed selector switch on one of the 3 positions of the mode [Field] (turtle-uphill-downhill)
- Press the key ref.1 to select restricting the speed of movement
- Press the push buttons fig. 2 Or ref.3 to adjust the value
- Press the key ref.4, to validate the data.

Maximum Value = 30 km/h or 18 mph

Minimum Value = 3 rpm or 1.8 mph



The fuel gauge reappears after 5 seconds of inactivity on the push buttons.

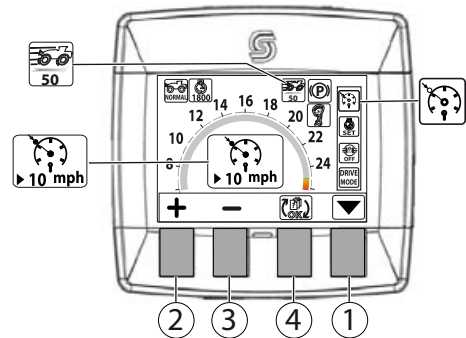
Restricting the speed of movement in [Road] mode

It is possible to limit the travel cruise mode [Road].

- Turn the speed selector switch on the mode [Road] (rabbit)
- Press the push button ref.1 to select restricting the speed of movement
- Press the push buttons ref. 2 Or ref.3 to adjust the value

Maximum Value = 50 km/h or 31mph

Minimum Value = 3 km/h or 1.8 mph

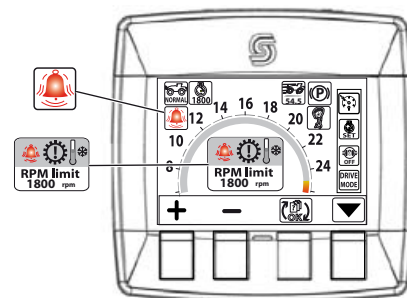


The fuel gauge reappears after 5 seconds of inactivity on the push buttons.

Limitation of engine speed - hydraulic oil temperature too low

When the temperature of the hydraulic oil is less than 30 degrees Celsius, the engine speed is limited to 1500 rpm, this is to protect the components of the hydraulic transmission

When the hydraulic oil temperature becomes greater than 30 degrees Celsius, the engine accelerates automatically to reach 2500 rpm, but the driving speed remains constant.



To return to the normal use of the system

- "FIELD" mode

Reduce the speed of the engine below 2200 rpm, and then push the joystick to return to the normal conditions of use.

- "ROAD" mode = (automotive) Pull the joystick toward the neutral point to reduce the engine speed below 2200 rpm, and then push the joystick to return to the normal conditions of use.

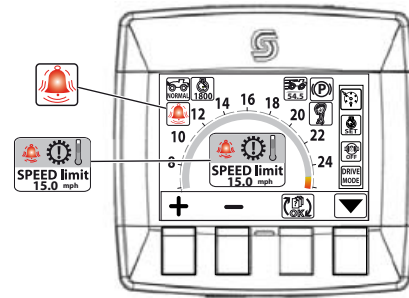
5 - Operation

Limitation of engine speed - hydraulic oil temperature too high

When the temperature of the oil in the transmission reaches 90 degrees celsius, the computer put the machine into limp mode.



Sprayer will stop if the hydraulic oil temperature reaches 95 degrees Celsius.



Engine management

Management of the system Anti-stall

This device avoids engine stalling if the power demanded by the transmission is higher than that supplied by the engine.

To prevent the engine from dropping below the threshold of normal operation, the displacement of hydraulic motors increase, then the displacement pumps will be reduced.

When the anti-stall feature is enabled, the ground speed decreased slightly compared with the normal operation of the self-propelled

Management of the engine overspeed

This feature allows that the transmission does not accelerate the engine beyond a maximum speed bearable during a hydrostatic deceleration.

If the engine speed value exceeds a specified threshold, the displacement of the engines and then decrease the displacement pumps return more slowly to the neutral point.

When the overspeed function is enabled, the hydrostatic braking is less effective in relation to the normal operation of the self-propelled.

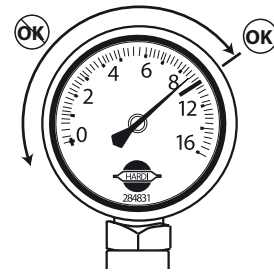


The management of the engine overspeed is not active when the brake pedal is used.

Air Suspension

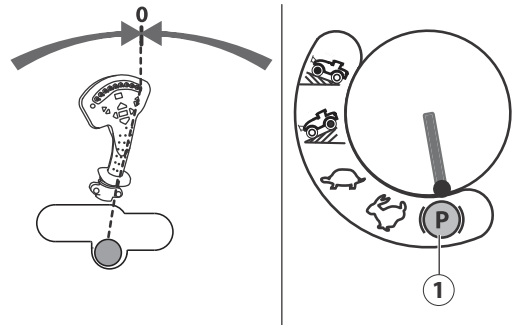


Before traveling, wait until the air suspension is operational. A pressure gauge installed on the outside of the cab indicates the pressure in the circuit. The value must be between 9-10 bar (130-145 psi). To adjust the air pressure, see the chapter. "Compressed air pressure adjustment" on page 98



Stopping the engine

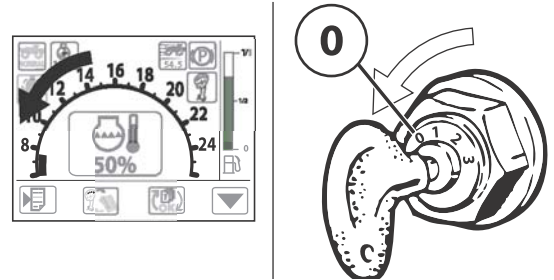
- Place the grip in the neutral position (ref.0) to immobilise the self-propelled, and then turn the gear selector on the parking brake position (ref.1).
- Reduce the engine speed for a few seconds to slow down the turbocharger and stabilise the engine temperature.
-



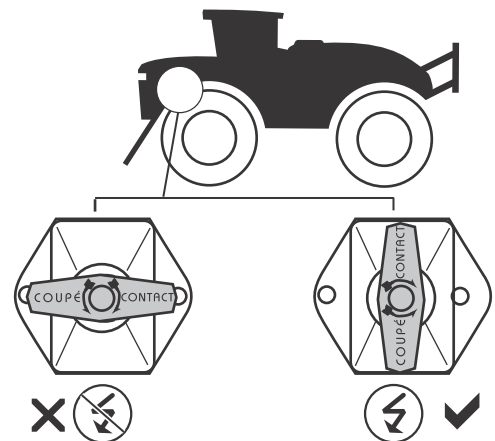
- Turn the ignition key to position 0 to shut down the engine.



When the engine is stopped the access ladder to the cab is automatically lowered.



- Turn the battery handle switch to cut off power to the electrical and electronic circuits and thus prevent the discharge of the battery during the prolonged shutdown of the machine.

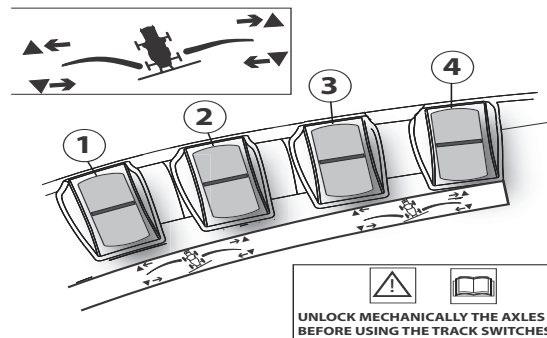


5 - Operation

Track width adjustment

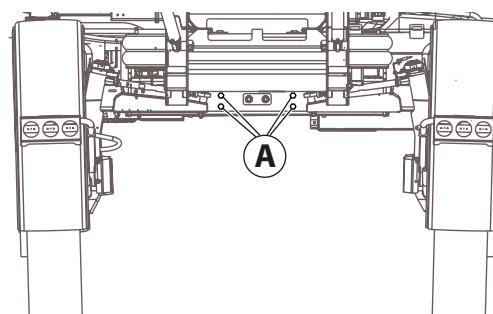
The track of the front axle and rear of the machine is adjustable. The maximum variation of the track is 1.00 meter, and the distance of the tire in relation to the frame of the machine is adjustable independently.

1. Left Front Wheel
2. Right Front Wheel
3. Left Rear Wheel
4. Right Rear Wheel

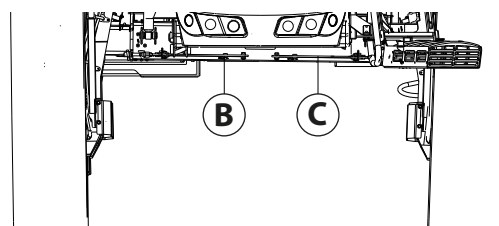



 Before pushing the track variation switches (1-2-3-4), it is important to follow procedure

- Loosen the screws (A) located on front and rear axles (only if equipped)




- Remove the pin (B) from the rule (C) and take place it to obtain the correct track.



 The adjustment of the track is preferably be carried out in the field, in the absence of deep rut and at a low speed of travel

- Press and hold the switches to move the axles until it stops
- After adjustment of the track, tighten the screws (A).

 To prevent imbalances of the machine, the wheel spacing must be identical in relation to the axis of the machine.

 2 types of rules are available (METRIC -P/N 61024501) or IMPERIAL - P/N 61025901)

Tracks obtained according to the tires

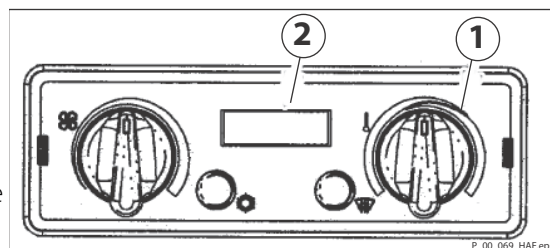
Size Tires	Minimum Track MM / (in)	Track Maximum MM / (in)
380/90R50 (14.9R50)	3000 (118.1)	4000 (157.4)
480/80R50 (18.4R50)	2997 (118)	3997 (157.3)
520/85R46 (20.8R46)	3057 (120.3)	4057 (159.7)
620/70R42 (24.5R42)	3181 (125.2)	4181 (164.6)

Cabin ceiling controls

Control Module of the ATC air conditioning

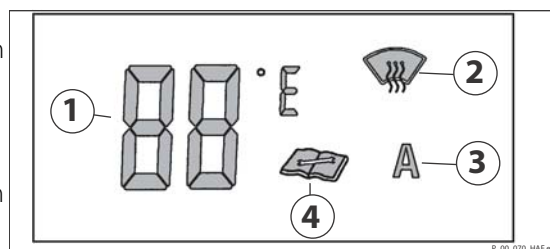
Automatic Temperature Control (ATC)

1. Temperature control in the cab
 - Turn the rotary knob ref. 1 In a clockwise direction to increase the temperature, or in the opposite direction to lower the temperature in the cab
2. Controller



The display allows you to view the information, in particular:

- The display of the desired temperature in the cab to the degree Celsius or Fahrenheit - ref.1= (see "Selection of temperature unit" on page 42)
- The modes of operation. The symbol 'A' ref.3 indicates that the system is in automatic mode. In this case the water valve and the compressor are commands automatically in such a way to maintain the desired temperature. Otherwise, if the letter 'A' is not displayed on the screen, this means that the fan speed is controlled manually.
- Displaying the symbol ref.2 indicates that the window fogging is in operation.
- Displaying the symbol ref.4 indicates a fault of operation of the ATC system¹. A diagnostic code linked to the default spin button to facilitate troubleshooting.
- The ATC operates in the temperature range between 16 °C (61 °F) and 30 °C (90 °F).

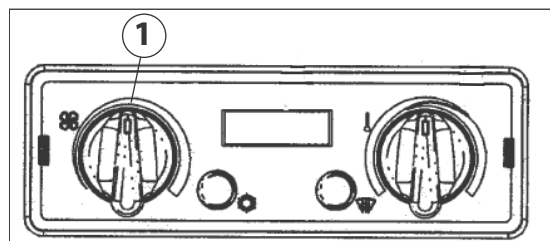


i The symbol ref. 3 is not displayed when the programmed temperature is minimum or maximum.

Ventilation Control

You can increase or reduce the ventilation by turning the rotary button ref. 1.

- Turn the rotary knob ref.1 clockwise to increase the air flow of components placed at the top of the cab



i The automatic control of the air conditioning (ATC) will vary the speed of the ventilation, in such a way as to maintain the required temperature in the cab

If the ATC mode is engaged and as you turn the knob rep 1, the ATC mode is disabled to go to manual mode. The symbol 'A' disappears.

To re-engage the ATC mode, you need to toggle the ATC switch OFF and then ON to reset the automatic mode. The automatic temperature control works even if the symbol 'A' is displayed or not.

When the automatic air conditioning function or demisting is in operation, the ventilation increases to obtain a temperature difference of 2 °F between the set temperature and that measured in the cab

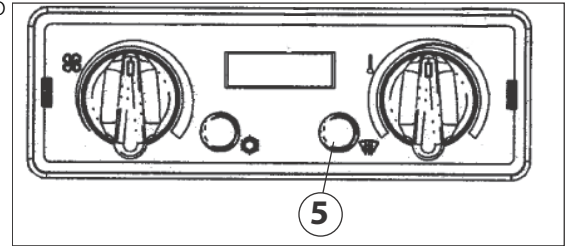
When the evaporator sensor senses a temperature below 26 °C (80 °F), and that the system request to heat, the fan speed does not increase, as long as the temperature of the evaporator will not increased.

1. ATC - Automatic Temperature Control

5 - Operation

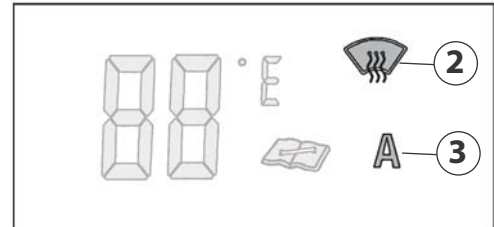
Operating mode

Once you have activated the ATC mode, you can press the switch ref.5 to switch the AUTO mode and the defog mode.



In the automatic mode, the system heats or cools the air to maintain the desired temperature in the cab. In this mode, the display shows the symbol ref. 3.

In defog mode, the air conditioning compressor operates full-time, and the air is warmed up to promote the demist the windows. In this mode, the display indicates the symbol ref.2.

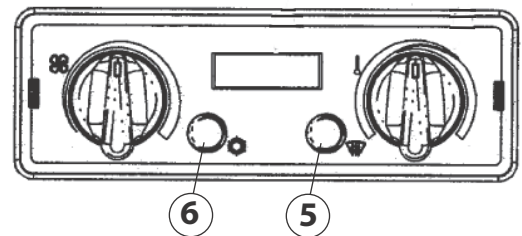


The Command window demisting

The demist the windows useful the air conditioning to reduce the moisture in the air for the purpose of drying the windows of the cab.

- Press the switch ref.6 to activate the AUTO mode.
- Toggle the switch ref.5 on the defog mode of the windows.

The display shows the symbol ref.2.



The temperature control knob can be adjusted to the desired value. If the temperature of the air in the cabin is too cold, the temperature control knob can be rotated in a clockwise direction to allow for an increase in the hot air. The temperature in the cab is controlled by a probe measuring the recycling of air, while maintaining the temperature requested by means of a heater valve. During the operation of demisting the windows, the a/c compressor is running continuously, except if the evaporator probe detects that it is too cold, which may result in an early deposit of ice.

The computer of the ATC automatically regulates the speed of the fan to maintain the required temperature in the cab. It is normal that the temperature of the air at the start in the morning is more cold, caused by the engine still cold. If you reduce the fan speed, during the heating of the engine, the computer of the ATC will disable the automatic mode of adjustment of fan speed. To re-engage the automatic mode of the adjustment of fan speed, the switch of the ATC must be toggled OFF and then ON to reset the automatic mode.

Operational problems

An error code is displayed, if a malfunction is shown on the air conditioning system. For more information on the errors, see the chapter on the "Cabin error codes" on page 121

Wipers

Switch of the wipers

- Market Position (continues)
- Market Position (intermittent)
- OFF Position



Window Washer

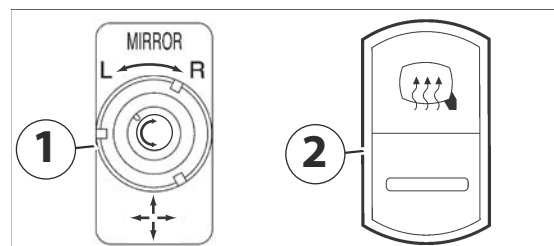
Switch window washer

- Market Position
- OFF Position



Exterior mirrors to electrical control

1. Wing mirror adjustment switch
 - Left Arrow, command of the mirror on the left side
 - Right Arrow, command of the right side mirror
2. Defog Switch mirrors ref.2



5 - Operation

Boom

Safety info



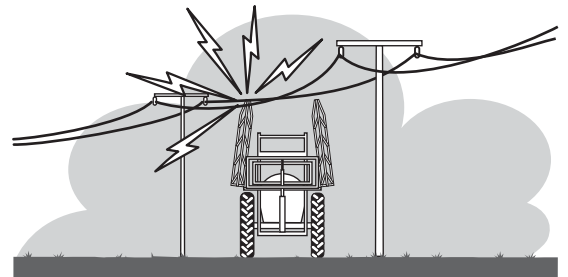
WARNING!

- The boom must not be folded/unfolded while driving!
- Never use the folding/unfolding functions before the sprayer has been stopped! FOLDING THE BOOM WHILE DRIVING WILL DAMAGE THE BOOM.



DANGER!

- Before unfolding the boom it is important to connect the sprayer to the tractor to prevent overbalancing of the sprayer
- When folding or unfolding the boom, make sure that no persons or objects are within the operating area of the boom.
- Always follow the guidelines listed below when driving in areas with overhead power lines:
 - Never use the folding/unfolding functions in areas with overhead power lines.
 - Unintended boom movements may cause contact with overhead power lines.



ATTENTION!

- A label (ref. no. 978448) follows the sprayer. This label must be placed in the cabin visible from the operator's seat.
- Only unfold and fold the boom on level ground.

Operating the boom



WARNING!

- The centre lock is automatically activated when pressing one of the folding buttons. Boom folding is not possible if the centre is unlocked. A manual override of the centre lock is possible by activating switches 2 or 3.
- Only operate the folding functions when the sprayer is stationary! Failure to do so may damage the boom. The centre lock automatically opens at speeds exceeding 0.5 km/h



ATTENTION!

- If a folding sequence is not completed, a warning message will ask you to complete this sequence before starting next sequence.
- Only buttons relevant for boom functions are mentioned here. Refer to "Boom" on page 10 for descriptions of other buttons.

Operating the boom control on Saritor



ATTENTION! The centre locks automatically when pressing 2nd outer folding button.



ATTENTION! The pendulum lock automatically opens at speeds exceeding 1.5 km/h!



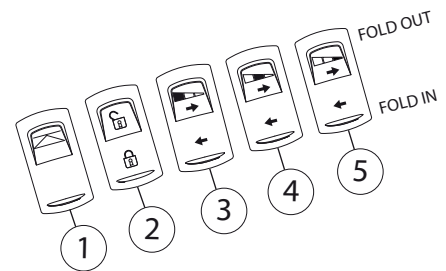
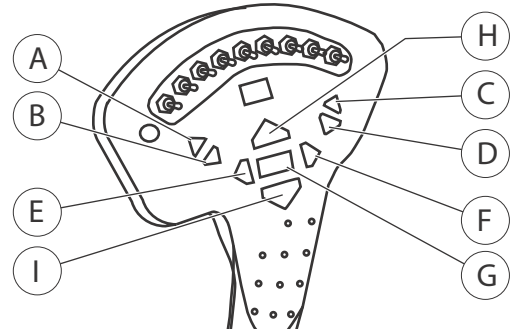
Warning carefully follow steps below in order. Failure to do so may damage the boom and sprayer.

To unfold the boom



WARNING! Carefully follow steps below in order. Failure to do so may damage the boom and sprayer.

1. On the grip press the boom lift up button (H). Check that the centre locked symbol is visible in the display
2. On the grip press + hold button (A) and then (C) to tilt boom up until it's clear from the transport brackets.
3. On the console press + hold the button (3) to unfold the inner wings completely.
4. On the grip press + hold button (B) and (D) to tilt boom wings down until it is straight.
5. On the console press + hold the button (4) to unfold the 1st outer wing until it is completely out, make sure that the wing locks has engaged and that the fold cylinders is fully extended.
6. *Only if equipped with B3 and TDZ. On the console, press+ hold button (5) to unfold 2nd outer wing until it is completely out make sure the fold cylinder is fully extended.
7. On the grip press + hold button (I) to lower the boom until it rest on the paralift locks.
8. Press button (2) to unlock the centre, symbol appears in display until centre is unlocked. This takes approximately 10 seconds.




5 - Operation

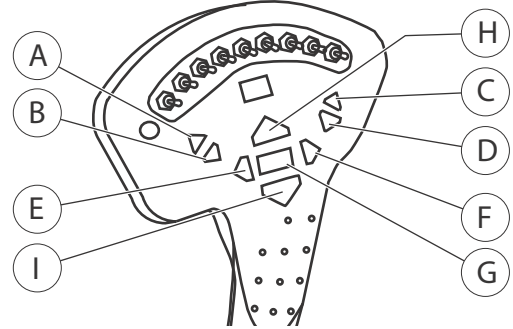
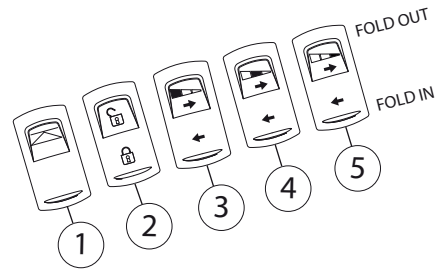
Operating the boom control on Saritor

To fold the boom



Warning carefully follow steps below in order. Failure to do so may damage the boom and sprayer.

1. Press and hold buttons (4) to automatically set the centre to horizontal position (AutoTerrain only). If not equipped with AutoTerrain use button (E) and (F), until the centre is horizontal.
2. Press button (2) to lock the centre. The symbol  appears in display until pendulum is locked. This takes approximately 10 seconds.
3. On the grip press the boom lift button (H) to raise the boom to the highest possible position.
4. *Only if equipped with B3 and TDZ. On the console press + hold the button (5) to fold the 2nd outer wing until it is resting on the wing support.
5. On the console press + hold the button (4) to fold the 1st outer wing until it is resting on the wing support.
6. On the grip press button (A) and (B) to raise the tilt to around 10 degree angle
7. On the console press + hold the button (3) to fold the inner wing until the boom touch the side post. Make sure it will pass the transport brackets, if not press button (A) and (C) to tilt the boom up.
8. On the grip press + hold button (B) and (D) to tilt boom down into the transport rests
9. On the grip press button (I) to lower the centre until the paralift transport locks lock.



Hydraulic slanting control

The hydraulic slanting control (E) and (F) is used to incline the entire boom. This function is particularly useful when spraying on slopes.

Always reset position to neutral (middle) before folding the boom.

Boom tilt function

The tilt adjustment (buttons (A),(B) (C), (D) can change the inclination of the boom individually on the left or right.

Alternative boom widths

The boom can also be used partially-folded. If applicable, only unfold the inner wing or inner and 1st outer wing. On the grip unit deactivate spray sections, that should not be used.

Liquid system

Filling/washing location requirements

When filling the sprayer with chemicals and water it is important to avoid spot contamination by spray chemicals in order to protect the subsoil water resources.

- A. If the sprayer is always filled at the same place, a special filling/washing location should be established. This should have a hard, liquid-impenetrable surface (e.g. concrete) and edges securing against run-off to the surrounding areas. The place should be drained to an adequate receptacle (e.g. slurry tank or similar).

Any spillage or washings should be retained and diluted in order to be distributed on a larger area to ensure minimal environmental impact and avoid build-up of larger chemical concentrations at one spot.

If no other requirements of distances exist, the following general recommendation of distance could be used. Not closer than:

- 1) 50 metres from public water supplies for drinking purposes,
- 2) 25 metres from non-public water supplies for drinking purposes and from treatment sumps and cesspools of drainage systems, and
- 3) 50 metres from surface water (watercourses, lakes and coastal waters) and from nature reserves.

- B. Alternatively the sprayer can be filled in the field where the spraying is to take place. If so, choose a different location for each refilling.

If no other requirements of distances exist, the filling should not take place closer than:

- 1) 300 metres from public or non-public water supplies for drinking purposes and
- 2) 50 metres from surface water (watercourses, lakes and coastal waters), treatment sumps, cesspools of drainage systems, and nature reserves.



ATTENTION! Legislation and requirements vary from country to country. Always follow local legislation in force at any time.



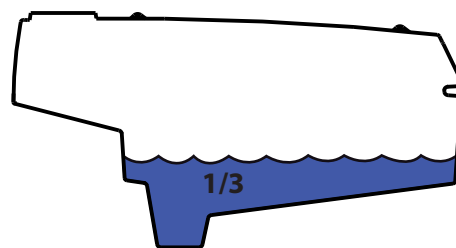
NOTE! It is the responsibility of the sprayer owner/operator to comply with all relevant legislation. HARDI cannot undertake any responsibilities for incorrect operation and use.

Filling of water

Tank should normally be filled 1/3 with water before adding chemicals. Always follow instructions given on the chemical container!



WARNING! If the sprayer is put aside with liquid in the main tank all MANIFOLD valves must be closed.



5 - Operation

Tank Filling

Filling options	Main Tank Filling	Flush Tank Filling	Filtered Fill
Filtered Fast Fill System	yes	yes	yes
Banjo Filtered Fast Fill System (optional)	yes	yes	yes
Venturi Fast Fill system	yes	no	no

Filtered Fast Fill System

The 'Filtered Fast Fill' option allows the operator to fill the sprayer from an external water source (such as a dam or tank) using an auxiliary pump. It can be located on side of the sprayer, or in the front of the sprayer or on both places. The side fill can be used to fill either main tank or flush tank. The front fill can only be used to fill main tank. The system includes a Cam-Lock coupling on the inlet and a high capacity in line filter.



WARNING! If a high capacity pump is used open the tank lid before filling, be prepared to quickly turn off the pump and valve when the tank is full, otherwise there is a risk of overfilling causing structural damage to the tank.

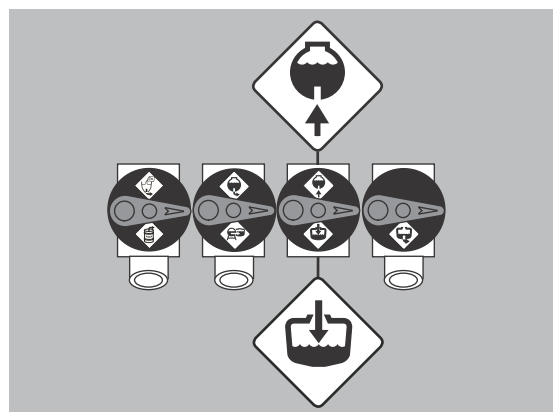
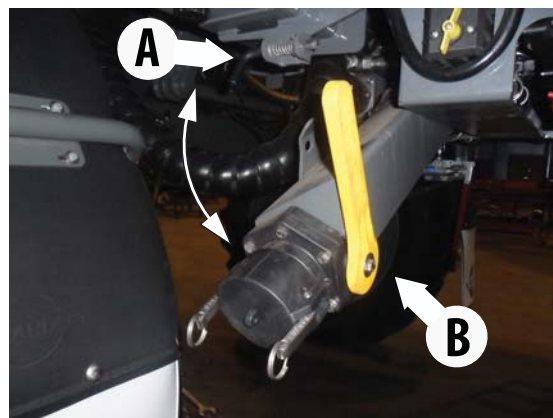


WARNING! Do not leave the sprayer whilst filling the tank and keep an eye on the level indicator in order NOT to overfill the tank.



ATTENTION! The Filtered FastFill system should only be filled with clean water, and filter should be cleaned regularly

1. For easy filling the fluid refill arm (B) can be lowered, to do so release locking pin (A) at same time pull the arm down.
2. Remove the cap from the Cam Lock and connect the hose.
3. Start the water supply or remote fill pump that will be connected to a clean water supply.
4. Turn the valve towards Main tank or flush tank depending what you need to fill.
5. Fill tank to required volume, The operator can also control the speed at which is filling takes place by adjusting the fill valve (B).
6. When filling is finished, close valve (B)
7. Turn off water supply or remote fill pump.
8. Disconnect hose if required, fit the cam-lock cap and lift the fluid refill arm to transport position.



WARNING! After filling ensure that the fluid refill arm is upper position and the lock is engaged.



Attention: Only fill the rinse tank with clean water. To avoid algae developing, always drain the rinse tank if the sprayer is not used for an extended period of time.

Banjo Filtered Fast Fill System (Optional)

The Banjo Filtered Fast Fill System employs a high capacity centrifugal pump driven by a hydraulic drive motor. (The motor is powered by the sprayers hydraulic system).

The 'Filtered Fast Fill' option allows the operator to fill the sprayer from an external water source (such as a dam or tank) using the banjo pump. It can be used to fill either main tank or flush tank. The system includes a Cam-Lock coupling on the inlet and a high capacity in line filter.



WARNING! Do not leave the sprayer whilst filling the tank and keep an eye on the level indicator in order NOT to overfill the tank.



ATTENTION! The Quick Filtered Fill system should only be filled with clean water, and filter should be cleaned regularly

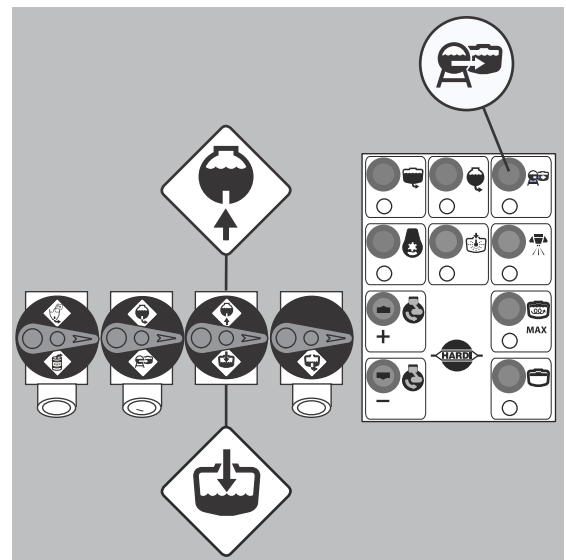
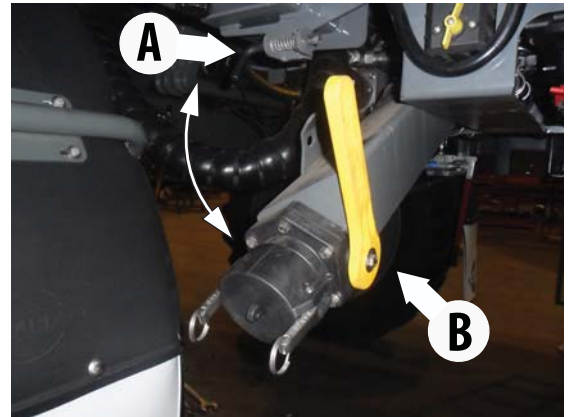
1. For easy filling the fluid refill arm (B) can be lowered, to do so release locking pin (A) at same time pull the arm down.
2. Remove the cap from the Cam Lock and connect a suction hose to a water source.
3. Open the valve.
4. Start the Banjo pump from control panel.
5. Adjust the flow rate by via the motor accelerations buttons located on the control panel.
6. When filling is done close the valve and fit the cam-lock cap and lift the fluid refill arm to transport position.



WARNING! After filling ensure that the fluid refill arm is upper position and the lock is engaged.



Attention: Only fill the rinse tank with clean water. To avoid algae developing, always drain the rinse tank if the sprayer is not used for an extended period of time.



5 - Operation

Venturi Fast Fill system

The Venturi Fast Fill option uses an on-board venturi system to draw water directly from an external source.

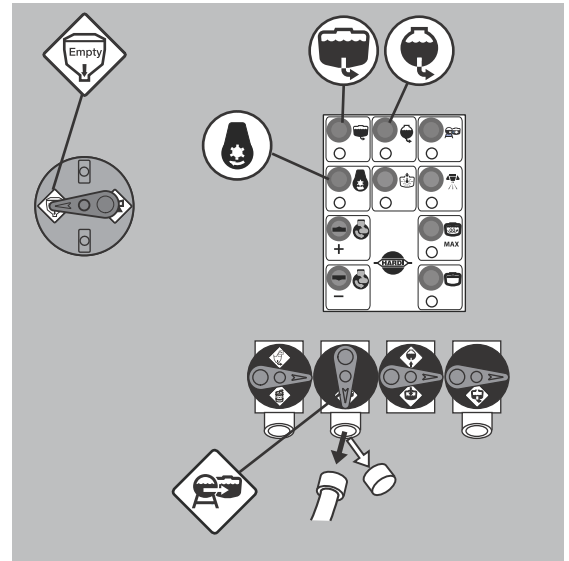


ATTENTION! The Fast Fill circuit does not include a filter or strainer! It is highly recommended you use a remote in line filter to remove any debris and impurities. For more information please contact your HARDI dealer.



WARNING! Do not leave the sprayer whilst filling the tank and keep an eye on the level indicator in order NOT to overfill the tank.

1. Remove the cover from the aluminium Quick coupler and connect a suction hose with the other end connected to an external source.
2. Open the Main Tank Valve from the control panel.
3. Turn on the Main Fluid Pump from the control panel.
4. Turn the Chemfiller/Ejector Valve towards TurboFiller mix.
5. Turn the Chemical Induction Valve towards suction from external source.
6. Keep an eye on the main tank level indicator to prevent over filling.
7. To stop filling close the Chemical Induction Valve, disconnect the suction hose and replace the quick coupling dust cover.
8. Close the Main Tank Valve.
9. Turn off the Main Fluid Pump from the control panel.
10. Close the Chemfiller/Ejector Valve by turning it so the arrow on the valve is facing up.



Filling of Rinse tank

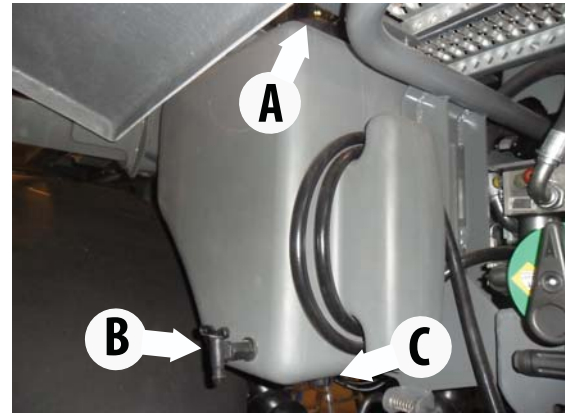
Please see: Filter Fast Fill on page 64

Filling of clean water tank

A clean water tank is fitted below the platform in the fluid working zone on the sprayers left side. To fill the clean water tank remove lid (A) is accessible from upside of the platform. Fill with clean water and reposition tank lid. To tap water from the clean water tank use valve (B) The water from this tank is for hand washing, cleaning of clogged nozzles etc. Only fill the clean water tank with clean water from the well. To drain the clean water tank remove lid (C) and reposition the lid.



WARNING! Although the clean water tank is only filled with clean water, this water must never be used for drinking.



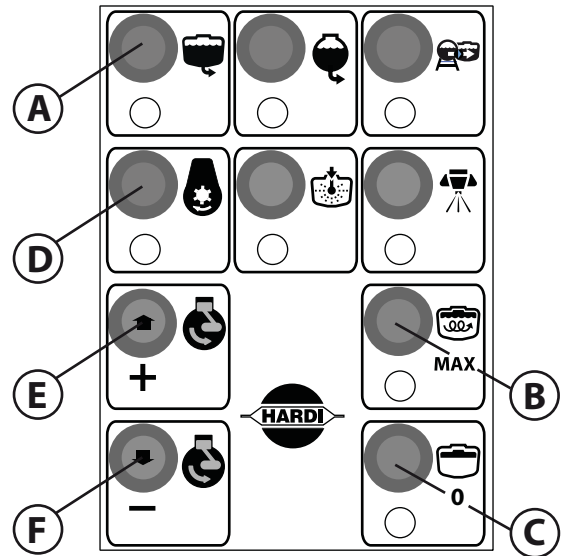
5 - Operation

Agitation

The agitation in the Main Tank can be controlled from the work zone beside the Self propelled sprayer on the external control panel. It can also be controlled from the cabin

For controlling the agitation (on/off) on the external control panel.

- For turning on the agitation press button (B)
- For turning off the agitation press button (C)



For controlling the agitation from the cab:

1. Press the switch (1) to modulate the agitation of the liquid in the main tank



Too much agitation may cause foam in the tank. The amount of foam depends on what type of chemicals is being used and how much water it is in the tank. Agitation should be adapted according to the volume of the liquid in the main tank.

Agitation before re-starting spraying

If a spraying job has been interrupted for a while, severe sedimentation can occur depending on chemicals being used. When re-starting spray job it might be necessary to agitate homogenise the liquid.

1. Press electric Main Tank Valve (A) on the external control panel, to turn it on.
2. Engage the spray pump (D)
3. Adjust the engine rpm by pressing the (E) and (F) buttons
4. For turning on the agitation press button (B)
5. Agitation has started and should be continued for at least 10 minutes.
6. Press Button (C) for turning off the agitation.

Agitation when filling with chemicals

When filling with chemicals from TurboFiller or chemical drum the agitation must be turned to max to homogenise the liquid.



Attention! When filling with dry crop protection via the turbofiller the mixing process has to be done in the turbo filler not in the Main Tank!. See chapter Chemical filling page 69 how to fill with chemicals. If chemicals has not been mixed enough in the TurboFiller it will sink to bottom in the Main Tank regardless of agitation.

Chemical Filling

Safety precautions - crop protection chemicals



WARNING! Always be careful when working with crop protection chemicals!



WARNING! Always wear correct protective clothing before handling chemicals!

Personal protection

Depending on chemical type, protective gear /equipment should be worn to avoid contact with the chemicals, e.g.:

- Gloves
- Waterproof boots
- Headgear
- Respirator
- Safety goggles

Chemical resistant overall



WARNING! Protective clothing/equipment should be used when preparing the spray liquid, during the spray job and



WARNING! When cleaning the sprayer. Follow the chemical manufacturer's instructions given on the chemical label.



WARNING! It is always advisable to have clean water available, especially when filling the sprayer with the chemical.



WARNING! Always clean the sprayer carefully and immediately after use.



WARNING! Only mix chemicals in the tank according to directions given by the chemical manufacturer.



WARNING! Always clean the sprayer before changing to another chemical.

5 - Operation

Filling chemicals via the TurboFiller

Chemical filling can be done via the TurboFiller or by using the Chemical Induction valve to draw chemicals from a batch plant.



DANGER! Do not press lever unless the multi-hole nozzle is covered by a container to avoid spray liquid hitting the operator.



ATTENTION! Rinsing device uses spray liquid to rinse containers for concentrated chemicals. Always rinse the chemical containers with clean water several times until they are clean before disposal.



ATTENTION! The hopper rinsing device is using spray liquid for rinsing the hopper for concentrated chemical! The FILLER must always be cleaned together with the rest of the sprayer with clean water when the spray job is done.

Procedure

1. Fill the Main Tank at least 1/3 with water (unless something else is stated on the chemical container label).
2. Press electric Main Tank Valve on the external control panel, to turn it on.
3. Turn on the ChemFiller/Ejector valve to TurboFiller. This will activate the TurboFiller.
4. Turn on the Spray Pump from the external control panel.
5. Increase the engine rpm if needed.
6. Open the TurboFiller lid. Open the TurboDeflector valve.



DANGER! Always wear face shield and other appropriate personal safety equipment when filling chemicals.

7. Turn the Vacuum source Valve to TurboFiller empty. The chemicals will now be drain from the TurboFiller into the Main Tank.
8. Measure the correct quantity of chemicals and slowly sprinkle it into the outside of the vortex in the hopper. Make sure not to put in more chemicals than the hopper can mix and flush down.



If chemicals has not been mixed enough in the turboFiller the chemicals may sink to bottom in the Main Tank regardless of agitation.



ATTENTION! The ruler graduated in the hopper can only be used if the sprayer is parked on level ground! It is recommended to

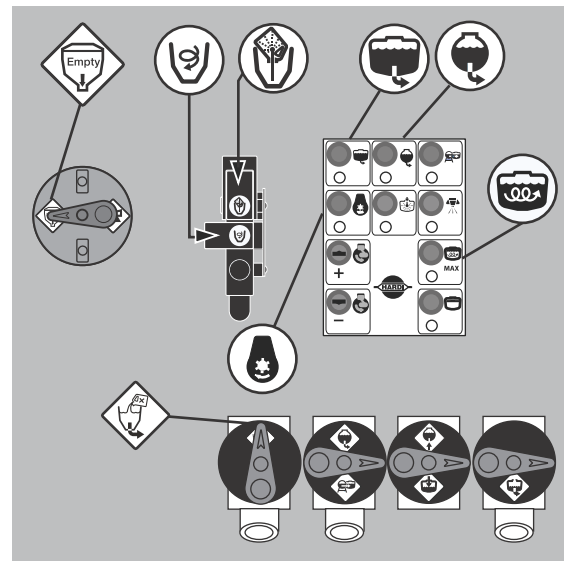
use a measuring jug for best accuracy.

9. If the chemicals container is empty it can be rinsed by the Chemical Container Cleaning device. Place the container over the multi-hole nozzle and push the upper lever to the left of the TurboFiller.



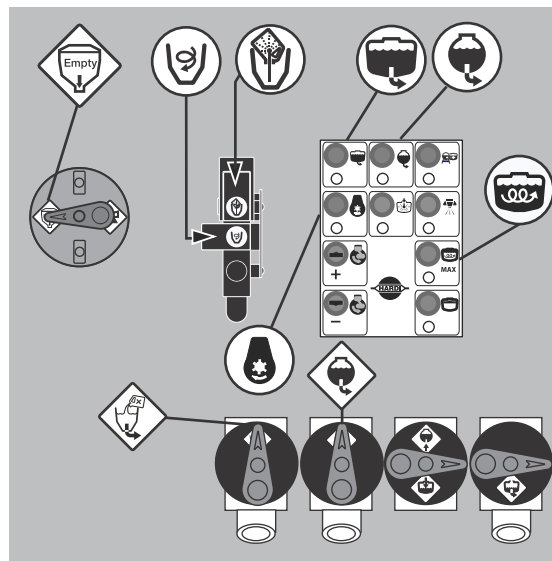
DANGER! In order to avoid spray liquid hitting the operator, do not press lever unless the multi-hole nozzle is covered by a container as spray liquid may otherwise hit the operator.

10. Close the TurboFiller lid again.



Rinsing TurboFiller

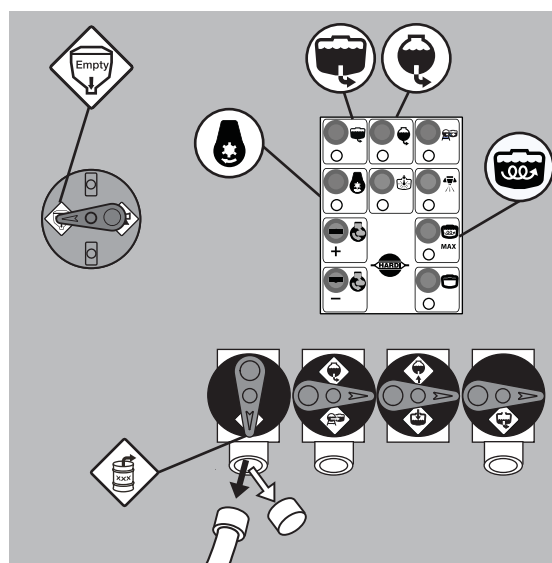
11. Turn off the Main Tank Valve from the external control panel.
12. Turn on the Flush Tank Valve from the external control panel.
13. Rinse the TurboFiller by using the control valves on the TurboFiller, and then turn them off.
14. Turn the Vacuum Source Valve to TurboFiller empty (If it was turned off). The chemicals will now be drain from the TurboFiller into the Main Tank.
15. Turn off the Flush Tank Valve from the external control panel.
16. Turn off the Chemical Induction Valve.
17. Continue filling the Main Tank.



ATTENTION! The TurboFiller needs to be cleaned thoroughly after finishing spraying again to be sure it is clean before spraying other crops that may be sensitive to the chemicals just used. See section "Cleaning" on page "D. Full internal cleaning (Soak wash)" on page 79 for details.

Filling chemicals via a chemical drum

1. Remove the cam lock cover from the Chemical Induction valve
2. Attach a suction hose onto the cam lock at the Vacuum Source Valve with the other end connected to an external chemical source.
3. Turn on the ChemFiller/Ejector valve to TurboFiller.
4. Press electric Main Tank Valve on the external control panel, to turn it on.
5. Turn on the Spray Pump from the external control panel
6. Increase the engine rpm if needed.
7. Turn the Chemical Induction Valve to direct suction from External source. The chemicals will now be transferred into Main Tank.



Rinsing after using the chemical induction valve

8. Turn off Chemical Induction Valve
9. Disconnect the suction hose from the chemical source
10. Connect the suction hose to a clean water source
11. Turn on the Chemical Induction Valve again to clean the hose and valves.
12. Turn off both the Chemical Induction Valve and the Chemfiller/Ejector valve
13. Disconnect the suction hose and fit the cam lock cover
14. Continue filling the Main Tank.

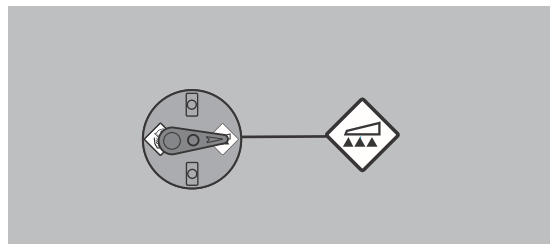


ATTENTION! The TurboFiller needs to be cleaned thoroughly after finishing spraying again to be sure it is clean before spraying other crops that may be sensitive to the chemicals just used. See section "Cleaning" on page "D. Full internal cleaning (Soak wash)" on page 79 for details.

5 - Operation

Prepare self propelled sprayer for Spraying

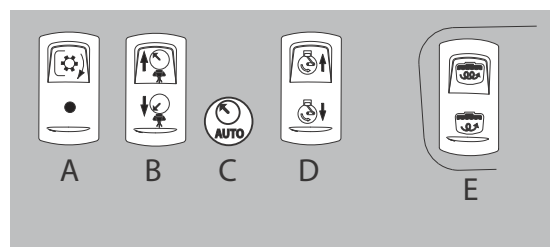
1. Before entering the cabin turn the Ejector Spray valve to Spray position. The rest of the functions for spraying can be controlled from the cabi



Spraying controls from the cab

The functions for spraying can be controlled from the control panel of the cab.

1. Turn on the Main Fluid Pump (A)
2. Adjust the engine rpm by pressing the switch (B)
3. Press the button the button (C) to engage the automatic mode
4. Press the switch to disengage the Automatic Variable Rate Application
5. Press the button (E) to select manually the level of the agitation

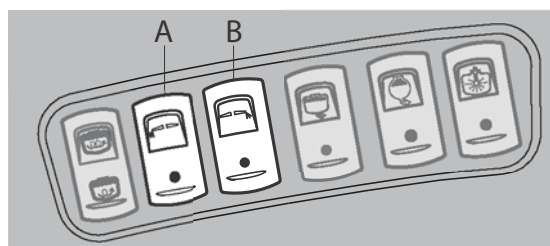


For detail on using this function, refer to the HC6500 instruction book

Electrically controlled end nozzle (optional)

The boom can be fitted wit end nozzles.

1. Press the switch (A) to operate the end nozzle on the left side of the boom.
2. Press the switch (B) to operate the end nozzle on the right side of the boom.



For detail on using this function, refer to the HC6500 instruction book

Cleaning

General information

In order to derive full benefit from the sprayer for many years the following service and maintenance program should be followed.



ATTENTION! Always read the individual paragraphs. Read instructions for service/maintenance jobs carefully before starting on the job. If any portion remains unclear or requires facilities which are not available, then for safety reasons please leave the job to your HARDI dealer's workshop.



ATTENTION!

Clean sprayers are safe sprayers.

Clean sprayers are ready for action.

Clean sprayers cannot be damaged by pesticides and their solvents.

Guidelines

1. Read the whole chemical label. Take note of any particular instructions regarding recommended protective clothing, deactivating agents, etc. Read the detergent and deactivating agent labels. If cleaning procedures are given, follow them closely.
2. Be familiar with local legislation regarding disposal of pesticides washings, mandatory decontamination methods, etc. Contact the appropriate department, e.g. Dept. of Agriculture.
3. Pesticide washings can usually be sprayed out on a soakaway. This is an area of ground that is not used for cropping. You must avoid see page or run off of residue into streams, water courses, ditches, wells, springs, etc. The washings from the cleaning area must not enter sewers. Drainage must lead to an approved soakaway.
4. Cleaning starts with the calibration, as a well calibrated sprayer will ensure the minimal amount of remaining spray liquid.
5. It is good practice to clean the sprayer immediately after use and thereby rendering the sprayer safe and ready for the next pesticide application. This also prolongs the life of the components.
6. It is sometimes necessary to leave spray liquid in the tank for short periods, e.g. overnight, or until the weather becomes suitable for spraying again. Unauthorised persons and animals must not have access to the sprayer under these circumstances.
7. If the product applied is corrosive, it is recommended to coat all metal parts of the sprayer before and after use with a suitable rust inhibitor.

5 - Operation

Parking the sprayer

To avoid spot contamination the sprayer should always be parked at either the washing/filling place or under roof. This avoid rainfall to washing down chemical residues from the sprayer's surfaces.

- Parking at the washing/filling location will retain residues.
- Always park the machine out of reach of children, animals or unauthorised persons.

Use of detergents

It is recommended to use an appropriate cleaning detergent suitable for cleaning agricultural sprayers.

- The cleaning detergents which contains a suitable lube or conditioner is recommended.
- If for some reasons this is not available and e.g. triple ammonia water is used, it is important to rinse the circuit immediately after and add some lubricant to the rinsing water to avoid e.g. ball valves seizing up.
- Use of automotive antifreeze/radiator coolant (ethylene glycol) will protect the valves, seals etc. from drying or seizing up.

Technical residue

Inevitably a quantity of spray liquid will remain in the system. It cannot be sprayed properly on the crop, as the pump takes in air when the tank is about to be empty.

This Technical Residue is defined as the remaining liquid quantity in the system as the first clear pressure drop on the pressure gauge is read.

The dilutable residue must be diluted 10 times with clean water and sprayed to the crop just sprayed before cleaning the sprayer.

Cleaning and maintenance of filters

- Clean filters ensure:
- Sprayer components such as valves, diaphragms and operating unit are not hindered or damaged during operation. Nozzle blockages do not occur whilst spraying.
- Long life of the pump. A blocked suction filter will result in pump cavitation. The main filter protecting sprayer components is the suction filter. Check it regularly.

Rinse and cleaning

The incorporated rinsing tank can be used for different purposes:



Note! Only Full internal cleaning will clean the whole fluid system!

A. Full internal rinsing:

This procedure is used when:

- When the sprayer is going to be used again shortly (E.g. next day) in same or similar crops (No risk by cross contamination and subsequent crop damages, or no risk for crop protection sedimentation in the fluid system)

B. External cleaning:

This procedure is used to:

- Rinse the sprayer on the outside in the field as required (can only be carried out on completion of "A").

C. Rinsing spray circuit without diluting main tank content

This procedure is used when:

- In case of stop in spraying before main tank is empty (e.g. beginning rain etc.). It will rinse the pump, operating unit, spray lines, etc.

D. Full internal cleaning (Soak wash)

This cleaning procedure is always used when:

- The next crop to be sprayed is at risk to be damaged by the chemical just used, or
- The sprayer is not going to be used again for same chemical or crop right away, or
- Before any repair or maintenance job is going to be carried out on the sprayer.



ATTENTION! The cleaning procedures stated requires the TurboFiller to be cleaned on beforehand (directly after the last chemical filling). If the TurboFiller for some reason is not cleaned please carry out this cleaning before attempting the cleaning procedures A, B or C - see "Rinsing TurboFiller" on page 71

Note that this cleaning will then use water from the rinsing tank reducing the available quantity for cleaning procedures A, B, C and D.



ATTENTION! Do NOT fill any cleaning detergents into the rinsing tank. If cleaning agents are to be used this should be added the main tank.



WARNING! Never clean the sprayer if there are risks of contamination of surface or underground water! Choose a different spot for cleaning every time to avoid spot contamination to build up.

5 - Operation

A. Full internal rinsing



NOTE! This cleaning procedure is always used when:

- When the sprayer is going to be used again shortly (E.g. next day) in same or similar crops (No risk by cross contamination and subsequent crop damages)



WARNING! If the next crop to be sprayed is sensitive to the latest chemical used or if the spraying is not going to be done straight away a full cleaning should be carried out. See "D. Full internal cleaning (Soak wash)" on page 79.

This rinsing procedure will rinse the spraying circuit and Main Tank as follows:

1. Empty the sprayer as much as possible. Close the agitation valve (no agitation). Allow the pump to run for at least 1 minute after the liquid fan from the nozzles has collapsed to ensure that all relevant liquid has been expelled.
2. Turn on the Rinse Tank Valve. (This will automatically turn off the Main Tank Valve)
3. Turn on the Agitation valve.
4. Engage the pump
5. Use 1/6 of the rinsing tank content at this valve setting
6. Turn the ChemFiller/Ejector valve to off
7. Turn off the Agitation Valve for 10 seconds
8. Turn on the Tank Rinse nozzles for 20 seconds.
9. Turn the Chemfiller/Ejector valve to boom. "Spraying".
10. Open the Boom Spray nozzles by the ON/OFF switch.
11. Open the Cyclone filter tap located at the bottom of the cyclone filter fully by pressing it upwards for 10 seconds. This will flush out the sedimentations in bottom of the filter.
12. Set the Cyclone Filter Return Valve to down position to avoid dilution of main tank content (see page "CycloneFilter" on page 27)
13. Close the Boom Spray nozzles by the ON/OFF switch.



NOTE! If you want to spray out the diluted liquid in e.g. beside the field with the sprayer parked, the rest of cleaning process can be controlled from the side of the machine.



NOTE! If you want to spray out the diluted liquid in the field, go now to the cabin. The rest of the cleaning process can be manoeuvred from there.

14. Press the Main Tank valve to turn it on, this will automatically close the Rinse Tank valve.



ATTENTION! It is advisable to increase the forward speed (double if possible) and reduce the pressure to 1.5 bar (20 psi) when spraying diluted remaining liquid in the field just sprayed.

15. Open the Boom Spray nozzles by the ON/OFF switch.
16. If powder has been used, turn on the agitation from the control panel if the agitation is too strong you can decrease it gradually from the cabin. Spray out the content fully. If spraying in the field choose a different location each time to distribute the rinsing water over larger areas. Continue until all fluid is expelled from the boom tubes and nozzles - this may take several minutes after the spray fan has collapsed.
17. Turn on the Rinse Tank valve, this will automatically close the Main Tank valve.
18. Turn on the Rinse nozzle in the Main Tank and turn off the Boom Spray nozzle and run it for 1 minute.
19. Turn off the Rinse nozzle. Turn on the Main Tank valve. Turn on the Boom Spray nozzle spray until the Main Tank is empty.
20. Repeat step 15-17 another 3 times using 1/6 off the rinsing tank content in each of the 3 sequences until the Rinse Tank is empty
21. Shut off nozzles once the rinsing process is completed.

B. External cleaning

This procedure is used to rinse the sprayer on the outside in the field as required.

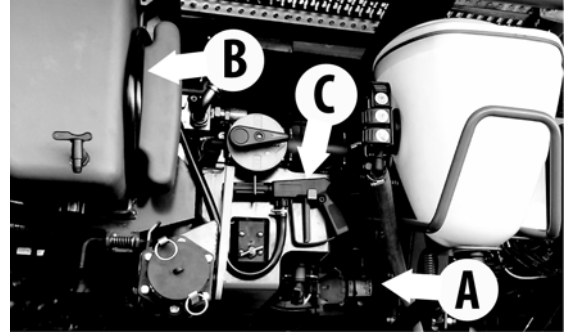


WARNING! Never clean the sprayer if there are risks of contamination of surface or underground water! Choose a different spot for cleaning every time to avoid spot contamination to build up.

Use the External Cleaning Device to wash everything on the outwards side of the sprayer. This prevents contamination of storage place etc. and let the sprayer last for a longer life. When the External Cleaning Device is going to be used, open the cover for the fluid system on sprayers left side.

The cleaning gun is located on the inner side of the cover.

1. Un-roll the hose from the reel (B) and take the handle (C).
2. Engage clean water pump (A) by pressing the ON/OFF switch at the end of the pump.
3. After cleaning turn of the clean water pump by pressing the ON/OFF switch.
4. Roll the hose to the reel again and close cover



ATTENTION! If the sprayer is cleaned with a high pressure cleaner, lubrication of the entire machine is recommended

5 - Operation

C. Rinsing spraying circuit without diluting main tank content

This procedure is used to rinse the pump, operating unit, spray lines, etc. in case of stop in spraying before main tank is empty (e.g. beginning rain etc.).



WARNING! If the next crop to be sprayed is sensitive to the latest chemical used or if the spraying is not going to be done straight away a full cleaning should be carried out. See "D. Full internal cleaning (Soak wash)" on page 79.

Rinsing of the liquid system

1. Turn off the pump.
2. Turn on the Rinse Tank valve.
3. Turn on the Boom nozzles
4. Turn off the agitation valve (no agitation)
5. Set the Cyclone Filter Return Valve to down position to avoid dilution of main tank content (see page "CycloneFilter" on page 27)
6. Engage the pump and spray water from rinsing tank in the field until all nozzle tubes/nozzles are flushed with clean water.
7. Disengage the pump again.



Don't turn Boom Spray nozzles off until the pump has fully stopped, otherwise diluting will occur in the Main Tank.



ATTENTION! It is advisable to increase the forward speed (double if possible) and reduce the pressure to 1.5 bar (20 psi) when spraying diluted remaining liquid in the field just sprayed.



ATTENTION! If a cleaning procedure is given on the chemical label, follow it closely.

D. Full internal cleaning (Soak wash)



NOTE! This cleaning procedure is always used when:

- The next crop to be sprayed is at risk to be damaged by the chemical just used, or
- The sprayer is not going to be used again for same chemical or crop right away, or
- Before any repair or maintenance job is going to be carried out on the sprayer.



NOTE! Wash of sprayer between jobs with incompatible crops must be done according to prescriptions from the chemical producer. Use e.g. All Clear DS, as this is a commonly used cleaning agent. If your chemical prescribes another cleaning agent and/or another cleaning procedure, you must follow that.



NOTE! For extra "sticky" combinations such as carfentrazone-ethyl plus glyphosate allow the cleaning solution to remain in contact with all internal surfaces of the spray equipment for 24 hours to increase product residue removal. If it is suspected that hoses and spray lines are contaminated, contact time with the cleaning solution should be increased to 48 hours.



NOTE! Below is general cleaning guidelines of your sprayer, it is important to remember that the best source of information is the pesticide label. Consult labels for the products that were previously in the tank, and for the products that will be used for the next application.

Procedure for wash with a cleaning agent, e.g. All Clear DS:

1. Rinse the sprayer in the field (See chapter "A. Full internal rinsing" on page 76) during the rinsing open all the boom flush tap and let water from the rinse tank, flush the line until clean. Do the same for all flush taps on the boom.
2. Drive to farm fill station.



ATTENTION! Do NOT fill any cleaning detergents into the rinsing tank. If cleaning agents are to be used this should be added the main tank.

Prepare sprayer for cleaning with cleaning agent, e.g. All Clear DS. Read the All Clear DS instructions carefully. Fill water in the main tank to 10% of capacity (. Fill the rinsing tank completely. This water is used later for rinsing. Turn on the Main Tank Valve

3. Turn on the Agitation Valve
4. Engage the pump
5. Allow the liquid to circulate for 3 minutes.
6. Turn the Chemfiller/Ejector valve towards the Chemfiller.
7. Turn the Vacuum Source valve to Chemfiller.
8. Open the TurboFiller deflector valve and allow liquid to circulate for 3 minutes.
9. Close the lid and activate the container rinsing valve to clean the hopper inside.
10. Shut off container rinsing valve and the deflector valve and the on the TurboFiller.
11. Close the Vacuum Source valve
12. Turn the Chemical Induction valve to Rinse Tank for 1 min to rinse the return line, then turn it off.
13. Verify that all Boom nozzles are shut off.
14. Turn the Chemfiller/Ejector valve towards "Spraying".
15. Allow the liquid in the main tank to circulate for minimum 3 minutes with the nozzles shut to clean the return lines from boom to tank.
16. Spray out water with cleaning agent and chemical residue. Set the spray pressure at 3-5 bar. Note that the washing water still contains active chemical and choose an appropriate area to spray out this. Alternatively the washings can be dumped at the Filling/washing location and retained in an appropriate receptacle (E.g. slurry tank or similar). Spot contamination and accumulation must be avoided. Continue to spray until all liquid is expelled from the boom tubes and nozzles.
17. Shut off all nozzles by the main ON/OFF switch

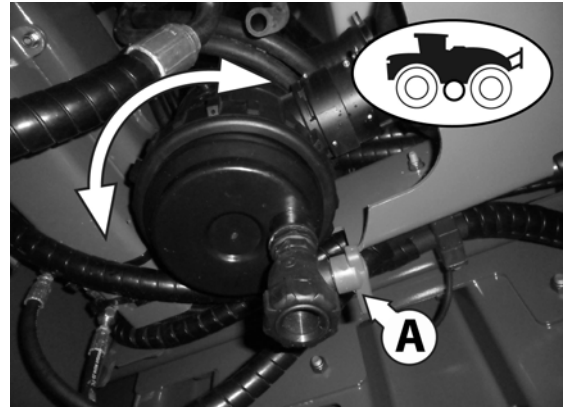
5 - Operation

18. Rinse the sprayer again with clean water to rinse out all remains of the cleaning agent. See section "Use of rinsing tank and rinsing nozzles" subchapter A. "Full internal rinsing" This to avoid that the cleaning agent remains in the fluid system. Remains could damage the next spray chemical filled into the main tank.
19. Include rinsing of the TurboFiller in step 19. Operate all valves during this process. (see page 71)
20. Repeat step 18-19 until the whole fluid system is clean, how many times this has to be done is highly dependent on what type of crop protection been used.



ATTENTION! The rinsing nozzles cannot always guarantee a 100% cleaning of the tank. Always open the main tank lid and visible inspect if there are any traces of sedimentation in the tank.

21. Clean manually with high pressure water cleaner, inside of the tank, especially check and clean the bottom of the tank where sedimentations can occur.
22. The suction filter is located under the machine, behind the fluid workzone. First open screw A to drain the filter, then un-screw the plastic nut and pull out the filter. Clean out the filter, check condition on the filter. Re-fit it filter, cap and nut.



23. In fluid work zone open the Main Tank Empty and rinse line with clean water until clean,

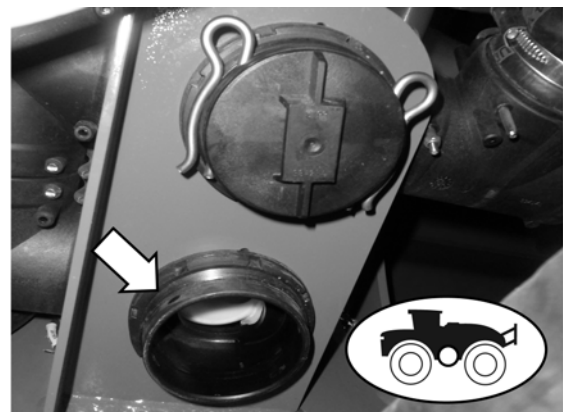


DANGER! Make sure the tank is empty! Remove the U-pin at back of the Main Tank Valve and disconnect hose check for traces of sedimentation in the hose. Refit the hose clean again if necessary.

24. In fluid work zone there are two electric valves in top right corner. On bottom of each valve the is a removable cap.



DANGER! Before opening the cap make sure the Main Tank is closed or empty. Otherwise spraying liquid may hit you when opening the cap and you will drain Main Tank!



Remove the bottom cap on the inner electric valve that connects to the bottom of the Main Tank.

Open the rinse tank valve

Clean out the valve, check condition on the O-rings, lubricate the O-ring and put back the cap and R-pin

- 25.

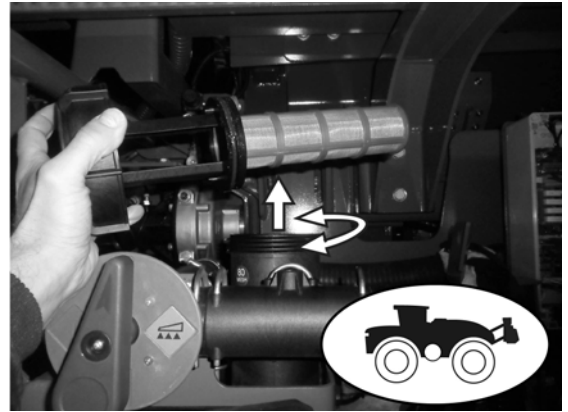


DANGER! Before proceeding with below make sure the chemfiller/Ejector valve is turn to chemfiller, otherwise spraying liquid may hit you!

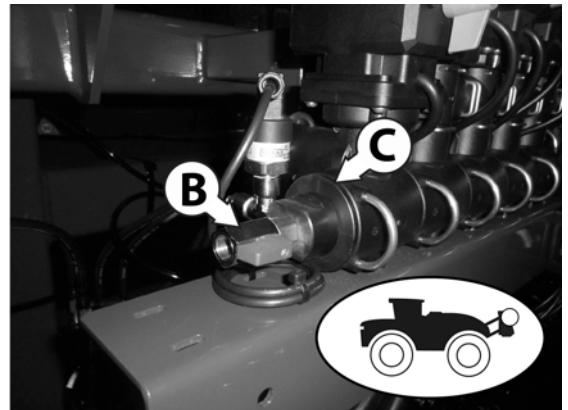
In fluid work zone remove the cap that sits on the T-piece that is connected to the cyclone filter. Inspect if there are any sedimentation in the T-piece, if there is large amount of sedimentation indicate that the fluid system is needs to be clean more. Clean out the T-piece check condition on the O-rings, lubricate the O-ring and put back the cap and U-pin



26. In fluid work zone unscrew the cap on the cyclone filter and lift out the filter. Clean the filter and check conditions on the O-rings and filter. Lubricate the O-ring and re-assemble the filter.



27. On the centre use the flush tap (B) to rinse the line with water from the rinse tank, flush until clean. Close the valves and remove the U-pin and carefully remove the fitting (C) with pressure sensor on. Check if there are any traces of sedimentation, clean if necessary. Lubricate the O-rings and re-fit.



28. Un-screw the hosing on the in-line filter and pull out and clean the filter. Lubricate the O-rings and re-fit. Do the same procedure on all the in-line filters



29. Open the boom flush tap and let water from the rinse tank, flush the line until clean. Do the same for all flush taps on the boom.



5 - Operation

30. Nozzle filters check and clean all nozzle filters on the boom.
31. A susceptible plant should be treated with a sample of the final rinsate to determine whether residues remain.



NOTE! It is the responsibility of the sprayer operator or owner that the sprayer is cleaned sufficiently to avoid contamination of the environment, crop damages and health & safety hazards to operator and the public. HARDI cannot be held responsible for any damages or incidents related to insufficient cleaning.

Lubrication Sprayer

General information

Always store lubricants in a clean, dry and cool place - preferably at a constant temperature. Keep oil filling jugs, hoppers and grease guns clean, and clean the lubricating points thoroughly before lubricating. Avoid skin contact with oil products for longer periods. Always follow the recommendations concerning quantity. If no quantity is indicated, lubricate up to the required level, unless otherwise indicated.

For the opening of the engine hood, see the chapter. "" on page 39

Table of recommended lubricants

Components	Capacity (litres)		Recommended lubricants - TOTAL
	Housing (1)	With filter(1)	
Engine Cummins QSB 6.7	18	18.5	RUBIA WORKS 1000 15W-40 ACEA E7 (E5) API CI-4 / CH-4 / CF / SL
Hydraulic Transmission and Hydraulic system	100		EQUIVIS ZS46 AFNOR NF E 48-603HV ISO 6743/4HV TRANSMISSION SYN FE 75W-140 (Synthetic oil)
Moto-reducers of wheel	3		For further detail see "Wheel Drive Gearbox lubrication" on page 136
Coolant	25		COOLELF AUTO SUPRA -37°CAFNOR NFR 15-601 - BS 6580
General lubrication	--		Multi EP2 ISO-L-XBCFB 2



The data values in the table above are indicative to titles. Only the level indicated by the gauge should be taken into consideration.

6 - Maintenance

Service intervals

	Daily	10	150	250	500	1000	1500	2000	2500	3000	3500	4000	4500	5000
		Interval +500 hours												
Hydraulic														
Hydraulic oil level	●													
Hydraulic oil			□	□	□	□	□	□	□	□	□	□	□	□
Check hydraulic filters clogged			●	●	●	●	●	●	●	●	●	●	●	●
Hydraulic filters			□	□	□	□	□	□	□	□	□	□	□	□
Drain the hydraulic tank			□						□					
Wheel Drive (gearbox)														
Oil level				● (Every 150 hours)										
Oil replacement				□ (Every 500 hours)										
Tightening screws	●	●							●					
Cabin														
Active carbon filter				□ (Every 6 months)										
Air conditioning gas				□ (Every 5 years)										
Clean air conditioning condenser			●	●	●	●	●	●	●	●	●	●	●	●
Air conditioning belt			●	●	●	●	●	●	●	●	●	●	●	●
Engine⁽¹⁾														
Clean cooler	●													
Check oil level	●													
Check coolant level	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Replace engine coolant				□ (Every 2 years)										
Clean air filter	●													
Replace air filter					□		□		□		□		□	
Replace safety air filter					□		□		□		□		□	
Drain lubricating oil				□ (Every 250 hours or 3 months) 2										
Empty water fuel prefilter														
Replace fuel prefilter				□	□	□	□	□	□	□	□	□	□	□
Replace fuel filter				□	□	□	□	□	□	□	□	□	□	□
Filling the fuel tank	●													
Clean fuel tank								□					□	
Compressed air tank	●													
Compressed air filter and lubricator			●											
Compressed air pressure				●	●	●	●	●	●	●	●	●	●	●
Inspect V-belts roller				● (Every 2 years)										
Battery (maintenance + terminals)				●	●	●	●	●	●	●	●	●	●	●
Chassis and booms			●											
Tighten lug nuts		●		●										
Lubricate chassis and axles				●										
Check inflation pressure				●										
Inspect tires				●										
Dynamic brake accumulator				● (5 years)										
Spraying														
Check the boom		●		●										
Inspect spraying circuits			●	●	●	●	●	●	●	●	●	●	●	●
Lubricate spray pump				●										
Inspect line filters	●													
Remove and inspect the pressure gauge				●	●	●	●	●	●	●	●	●	●	●
Check the compressed air pressure				●	●	●	●	●	●	●	●	●	●	●

● Check

□ Replacement

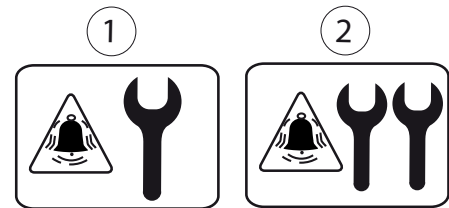
(1) Refer to Operation manual (bulletin 4021531)

Maintenance

Display of the frequency of maintenance

When maintenance work is to perform on the self-propelled, the display shows the symbols of alerts corresponding to the different periods:

1. Maintenance after 150 hours of use
2. Servicing every 500 hours



The message ref.1 appears only once in 150 hours to indicate that the maintenance work is to perform on the machine.

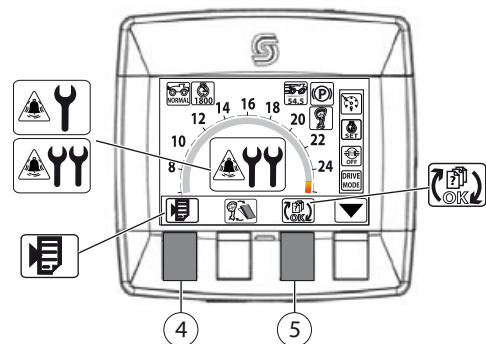
The message ref.2 appears periodically all 500 hours to indicate that the maintenance work is to perform on the machine.

i The display only shows maintenance on the sprayer not on the boom and centre. For maintenance on boom and centre see page 92

Reset the Hour Meter

- Simultaneously press the keys rep. 4 And ref.5 for 5 seconds to reset the hour meter for maintenance

i The cancellation of the message is to be performed when the work of maintenance have been made.



After 10 hours - Hydraulic system

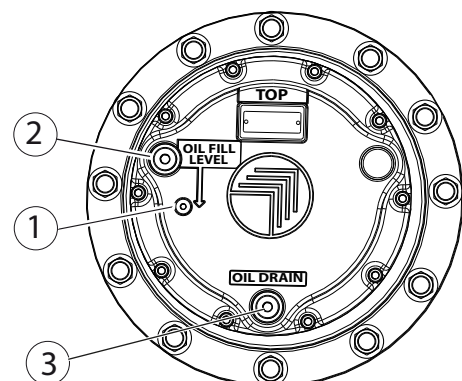
- Check the tightness of the hydraulic hoses and the oil level in the hydraulic reservoir.
- Check the tightness of the wheel studs.

Operations on the engine

i For further information, see the CUMMINS engine user and maintenance manual.

After 150 hours - Wheel Drive Gearbox Oil level

- Move the self-propelled to orient the reducers as shown in the illustration
- Unscrew the cap rep.1 and rep.3 to drain the gearbox
- Add the oil from the orifice ref.2 until it flows out from the level orifice ref.1.



See the section "Every 1000 hours - Wheel Drive Gearbox Draining" on page 88

6 - Maintenance

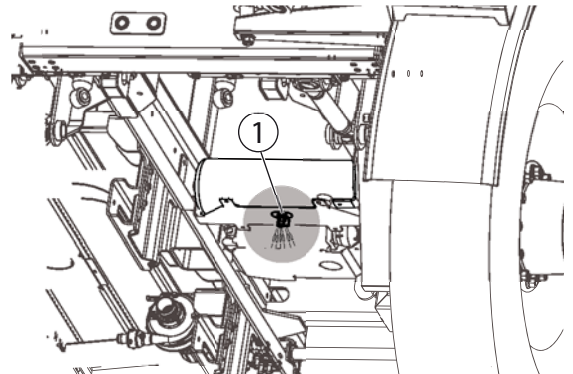
Periodic Maintenance Sprayer

Daily

- Check sprayer filters.
- Check engine oil level
- Filling the fuel tank
- Check hydraulic oil level
- Cleaning of the engine radiators
- Check air filter is not clogged

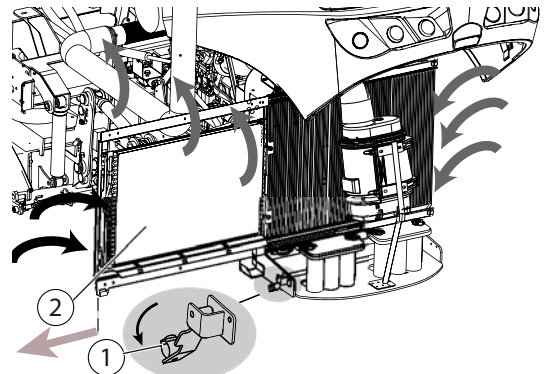
Every 50 hours - compressed air tank

- Turn the bleed valve ref.1 to eliminate the condensate content in the tank.



Every 50 hours - engine radiators

- Lift the motor cover fully.
- Switch the attached ref.1 down.
- Slide the radiator ref.2 as shown in the illustration
- Remove the dust from the filter with compressed air from the inside to the outside.



During cleaning operations, take precautions not to damage the cells of the radiator



When the machine is operating in areas with a lot of dust or pollen, the cleaning intervals should be shortened.



The residue of oil and fuel promotes the clogging of the engine and the radiators. That is why it is advised to carefully check the sealing of the circuits of the engine.

Every 250 hours - hydraulic filter

The hydraulic suction filters are fitted with clogging indicators.

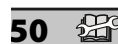
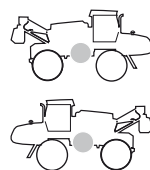


NOTE! The clogging indicator is read when the hydraulic oil is at the normal temperature for use.

- Regularly check the clogging level.

Less than 0.2 = filters in good condition.

More than 0.2 = filters to be replaced.

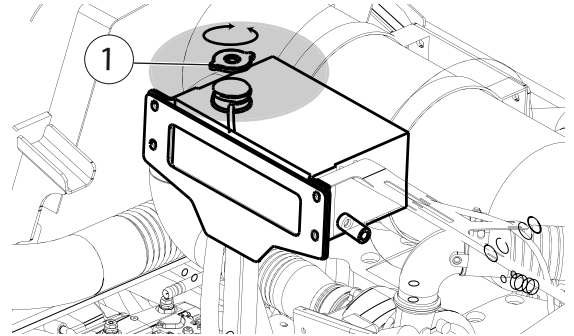


Every 150 hours - Coolant level



In the event of overheating of the engine's cooling system, wait a few minutes before opening the expansion tank plug, in order to avoid any risk of projection that could cause serious burns.

- Regularly check the coolant level.



To avoid burns, unscrew the plug ref.1 when the temperature is below 50 °C.



For further information, see the CUMMINS engine user and maintenance manual.

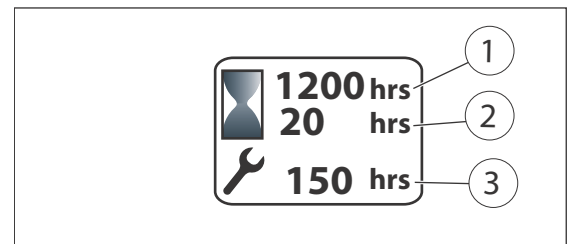


Only use the coolant recommended, see the chapters "Table of recommended lubricants" on page 83 and "Coolant" on page 135.

Every 500 hours - Hour Meter

This message appears after 500 hours of use, to indicate that mandatory maintenance of the machine.

1. TOTAL hourly Counter .
2. Counter Partial Time
3. Counter clockwise from the first MAINTENANCE



- Change of engine oil and replacement of oil filter cartridge.
- Replacement of fuel filter.
- Bleed the fuel pre-filter.
- Inspection of tightness and tension of engine belts.
- Draining of the hydraulic reservoir and replacement of hydraulic filters.
- Replace the cabin active carbon filter.

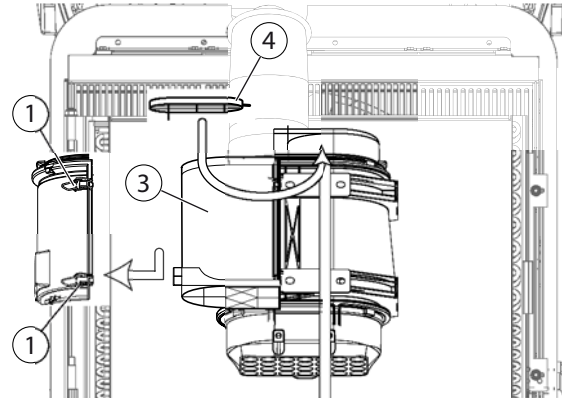
6 - Maintenance

Every 1000 hours - Replacement air filters engine



Wear goggles and a mask for protection to avoid the inhalation of dust and protect the eyes.

- Lift the motor cover fully.
- Remove the 4 straps ref.1 and remove the cover.
- Gently push the main filter ref.3 down to the release of its housing, then remove.
- Remove the filter Ref.4
- Replace the filters ref. 3 and ref.4



When reassembling:

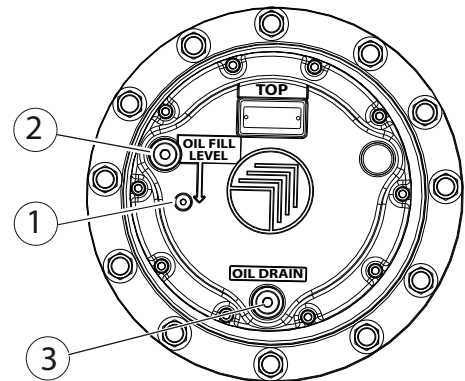
- Check the surface of the seals - clean with a slightly damp cloth
- Inspect the air inlet of the engine and the tightening the fasteners
- Check that the filter is not damaged.
- Check that the filter is completely in place during the - reassemble



To ensure the best protection, make sure you to use original air filters.

Every 1000 hours - Wheel Drive Gearbox Draining

- Move the self-propelled to orient the reducers as shown in the illustration
- Unscrew the cap rep.1 and rep.3 to drain the gearbox
- Add the oil from the orifice ref.2 until it flows out from the level orifice ref.1.



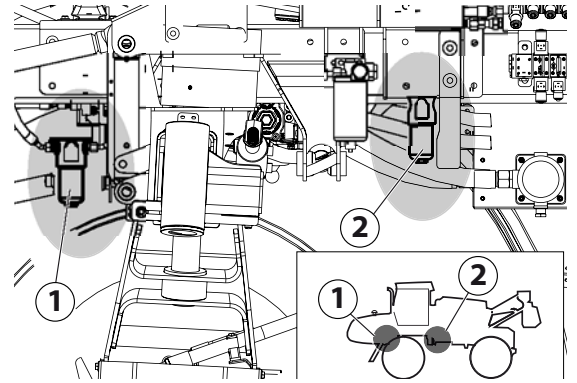
Use new O rings for plugs



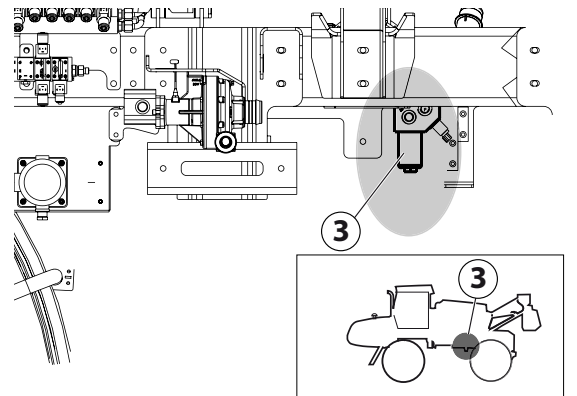
Use exclusively recommended transmission oil. See "Table of recommended lubricants" on page 83.

Every 500 hours - auxiliary hydraulic filter

1. Braking Circuit
2. Circuit bondage



3. Control spray circuit



To replace the filter cartridge:

- Unscrew the filter housing ref.1.
- Remove the filter cartridge ref.2 and replace it with a new one.



WARNING! It is essential to use an original filter.

Every 500 hours - hydraulic filters in the tank (version 2)



WARNING! Before replacing the filters, wear protective gloves to avoid the oil making any contact with the skin.



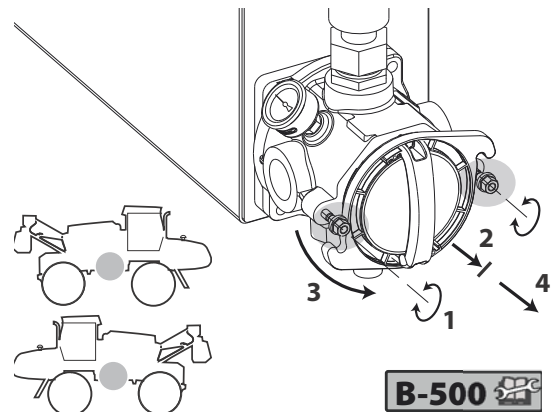
DANGER! Hot oil can cause serious burns.



WARNING! It is essential to use original filter elements.

The filters elements should be fitted on either side of the tank. They should always be replaced at the same time.

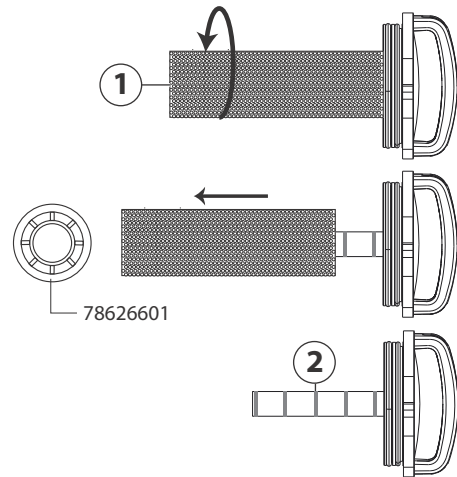
A drip pan should be put in place to collect the used oil contained in the filter housing. A valve at the end of the filter housing retains the oil from the tank.



6 - Maintenance

Remove the filter cap

- Unscrew the 2 nuts, without disassemble
- Pull out the cover up to the limit stop of the nuts. A one-way valve at the end of the filter housing retains the oil from the tank
- Turn the cover and completely pull the assembly



Remove the filter element

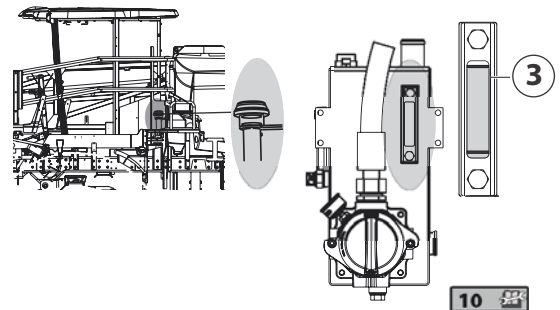
- Unscrew the filter element
- Clean carefully the magnetic core with a cloth
- Replace the filter element



NOTE! The old oil from the filters must never be re-used as it may damage the hydraulic system components.

After reassembling the filters elements

- To up to the maximum level.
- Start the engine on idle then stop it after a few seconds. This evacuates the air contained in the hydraulic system.
- Start the engine again on idle and then gradually increase the engine speed.
- Top up again with oil to the maximum level.



Left & Right filter element Part Number: 78626601

Every 6 months - Cab active carbon filter

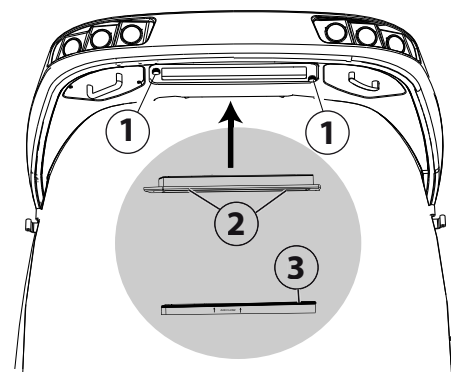
The cab is fitted with an active carbon filter that purifies the air entering the cab interior. It is fitted outside the cab at the front.



Wearing a mask and protective goggles is recommended to avoid inhaling the dust and protecting the eyes from it.

For the disassemble of the activated carbon filter:

- Remove the thumbscrews ref.1 and remove the filter assembly.
- Detach the filter from its bracket by removing the screws (ref. 2); discard.
- Replace the charcoal filter observing the direction of movement of the air.
- Refit the assembly to the cabin.



The frequency of replacement is given for information purposes. However, if bad odours would appear in the cab, that would mean that the filter is no longer completely effective, it must be replaced in the shortest time possible, to avoid any risk of contamination.



When the sprayer is not used, it is advisable to store the active charcoal filter, if possible in a plastic bag.

Every 1000 hours

Cleaning of the hydraulic reservoir

Check the engine belts

Drain the engine coolant

Checking the charge of gas from the air conditioning

Cleaning the condenser of the air conditioning.

6 - Maintenance

Boom and Centre


Lubrication General info

Always store lubricants clean, dry and cool - preferably at a constant temperature - to avoid contamination from dirt and condensed water. Keep oil filling jugs, hoppers and grease guns clean, and clean the lubricating points thoroughly before lubricating. Avoid skin contact with oil products for longer periods.


Always follow the quantity recommendations. If no quantity is recommended, feed lubricator till new grease becomes visible.


Pictograms in lubrication & oiling plans designate the following:

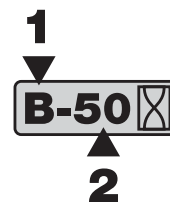
1. Lubricant to be used (see "Recommended lubricants").
2. Recommended intervals (hours).

 **ATTENTION!** If the sprayer is cleaned with a high pressure cleaner, lubrication of the entire machine is recommended. Recommended lubricants

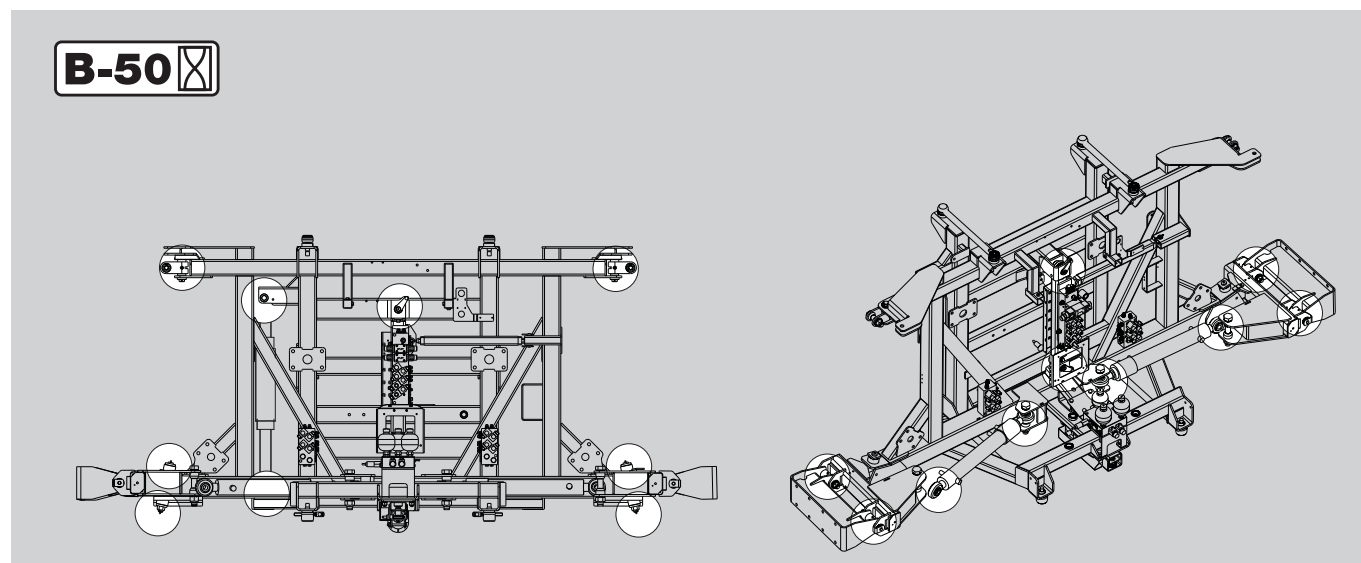
 **A** BALL BEARINGS:
Universal Lithium grease,
NLGI No. 2
SHELL RETINAX EP2
CASTROL LMX GREASE

 **B** SLIDE BEARINGS:
Lithium grease with
Molybdenumdisulphide or
graphite
SHELL RETINAX HD 2 (or HDX 2)

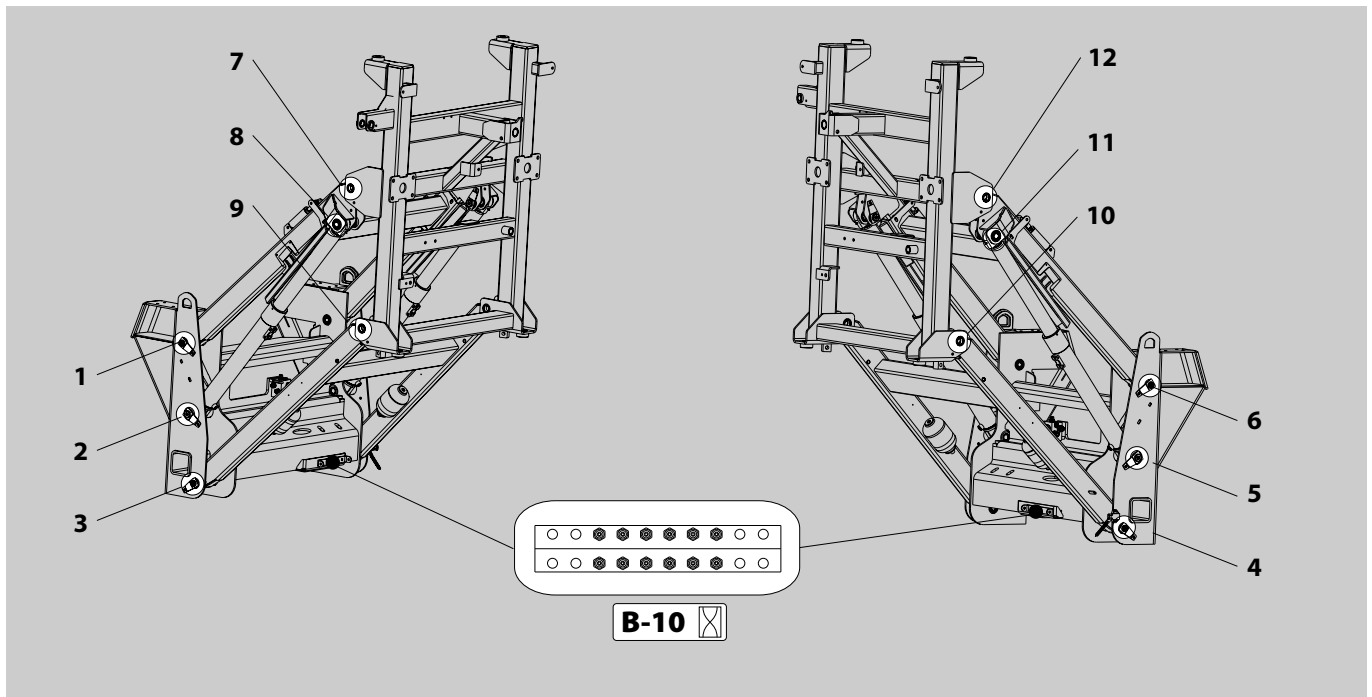
 **C** OIL LUB. POINTS:
TOTAL Transmission TM
SAE 80W/90
Castrol EPX 80W/90
SHELL Spirax 80W/90
Mobil Mobilube 80W/90



Centre



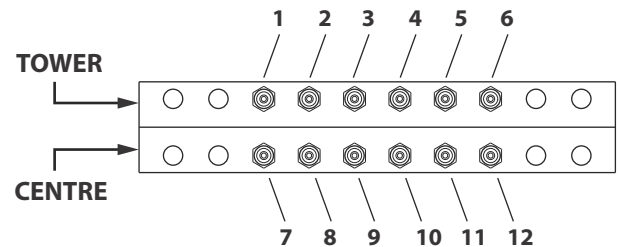
ParaLift lubrication



Central lubrication

The chassis and paralift is equipped with remote lubrications points. These are located from the inside of the chassis rear end.

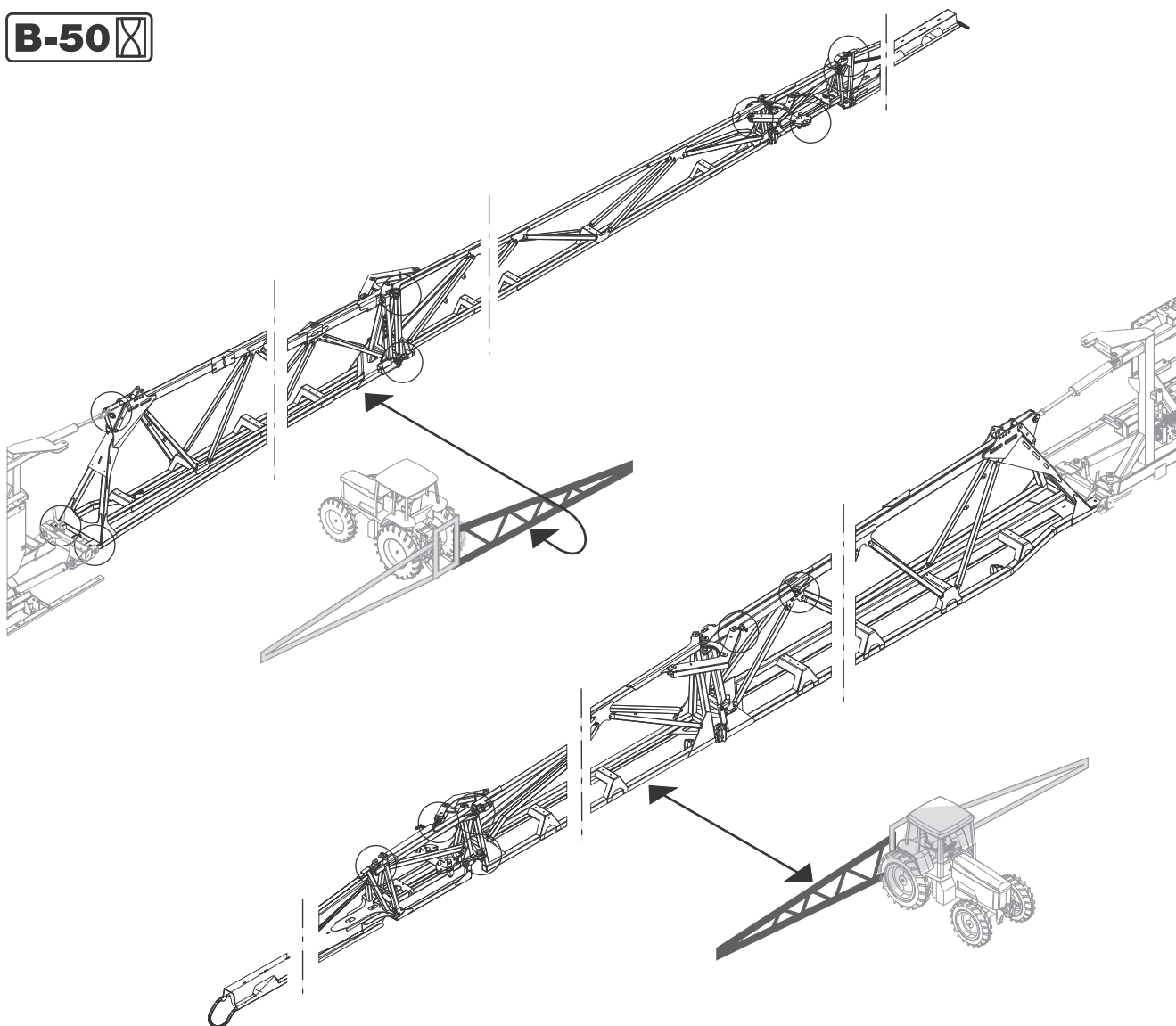
1. Chassis left hand upper lift arm attach point
2. Chassis left hand cylinder attach point
3. Chassis left hand lower lift arm attach point
4. Chassis right hand lower lift arm attach point
5. Chassis right hand cylinder attach point
6. Chassis right hand upper lift arm attach point
7. Paralift left hand upper lift arm attach point.
8. Paralift left hand cylinder end attach point.
9. Paralift left hand lower lift arm attach point.
10. Paralift right hand lower lift arm attach point.
11. Paralift right hand cylinder end attach point.
12. Paralift right hand upper lift arm attach point.



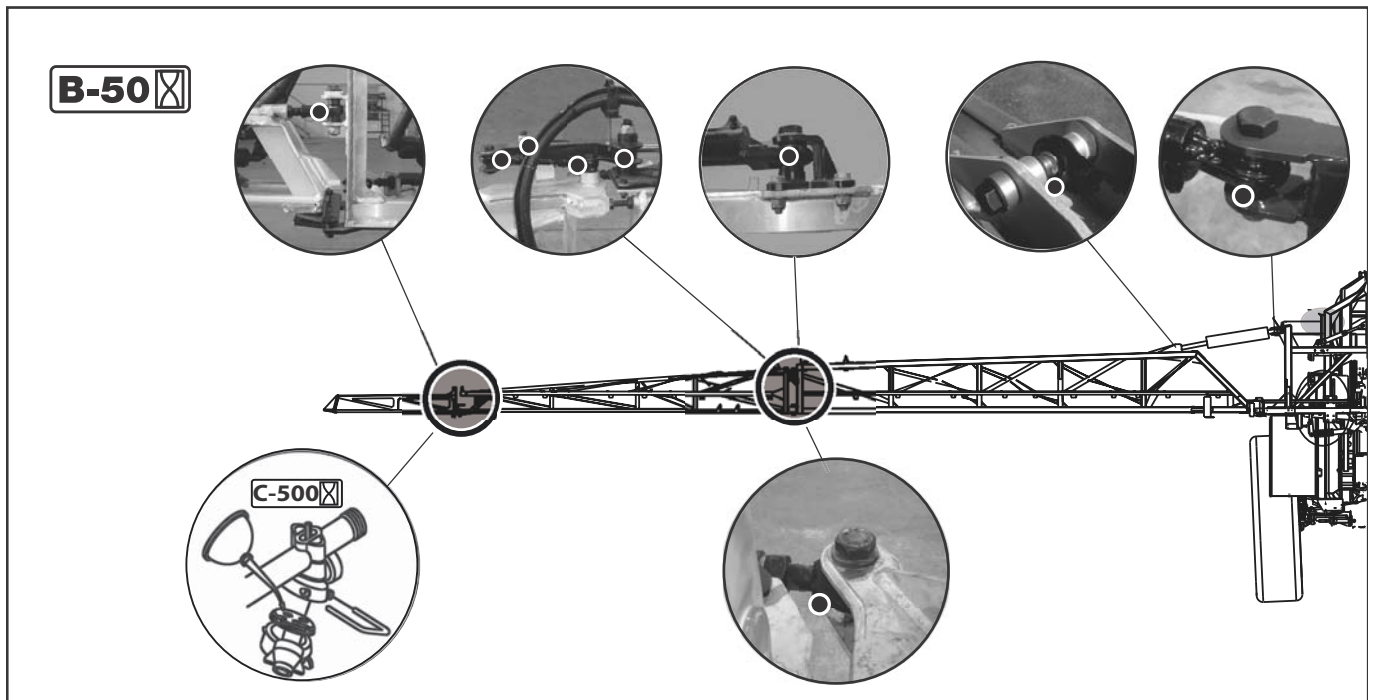
6 - Maintenance

Boom lubrication TDZ

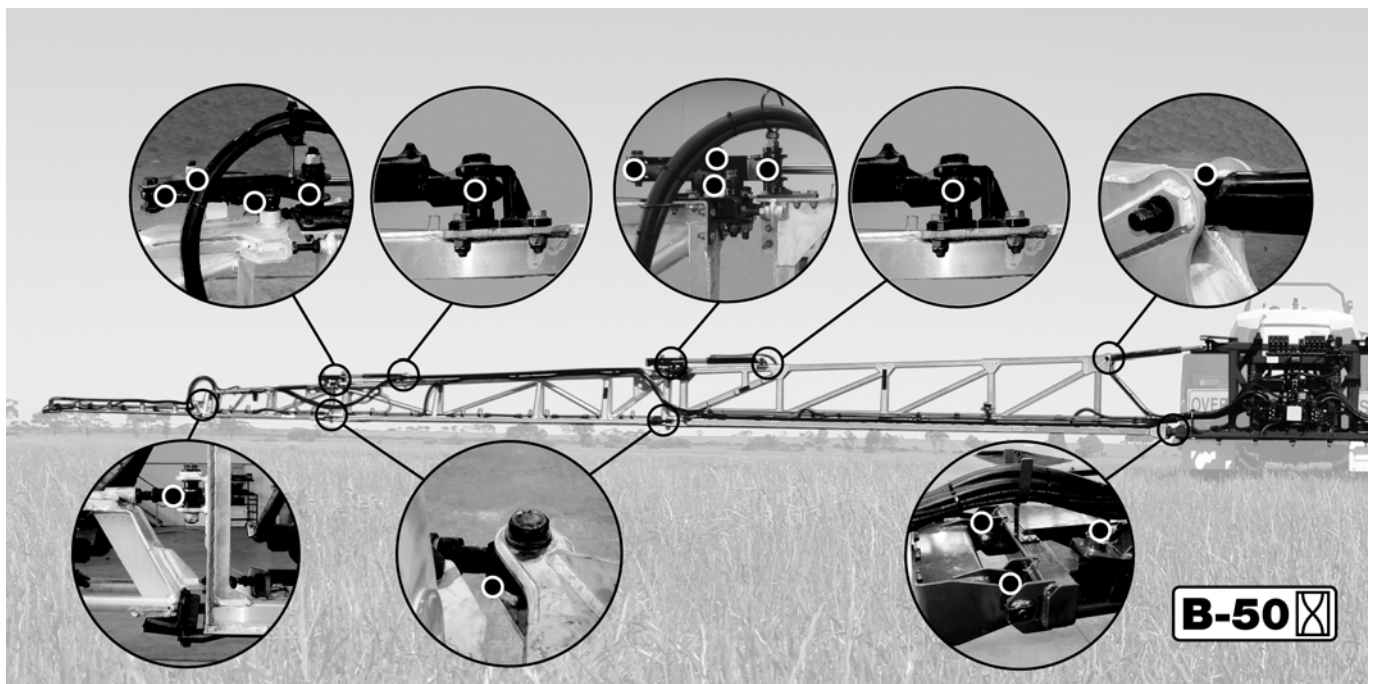
B-50 



Boom lubrication TR5



Boom lubrication B3



6 - Maintenance

Service and maintenance intervals boom and centre

After first use - Tighten Bolts and nuts boom

- -Check that all bolts and nuts are properly tighten and re-tighten if necessary using suitable tool. Large bolt and nuts should be really tight, it is recommended to use a spanner with a 1-metre extension bar.
- -Tighten the nuts on the parallelograms arms see "TDZ/TR5/B3 Boom - Tighten the nuts on the horizontal parallelogram arms" on page 103.

10 hours service - In-Line filter (optional not PrimeFlow)

If the boom is equipped with In-Line Filters, unscrew the filter bowl to inspect and clean the filter. When reassembling, the O-ring should be greased.

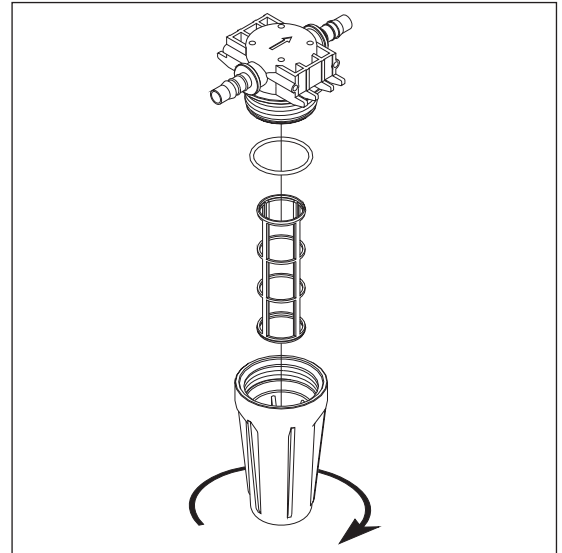
Alternative filter meshes are available. See section on Technical specifications - Filters and nozzles.



WARNING! Be careful not to splash out liquid when unscrewing the filter bowl.

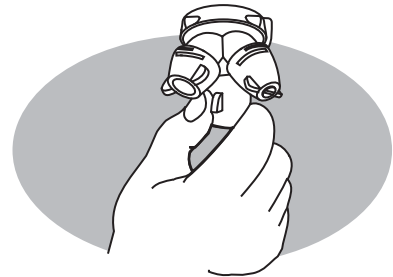


WARNING! Always wear protective clothing and gloves before opening the filter!



10 hours service - Nozzle filters

Check and clean.



10 hours service - Spraying circuit

Fill with clean water, operate all functions and check for leaks using higher spray pressure than normal. Check nozzle spray patterns visually using clean water.

50 hours service - Lubricate boom and centre

Lubrication points on the boom and centre needs attention every 50 working hours to work correctly.

50 hours service - Bolts and nuts boom

-Check that all bolts and nuts are properly tighten and re-tighten if necessary using suitable tool. Large bolt and nuts should be really tight, it is recommended to use a spanner with a 1-metre extension bar.

50 hours service - Spring break away

Check the tension of the break-away spring see page: "B3/TR5 Boom - Adjustment of break-away spring" on page 115

250 hours service - Hydraulic circuit

Check the hydraulic circuit for leaks and repair if any.

Refill Nitrogen accumulators see page 47 for correct pressure

- Yaw system
- Tilt system



WARNING! Hoses for boom lifting device must be changed after every 5 years of use.



WARNING! Nitrogen accumulators contain oil under pressure.

Yearly service - Aluminium Boom etching cleaning

Use a ALI BRITE Aluminium Cleaner or similar product to remove corrosion and oxide film.

ALI BRITE can be bought from most boat/car part shops.



Surface treatment powder coated surfaces

Some chemicals mixed together can have a reaction on polyester powder coated surfaces if poor hygiene is practiced. Regular cleaning is highly recommended.

6 - Maintenance

Occasional maintenance

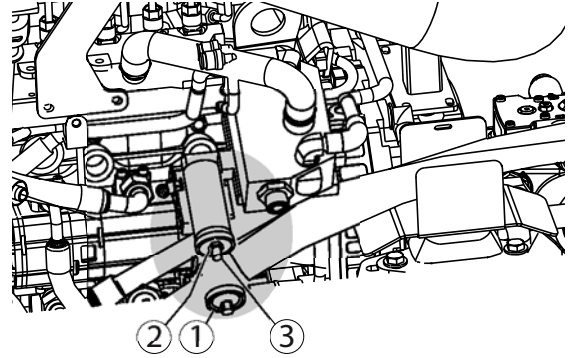
General information

The servicing and maintenance intervals mainly depend on the conditions of use of the sprayer and, as a result, the maintenance intervals may not be stated.

Compressed air pressure adjustment

The compressor of compressed air is used for the operation of the suspension of the sprayer. The pressure of service must be between 9 bar (130 psi) and 10 bar (145 psi).

- Raise the engine cover to access the adjustment of the air compressor, located on the left side of the engine.
- Unscrew the cover of protection ref.1
- Loosen the lock nut ref. 2 and ref.2 turn the screw to adjust the pressure of service of the suspension.



Air suspension adjustment

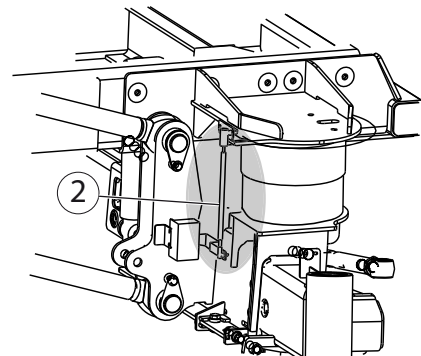
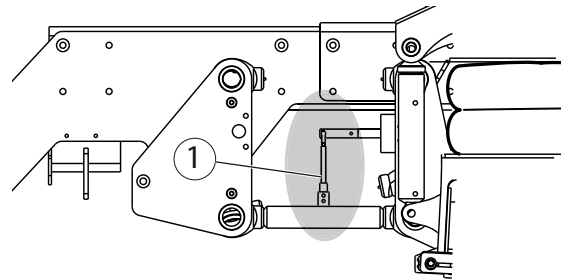


The adjustment of the suspension is to achieve empty tank.

- Check beforehand that the compressed air pressure is adjusted correctly.

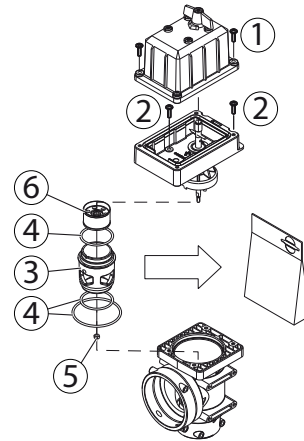
If the height of the pneumatic cushion is different from 284 mm (11.18 in) , you can modify it by acting on the valve linkage

- Adjust the linkage ref.1 to change the height of the front air bag.
- Adjust the linkage ref.2 to change the height of the rear air bag.



Verification/replacement of a bushel of the regulating valve

1. The pressure may no longer be sufficient or it may become unstable. In this case, replace the cone and the cylinder of the control valve (EFC valve).
 - Loosen the 4 retaining screws ref.1 and remove the lid.
 - Loosen the 4 screws ref.2.
 - Replace the cylinder ref.3 and the seals ref.4.
 - Loosen the nut ref.5, and remove and replace the cone rep.6.
 - Reassemble in reverse order.



Distribution valve seal check/replacement

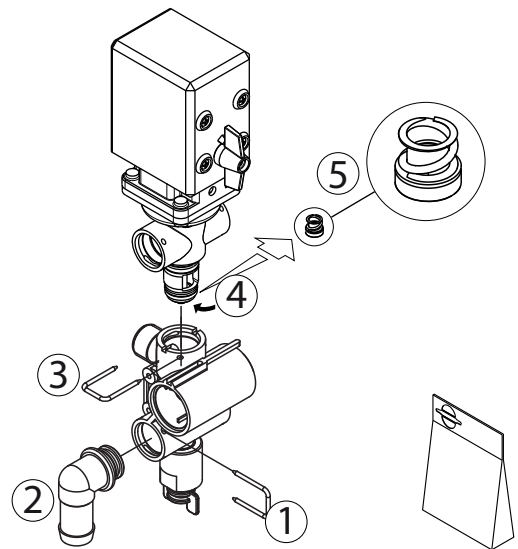
Regularly check the tightness of distribution valves with clean water.

Check

- Open all distribution valves (open spraying).
- Remove the pin ref.1 and remove the connector ref.2. When the housing is drained, there should be no liquid flow through the return line. If a leak is found, the seal must be replaced ref.5.

Replacement

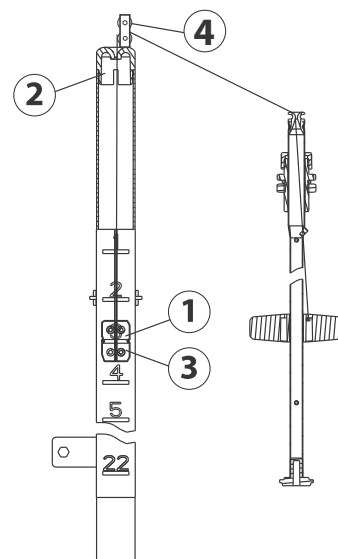
- Gently lift the pin ref.3 and remove the motorised valve from its housing.
- Loosen the screw ref.4 and replace the seal ref.5
- Reassemble in reverse order.



External gauge adjustment

The gauge reading should be checked regularly. The machine should be parked on flat horizontal ground.

- Fill the tank with a known volume of water, the bushing marker should correspond with the graduation of the gauge. If this is not the case:
- Remove the cord guide.
- Loosen the screw ref.3 and adjust the position of the indicator with respect to the indications on the pole.
- Check that the wheels ref.4 turn freely.



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Gauge cord replacement

If the cord on the gauge has to be changed, the float guide pole is removed from the tank:

- Remove the drain valve (see below "Drain valve seal replacement") and loosen the fitting holding the pole in position.
- Pull the pole down through the drain valve hole till it is free in the top of the tank.
- The pole can now be taken out of the tank through the filling hole.



DANGER Do not enter the tank - the parts can be changed from the outside.

Drain valve seal replacement

If you find a leak in the drain valve, check that the valve is clean. If the leak persists the valve seal should be replaced.

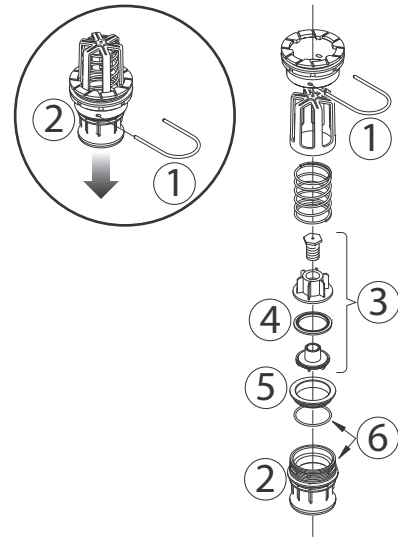


DANGER! Do not enter the tank - the parts can be changed from the outside.



WARNING! Use a face protection mask and goggles when dismantling the drain valve.

- Ensure that the tank is completely empty.
- Close the drain valve and release the control cord.
- Remove the pin ref.1 and pull on the part ref.2. The drain valve assembly can be removed downwards.
- Check the wear on the cord and the valve assembly ref.3, replace the seal ref. 4, then reassemble.
- Reassemble the drain valve assembly, replace the housing ref.5. Lubricate the O-ring ref.F on reassembly.
- Reassemble the pin ref.1 and check the tightness of the drain valve.



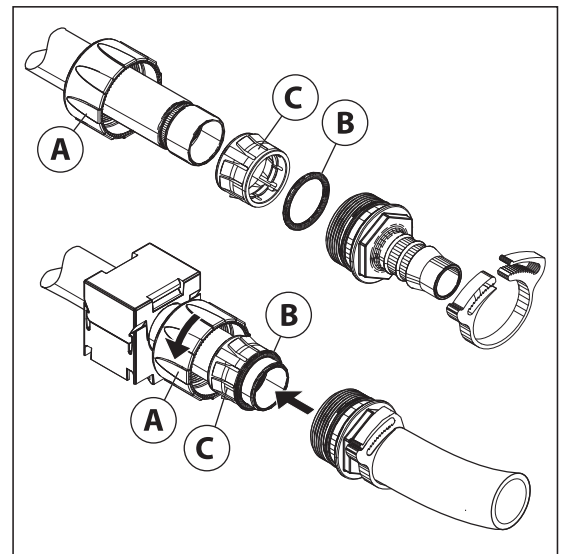
Feed pipe snap-lock assembly

Disassembly

1. Screw the nut (A) completely off.
2. Pull the feed piping and hose barb apart.
3. Take out the O-ring (B).
4. Inspect and oil O-ring (B). Change the O-ring (B) if worn, before reassembly.

Reassembly

1. Check that the barbed lock ring (C) is fitted to the feed pipe with barb pointing away from pipe opening.
2. Fit the oiled O-ring (B) on top of the lock ring (C).
3. Push the feed pipe and hose barb together.
4. Screw the nut (A) on the hose barb and tighten union nut (A) by hand.

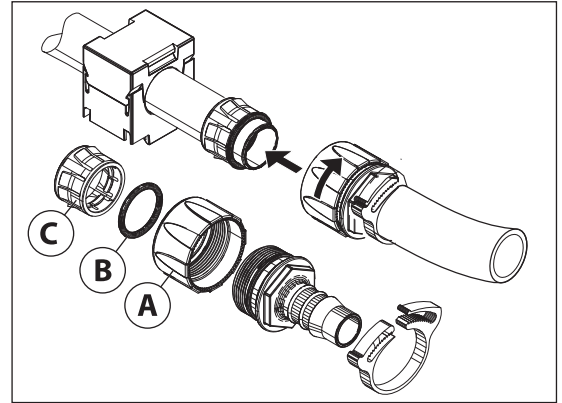


Initial fitting of fittings



ATTENTION! This method can only be used for pipes not fitted into pipe clamps.

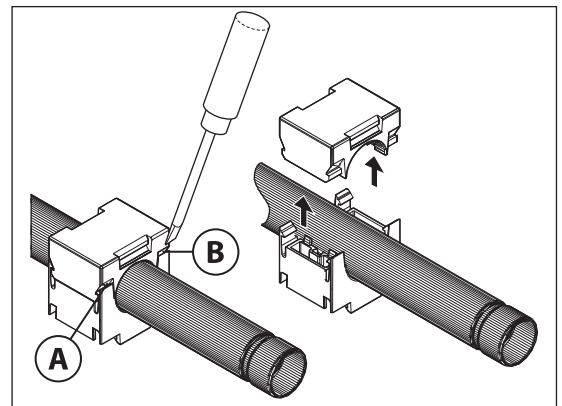
1. Fit the barbed lock ring (C) to the feed pipe with barb pointing away from pipe opening.
2. Fit the oiled O-ring (B) on top of the lock ring.
3. Screw the nut (A) partly on the hose barb.
4. Press the feed pipe and hose barb together.
5. Tighten the nut (A) by hand.



Feed pipe clamp assembly

A feed pipe can be removed from the pipe clamps the following way:

1. Use a flat bladed screwdriver to prize the cover off the first corner (A).
2. Hold the clamp top with your hand and prize off the opposite corner (B) with the screwdriver.
3. Prize off the other side of the pipe clamp with the screwdriver.
4. Take out the feed pipe.



Opening the cable trays

The cable trays on the boom can be opened for servicing or re-wiring.

Disassembly

1. Use a screwdriver at the end of a cable tray to prize the cable tray cover off the lock hooks.
2. Pull the cable tray cover off.

Assembly

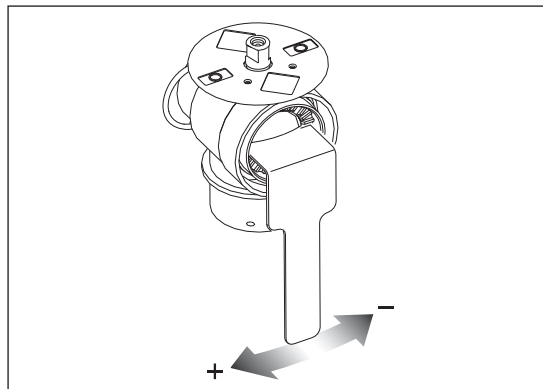
1. Press the cover on by hand until it hits the hooks of the cable tray.



6 - Maintenance

Adjustment of 3-way-valves

If a 3-way valve is difficult to turn or if it turns too easily or there is a risk of leak, the serrated washer can be adjusted as shown in the picture.



NOTE! This procedure is also valid for electric valves.

Readjustment boom - general info

Boom adjustment

Before commencing adjustments jobs please check the following points:

1. Boom and centre must be well lubricated (see "Lubrication boom and centre").
2. The sprayer should be parked on flat horizontal ground.
3. The boom must be unfolded and horizontal (slant corrector in neutral position).



WARNING! As a safety measure, there should be no one near the boom during adjustment operations.



DANGER! If maintenance is going to be done on the tilt cylinder. Make sure the boom rest on sturdy support before commencing any work.

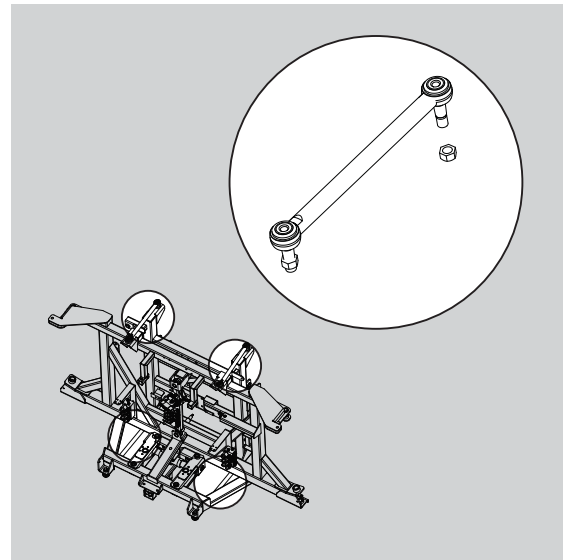


The adjustment of the hydraulic rams must take place when there is no pressure in the system.

TDZ/TR5/B3 Boom - Tighten the nuts on the horizontal parallelogram arms

These link arms act on the boom centre as a form of suspension. The arms have no adjustment however they are fitted with a high quality ball end that has a tapered shaft locked into each side of the boom centre. It is important that these tapered shafts remain tight in their respective housing.

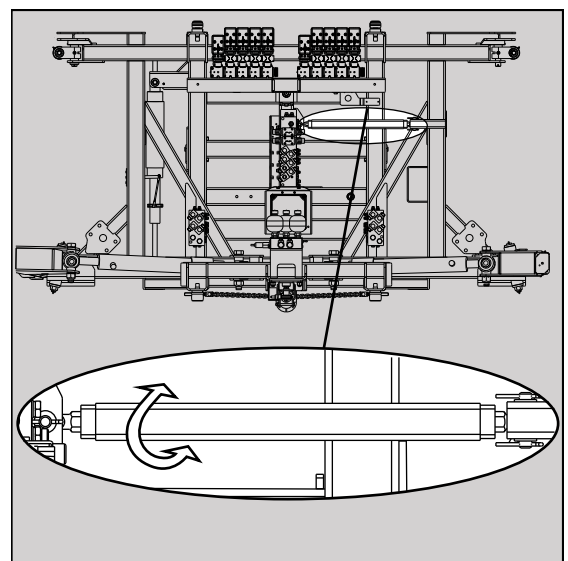
The nuts should be done up at 160 Nm. It is recommended to check this after the first days of operation and then at regular intervals of 250 hours.



TDZ/TR5/B3 Boom - Alignment of centre and lift frame

The centre is connected to the lift frame by an adjustable tie bar. Adjust it as follow:

1. Unfold all boom sections
2. Loosen the locknut on the tie bar
3. Put a spirit level at the top or side of the centre, or measure if centre is parallel to lift frame. Rotate the tie bar until the centre is completely horizontal and align with the lift frame
4. Tighten the locknuts again

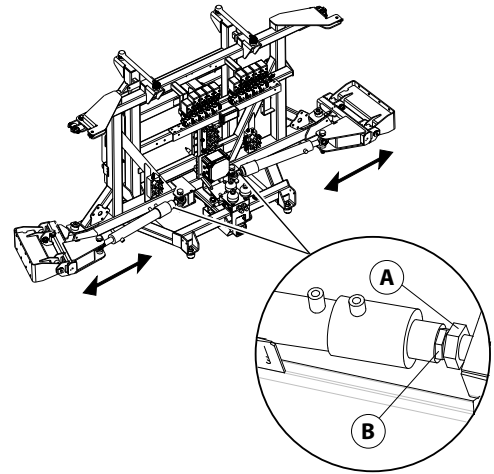


6 - Maintenance

TDZ/TR5/B3 Boom- Horizontal alignment of centre and inner boom sections

The boom tip should point slightly forward. If necessary adjust the inner section folding as follows: Depressurise the folding rams.

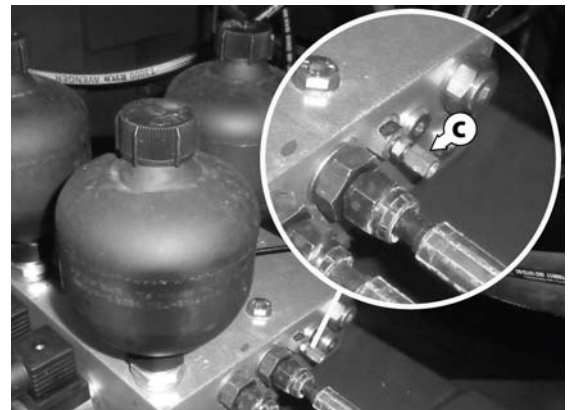
1. Loosen the counter-nut **A**
2. Adjust stop screw **B** until the correct setting is reached.
3. Tighten counter-nuts again.



TDZ/TR5/B3 Boom - Air bleeding inner fold cylinder

If the hydraulic circuit has been disconnected so air has entered the system, the hydraulic circuit has to be bled of air before adjusting. Bleed it as follow:

1. Unfold the boom and turn off the hydraulic pressure
2. Open the bleed air screw **C** on the hydraulic block
3. Press button to unfold the boom (as there is no hydraulic pressure only the electric valve will open). The boom will now open slightly. Check so the fold cylinder is completely in. If not push by hand. When the fold cylinder is fully in close the air nipple.
4. Activate the hydraulic pressure and press button to unfold the boom again, boom will now go back to neutral position.
5. Repeat step 1-4 four times to be sure that all air in the cylinder is out.
6. See section above how to adjust the inner boom.

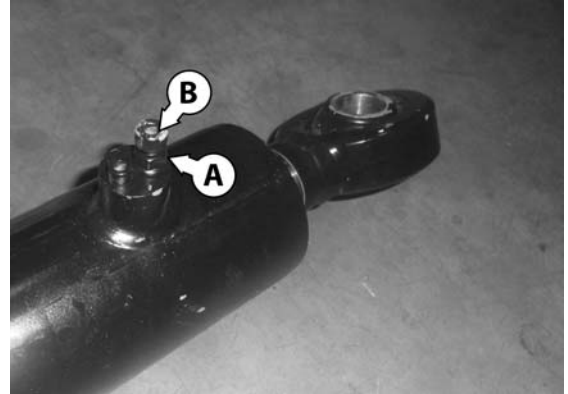


TDZ/TR5/B3 Boom - Soft close adjustment inner fold

The speed of the last bit of the extension stroke can be adjusted. This prevents that the wing hits the transport brackets during fold.

Adjust it as follow:

1. Unfold the boom loosen nut **A**.
2. The setting is very sensitive so proceed slowly, rotating the screw **B** one tenth of a turn at a time. By rotating the nut inwards the damping effect will increase, by undoing the bolt dampening will decrease.
3. Tighten the nut **A** again
4. Fold the wing hydraulically. If adjustment is necessary repeat step 1-4.

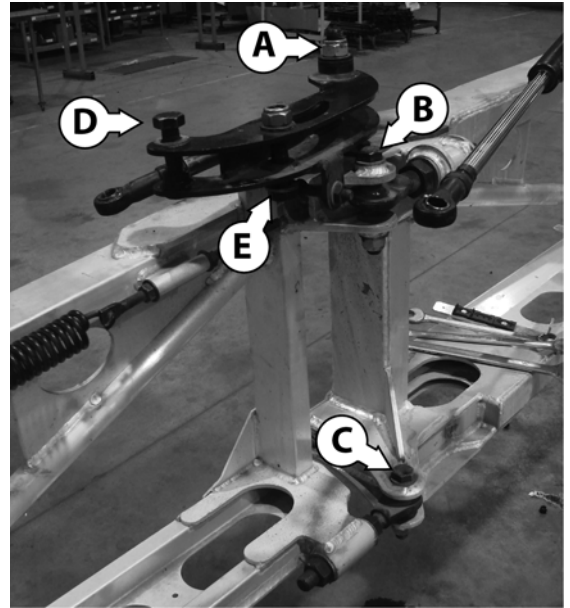


6 - Maintenance

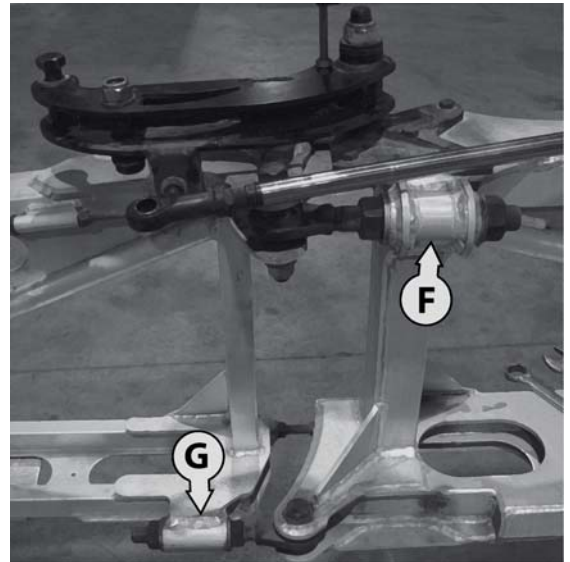
B3 Boom - Horizontal alignment and vertical alignment between 2nd and 1st outer wing

i NOTE! The adjustment for the 1st outer and inner wing is the same.

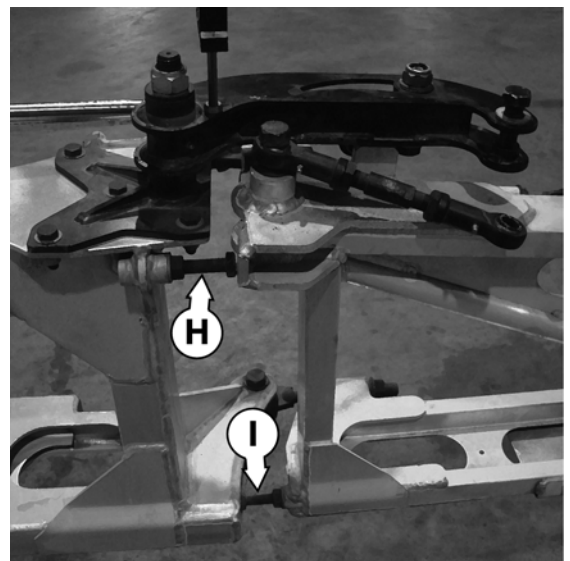
1. Unfold the boom completely.
2. Tighten bolt **A**, **B** and **C** fully use box spanner with extension so it's bolts are very tight.
3. Remove bolt **E** that hold the cylinder at the rod end and lift the cylinder on side.
4. On the tension rod remove bolt **D** and lift out the tension rod.



5. The vertical adjustment is done by ball joints **F** and **G**. Loosen the lock nut and work on the other nut until the 2nd outer is horizontal.



6. Loosen the lock nut and pre-adjust the two stops **H** and **I** until the boom is lined up perfectly.



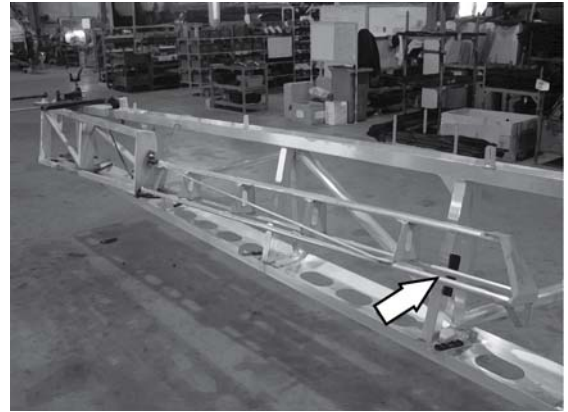
7. Fold the 1st outer section by hand until it rest on the wing rest on the 2nd outer section. If the 2nd outer section is to high or to low unfold the wing again.



NOTE! Picture shows 36m boom and it doesn't have rest support instead it just have a rubber support.



ATTENTION! The boom rest are preset and should not be moved. Instead following instruction below how to adjust the boom so it sits correct on the boom rest.



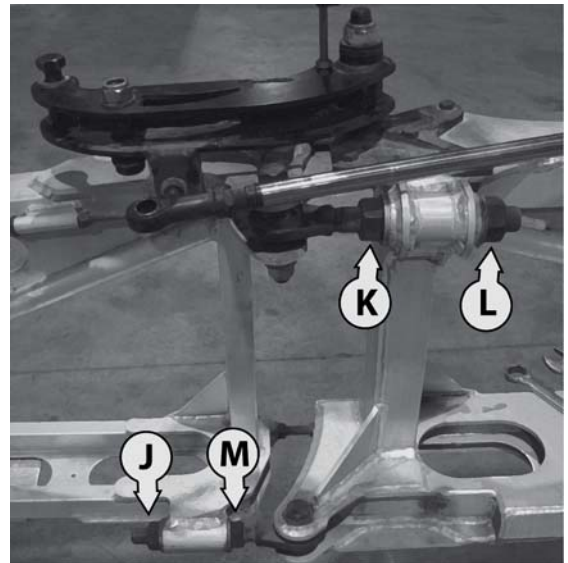
8. By moving the 2nd outer section away from the 1st outer wing will bring the 2nd outer wing down when its folded. By moving the 2nd outer wing closer to 1st outer wing the will bring the 2nd outer section up when its folded.

If the outer section is to high when is folded. Loosen nut **J** and **L**. Turn nut **M** and **K** evenly bringing the wing sections apart.



Note! work has to be done evenly on the nut **M** and **K** otherwise it will change the vertical adjustment.

If the outer section is to low, work on nut **J** and **L** evenly bringing the wing sections closer together.



9. Fold the 2nd outer wing again to see how it sits on the 1st outer section brackets, if necessary unfold the wing again and adjust.
10. When the outer section sits perfect on the brackets. The bolt joints nuts needs to be tightened very hard use a spanner with 1m extension.

11.

12. Check again so booms is straight, if necessary adjust stop **H** and **I** until it perfectly straight.

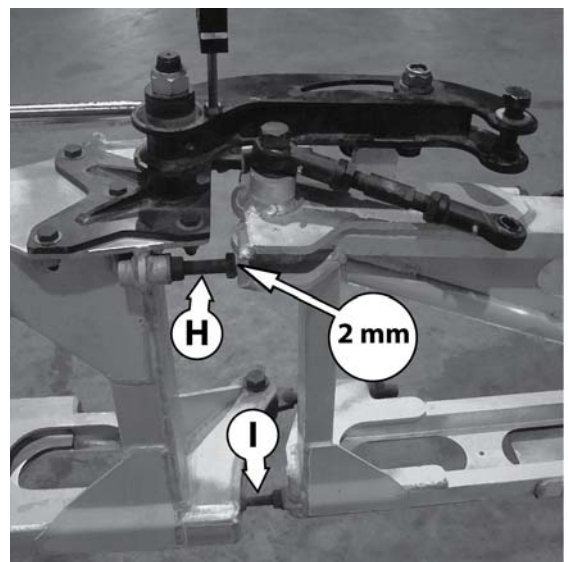


ATTENTION! When the boom is straight stop **I** should be in contact and stop **H** must have a 2mm gap between the head of the bolt a and point of contact, this is very important!



NOTE! When the over-centre lock is locked the 2mm gap will be closed.

13. Re-attach the cylinder rod and the tension rod to the over-centre lock and tighten the bolts very hard. Continue with step 14 "Adjustment over centre lock on next page.



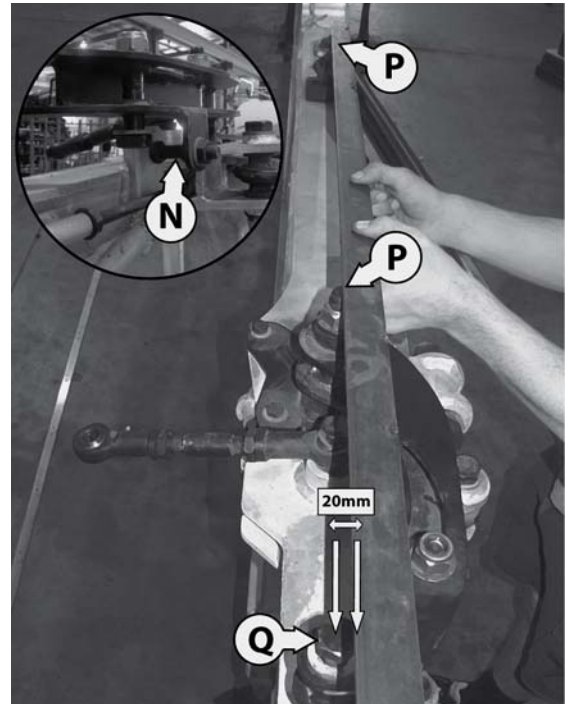
6 - Maintenance

B3 Boom - Adjustment of over-centre lock



ATTENTION! Make sure the horizontal adjustment is correct and that the boom is straight. If not start with "B3 Boom - Horizontal alignment and vertical alignment between 2nd and 1st outer wing" on page 106.

14. Make sure step 3 and 4 is done.
15. Use a straight metal bar or similar, put it in the centre of the bolts **P** and measure so it is 20mm offset to bolt **Q**. If not loosen the lock nut and adjust bolt **N**.



16. Re-attach the tension rod and tighten the bolt very hard.
17. Stand on the opposite side of the folding joint and grab the over-centre lock. Put one foot on the 1st outer wing, then try to lock it by pulling it. It should have a distinct clack sound when it lock into place. If it is too hard to close, decrease distance **X**. If it is too loose increase the distance **X**. Check again that the boom is straight if needed adjust bolt on step **I** and **H**.

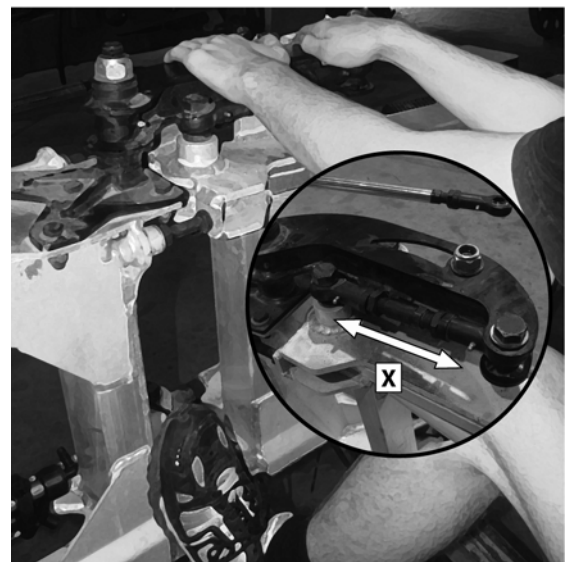


ATTENTION! The tension in the lock should be very hard.

18. When the tension in the lock is correct. Increase distance **X** by turning the tension rod half a turn extra. You should not be able to lock it by hand now!. Tighten the lock nut strongly.



If the tension rod has been changed the cylinder rod also needs to be adjusted go to step 19.



B3 Boom - Adjusting the boom fold cylinders.



ATTENTION! Make sure the horizontal adjustment is correct and that the boom is straight. If not start with "B3 Boom - Horizontal alignment and vertical alignment between 2nd and 1st outer wing" on page 106 on how to adjust it.



ATTENTION! Make sure the adjustment of over-centre lock is correct. If not start with "B3 Boom - Adjustment of over-centre lock" on page 108

19. Screw the eyelet on the cylinder rod fully in.
20. Re-attach the cylinder to the over centre lock, and tighten the bolt very hard.
21. Unfold the wing the hydraulically and make sure the cylinder is fully out. There is now a gap between bolt head **N** and the stop plate.
22. Fold the wing again hydraulically so you can reach the adjustment settings on the cylinder.
23. Loosen the lock nut on the eyelet and turn the cylinder rod counter clock-wise with a wrench one turn at time.



WARNING! Adjustment has to be done in small increments otherwise damage will occur to the cylinder and folding arm.

24. When stop **N** is in contact. Fold the wing again so you can reach the adjustment settings on the cylinder. Turn the cylinder rod so it extends 2-3 mm extra. When the boom is unfolded and the over centre-lock is locked there should be a small bow on the cylinder rod.
25. When the adjustment is done, tighten the lock on the eyelet very hard.
26. When adjustment of the wing has been made it is important to check so the tension when is folded is correct. See chapter "B3/TR5 Boom - Adjustment of the retraction stroke" on page 113 how to check and set correct tension.



DANGER! If tension is too low the boom can unfold while driving.

27. If the wing fold inner/1st outer has been adjusted wing lock needs to be checked so it is correctly adjusted see chapter "Vertical alignment of outer sections with break-away sections" on page 114.

B3boom - Adjustment of wing lock

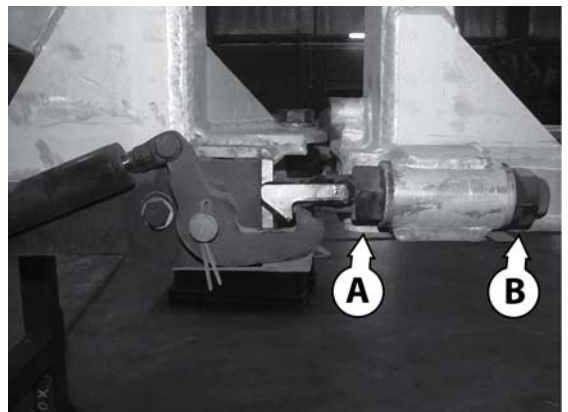
The wing lock is a safety feature and it is important that is correctly adjusted.



ATTENTION! If the wing fold inner/1st outer has been adjusted wing lock needs to be checked so it is correctly adjusted.

Adjusted as below:

1. Unfold the 1st outer wing, make sure the cylinder is fully out and that the over centre lock has engaged.
2. If it needs adjustment. Loosen bolt (A) and (B)
3. If the wing lock is not latching work on nut (A) until it latch. If there is too mush gap work on nut (B) to close the gap. The wing lock is perfectly adjusted if it latches just before the over centre locks.
4. After adjustment open the wing and close it to see if works correct, adjust if needed.
5. When the locks works correct tighten both nuts (A) and (B) very hard!.

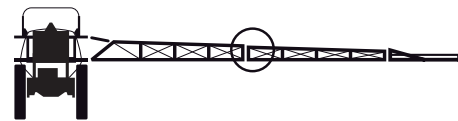
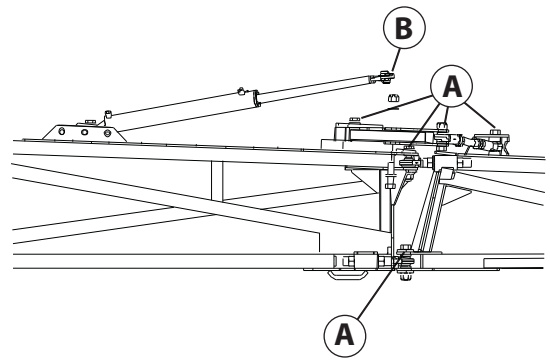


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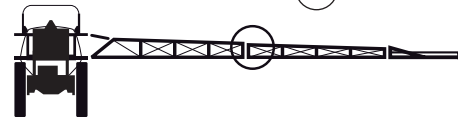
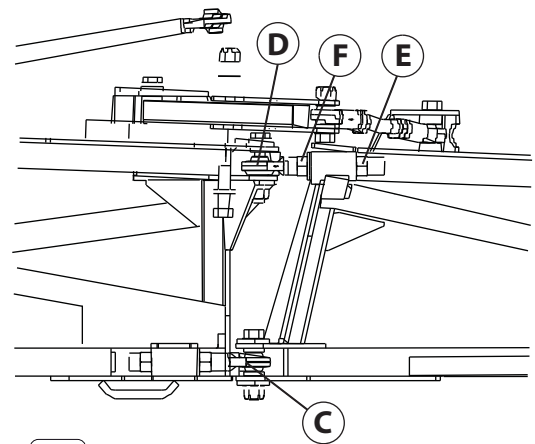
TR5 Boom - Horizontal alignment and vertical alignment of outer sections

This adjustment is for changing the alignment of the outer section with respect to the inner section.

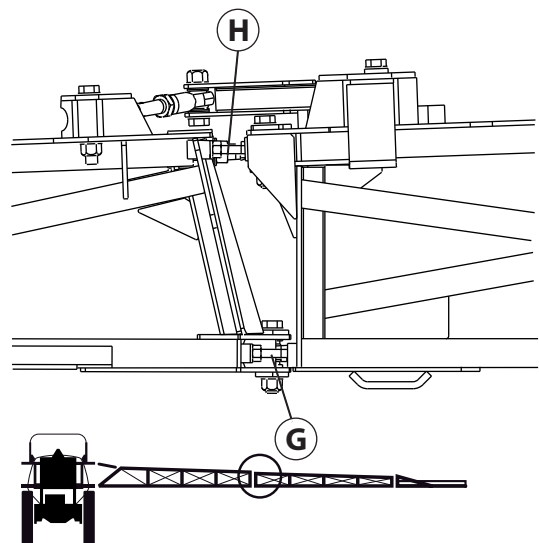
1. Unfold the boom completely.
2. Tighten bolt **A** fully use box spanner.
3. Remove the bolt hold the cylinder at the rod end **B**.



4. The vertical adjustment is done by ball joints **C** and **D**. If the outer end of the outer wing is to low. Loosen nuts **F** and work clockwise on nuts **E**. Tighten the nuts **F** slightly when the boom is perfectly horizontal. Do the opposite direction if the outer wing is to high.

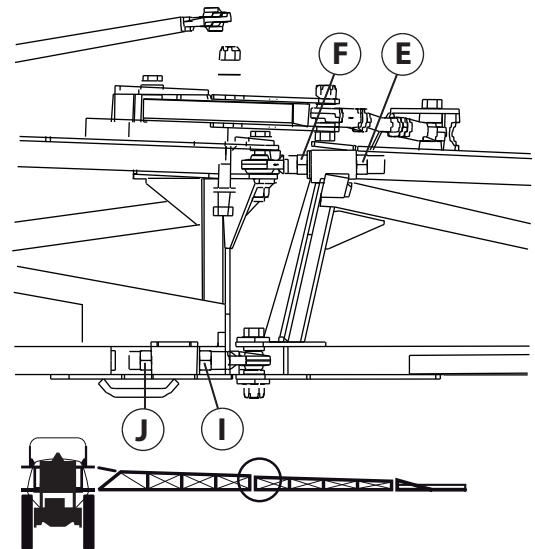


5. The horizontal adjustment is done by adjusting bolt **G** and **H**. Loosen the lock nut and pre-adjust the two stops **G** and **H** until the boom is lined up perfectly.
6. Fold the outer section by hand until it rest on the brackets on the inner section. If the outer section is to high or to low unfold the wing again.

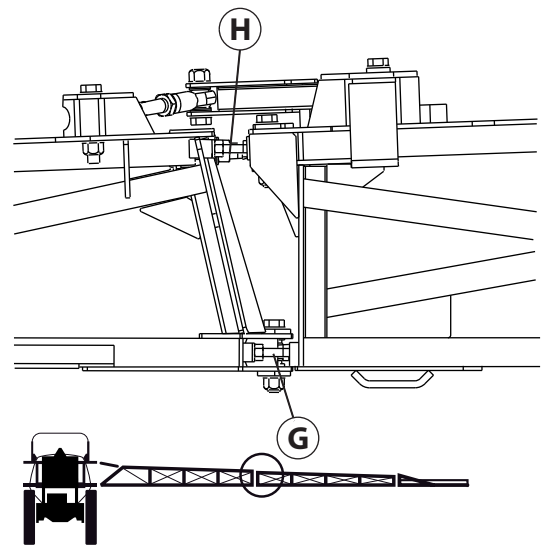


ATTENTION! The brackets on the boom are preset and should not be moved. Instead following instruction below how to adjust the boom sits correct on the brackets.

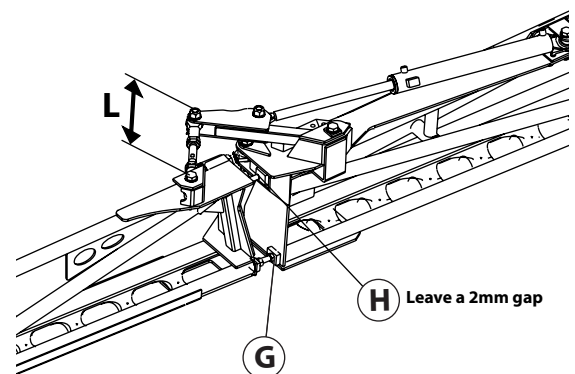
7. By moving the outer section away from the inner section will bring the outer section down when its folded. By moving the outer section closer to inner section the will bring the outer section up when its folded.
8. If the outer section is to high when is folded. Loosen nut **E** and turn nut **F** one turn clockwise, loosen nut **I** and turn **J** one turn counter clockwise. Work has to be done evenly on nut **F** and **J** otherwise it will change the vertical adjustment.
9. Fold the outer wing again to see how it fits on the inner section brackets. if necessary unfold the wing again and adjust.
10. When the outer section sits perfect on the brackets. The bolt joints nuts needs to be tightened very hard use a spanner with 1m extension.



11. Check again so booms align horizontal, if necessary adjust stop **G** and **H** until it perfectly straight.
12. Re-attach the rod end of the cylinder to the hinge arm and bolt it firmly in place.



13. Close the distance **L** as mush as possible then fully extend the cylinder hydraulically. Then increase the distance **L** until the lower stop **G** is touching the other section. With stop **G** touching the other section there should be a 2 mm gap at stop **H**. If not adjust it, this is very important.
14. Continue to increase the distance **L** until stop **H** comes in contact with the other section.
15. Slightly close the cylinder and now again slightly increase the length of double ball joint **L**. On extending the cylinder rod buckle slightly (this buckling increases the rod stroke by approx. 2-3mm). Make sure that the cylinder is fully extended.
16. The force of the cylinder can put the boom slightly out of horizontal alignment, check again and if necessary repeat step 11 and if you need adjust stop **G** and **H**.
17. When the boom is perfectly straight, firmly tighten the locknuts on the stops and on the double ball joints.



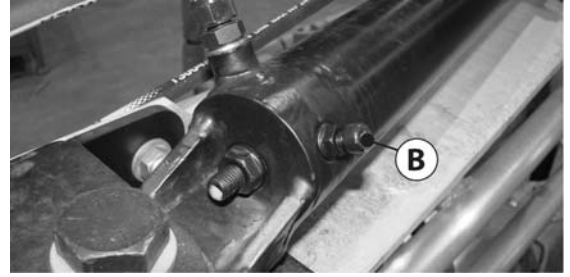
6 - Maintenance

TR5 Boom - Adjustment of the outer wing fold cylinders

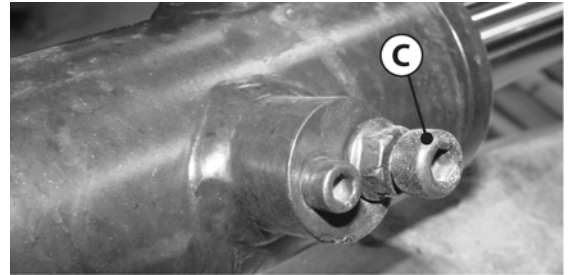
The end stroke of the fold cylinders can be changed. Screw **B** adjusts the end cushioning of the retraction stroke. Screw **C** adjust the end cushioning of the extension stroke.



Attention! Adjustment of the cylinders is recommended to be done when the oil is hot.



1. Fold the boom out halfway, then undo the locknut and tighten screw **B** so it is fully in without forcing. Tighten again the locknut to stop oil from leaking.
2. Fold the boom in
3. The boom will suddenly stop at the point where the cushioning takes effect. Now loosen off screw **B** to control the speed at which the boom moves and prevent it to smash into the bracket. The setting is very sensitive so proceed slowly, rotating the screw one tenth of a turn at a time.
4. When the adjustment is complete, keep a firm hold of screw **B** and tighten the locknut.
5. Do the same procedure for adjusting screw **C** for the extension stroke.



B3/TR5 Boom - Adjustment of the retraction stroke

The end stroke of the fold cylinders can be changed. Screw (B) adjusts the retraction stroke of the cylinder rod, this will affect the tension between the inner wing and outer wing when is folded.



Attention! Adjustment of the cylinders is recommended to be done when the oil is hot.



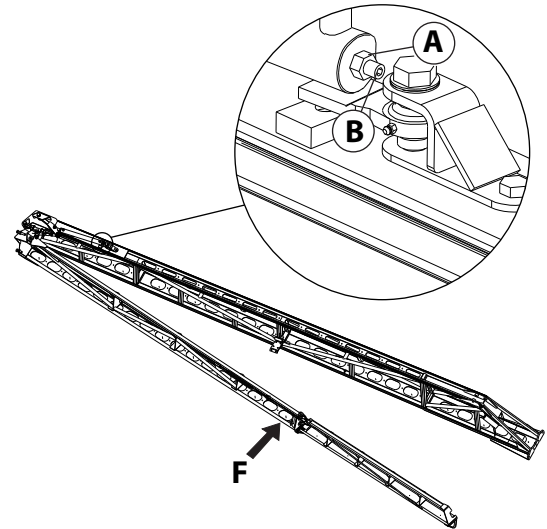
DANGER! If tension is too low the boom can unfold while driving

To check the tension follow the steps below:

1. Turn off the hydraulic pressure if it is on.
2. Fold the outer wing by hand until it sits on the rest brackets on the inner wing.
3. Grab the wing and pull trying to opening it. There should be a strong tension force **F** against the inner wing.

If the tension is too low follow step below to increase the tension.

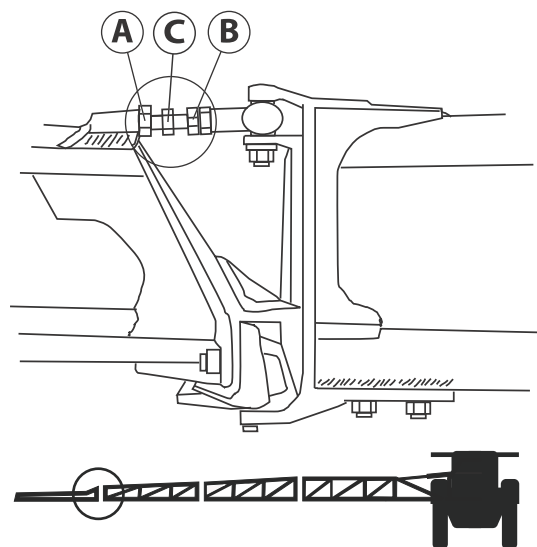
4. Loosen the hydraulic hoses on the cylinder and lock nut (A).
5. Fold the boom in by hand so it's resting on the brackets on the wing brackets
6. Unscrew socket head screw (B), small increments
7. Test again the tension step 3, adjust if needed.
8. When the tension correct. Tighten locknut (A) and re-fit the hydraulic hoses.



6 - Maintenance

Vertical alignment of outer sections with break-away sections

1. Undo counter-nuts **A** and **B**
2. Turn the rod **C** for vertical adjustment of the outer section.
3. Tighten the counter-nuts **A** and **B** again.



B3/TR5 Boom - Adjustment of break-away spring

The end sections of the boom can break away. The spring tension determines activation of break-away when the section encounters an obstacle.

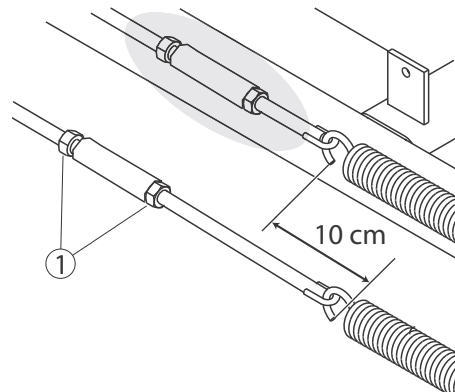
- Change the spring tension by working on the nuts **1**.

The 10 cm distance corresponds to the spring tension.

The tension corresponds to the distance of the spring when idle, to which 10 cm should be added.



NOTE! A tension value that is too low can cause untimely activation of the safety system.



B3/TR5 Boom - Wing tilt adjustment

The tilt is controlled by two single acting hydraulic cylinders that are dampened by nitrogen accumulators. The wings when opened will go below horizontal. (For correct accumulator pressure please see "Nitrogen accumulators" on page 47)



DANGER! If maintenance is going to be done on the tilt cylinder. Make sure the boom rest on sturdy supports before commencing any work.



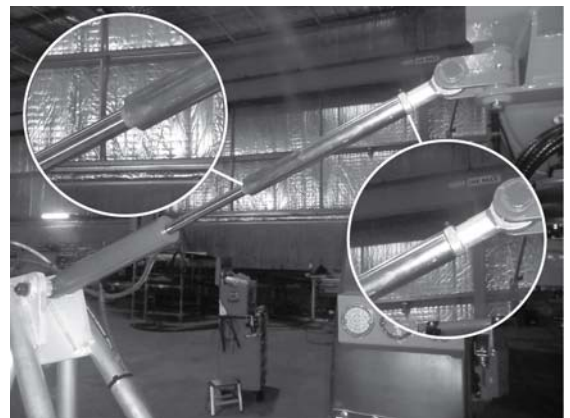
WARNING! If the cylinder is adjusted so the boom will not to go below horizontal then the suspension of the tilt will not work and boom damage will occur. Newer decrease the negative tilt!



If equipped with AutoTerrain the boom will self-adjust so it is completely horizontal when the AutoTerrain is turned on.

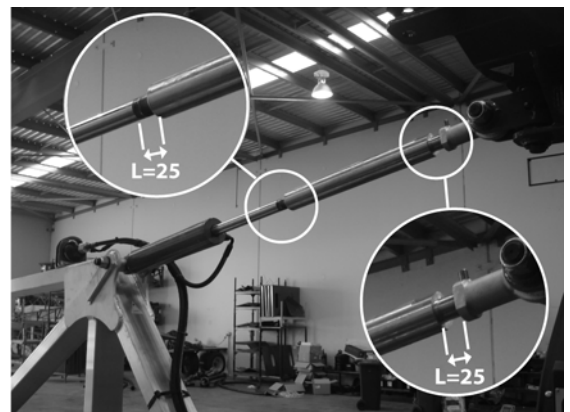
Adjustment TR5 BOOM

On the TR5 boom the extension rod on the wing tilts cylinder should be turned all the way in at both ends (there should be no visible threads). This adjustment makes the boom tilt below horizontal. This adjusted shouldn't be changed.



Adjustment B3 BOOM

The wing tilt adjustment is preset with a 25mm visible thread in both ends as shown. This adjustment makes the boom tilt below horizontal. This adjusted shouldn't be changed.



6 - Maintenance

TDZ Boom - Vertical alignment of boom between first outer, second outer, third outer & breakaway sections



NOTE!

- This is a basic adjustment of the boom. This is only to be carried out if an adjustment of the transport brackets is insufficient.

Procedure is:

1. Loosen the lock nuts (A) and (C).
2. Adjust the nuts at (B) and (D) until the boom sections align.



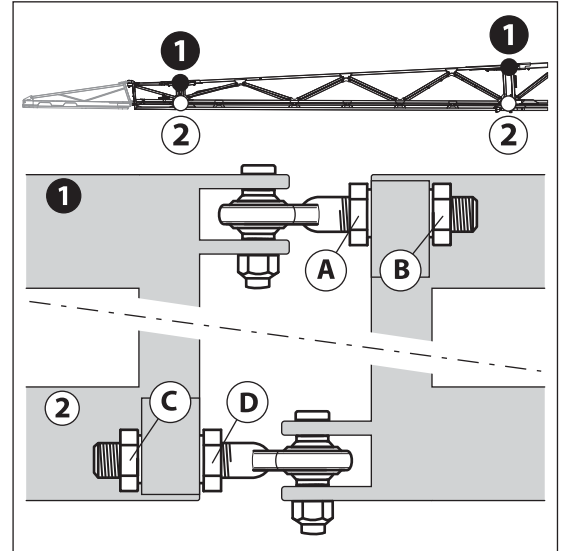
ATTENTION!

- The upper edges of the boom sections must align so the hydraulic lock will engage when folded.



NOTE! It is important that the adjustments are done simultaneously and equally on nuts (B) and (D).

3. Tighten the lock nuts (A) and (C) again.
4. Do the "Horizontal alignment of boom between inner, intermediate and short outer sections" on page 32.



ATTENTION!

- Illustration shows left boom wing.
5. Fold the boom to see if it hits and rests correctly in the transport brackets or locks.
 6. If necessary to readjust, unfold the boom and loosen the nuts (A) and (C) again.
 7. Adjust the nuts at (B) and (D) simultaneously and equally until the boom rests correctly in the lock bracket.



ATTENTION!

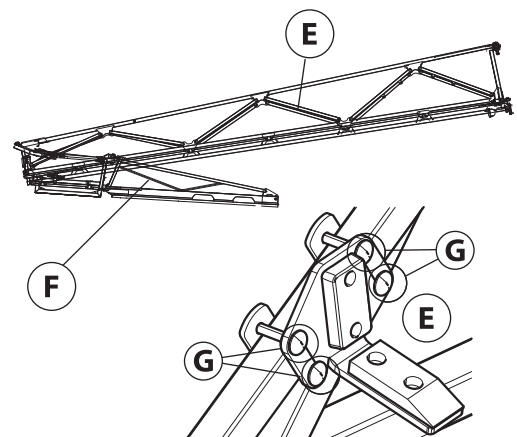
- The upper bolt adjusts only half of the travel, while the lower bolt adjusts the other half.

8. Tighten the lock nuts (A) and (C) to 300-500 Nm.

When folded, check if the boom rests correctly at the transport pads between second outer section (E) and third outer section (F).

If adjustment is necessary:

1. Loosen the four bolts (G) holding the bracket.
2. Reposition the bracket.
3. Tighten the four bolts (G) again.



TDZ Boom - Wing sections lock mechanisms and horizontal alignment of first & second outer and second & third outer/breakaway

Wing-lock mechanisms are those positioned at the first & second and the second & third outer wing fold hinge points. They lock the wing sections together in the open position minimising movement between them during operation. They are spring applied and hydraulically released. Any misalignment between the spigot and lock plate will prevent locks from engaging and allow the wing sections to move uncontrolled. Monitor the spigot and lock plate for any sign of burring which would indicate misalignment and adjusting as required.

Boom must be unfolded and the hydraulic lock locked.

Procedure is:

1. Loosen lock nut (A).
2. Adjust the lock bolt (B) until the boom sections align.

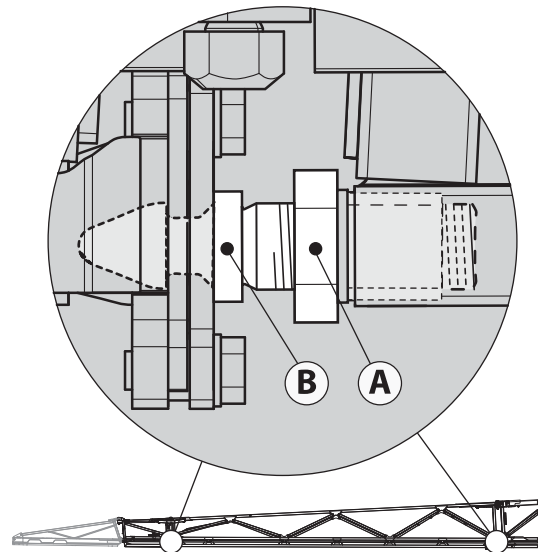


NOTE! The lock bolt (B) is exccentric. Therefore it is important to check that it centres on the hole in the lock mechanism while adjusting.

3. Tighten the lock nut (A) again.



WARNING! The boom must not be operated without the wing locks correctly engaged otherwise wing sections will be free to flounder, breakaway or whip around and damage the boom. Wing locks must be monitored observing burred steel on the nose of the spigot and lock plate for any misalignment and adjusted as required.



TDZ Boom - Transport wing fold lock adjustment

The fold lock mechanism positioned on the top cord of the first outer wing sections is designed to retain and lock the second outer wing section during transport. The lock is spring applied and hydraulically released. Any misalignment will prevent the lock mechanism engagement and allow the boom to flounder in transport. If there has been any boom damage the lock mechanism may need to be realigned.

The "Vertical alignment of boom between first, second and third outer sections" on page 25 must be done prior to this adjustment.

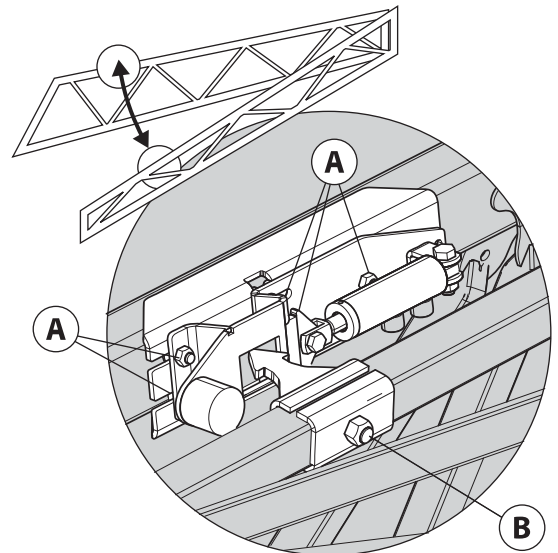
The fold lock adjustment is divided into two parts: Vertical and horizontal adjustment:

Horizontal adjustment

1. Loosen the five bolts (A) on the fold lock bracket.
2. Reposition the fold lock until the hook is aligning to the centre of the fold lock hole.
3. Tighten the five bolts (A) on the fold lock bracket.

Vertical adjustment

1. Loosen the bolt (B).
2. Turn the hook upside down if needed for better fit.
3. Tighten the hook bolt (B) again.

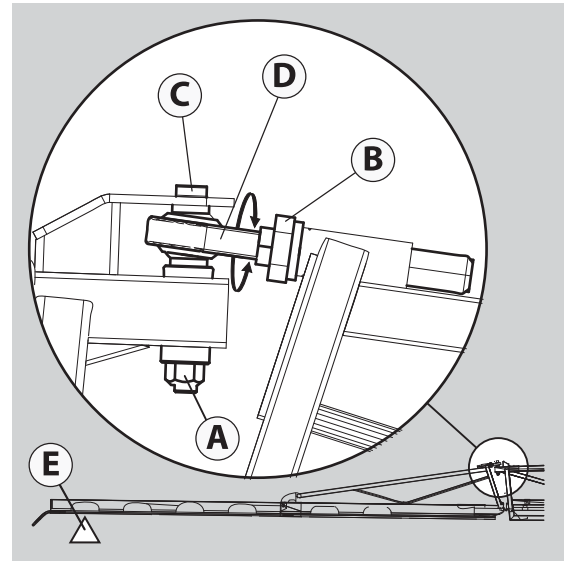


WARNING! Any misalignment of the wing sections will prevent the lock mechanism from engaging and will allow the boom to flounder during transport which may damage the boom.

6 - Maintenance

TDZ Boom - Vertical alignment of breakaway sections

1. Support the breakaway section with a jack stand (E).
2. Loosen lock nut (B).
3. Remove nut (A).
4. Take out bolt (C).
5. Turn eye rod (D) to adjust the section.
6. Refit the bolt (C).
7. Remove the jack stand to see if the sections align.
8. If not, support the breakaway with the jack stand (E) again and repeat point 4-7 until the sections align.
9. Tighten nut (A).
10. Tighten the lock nut (B)

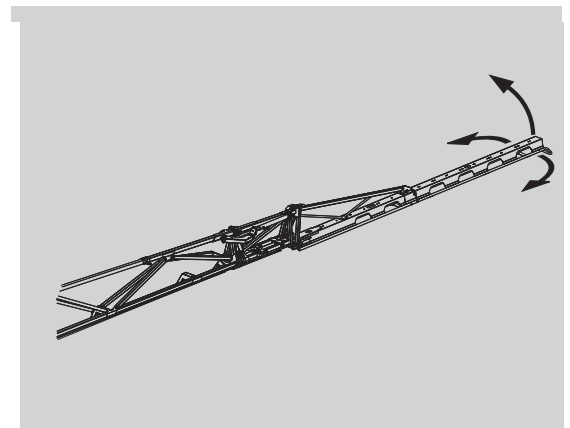


TDZ Boom - Breakaway section adjustment

The breakaway is part of the third outer section of the boom and is designed to breakaway in the event you make contact with something for example a fence. The breakaway is held in position under spring tension and if forced is designed to breakaway in three planes as illustrated.



WARNING! If the breakaway hits hard enough it may be damaged beyond repair.



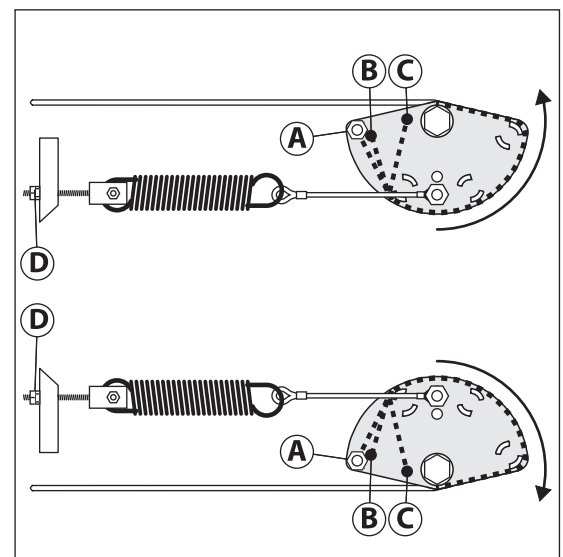
The progressive breakaway function is adjusted by altering the spring attachment point on the progressive mechanism.

The turning "half circle" part should be in a rest position as in the picture. If out of adjustment, the "half circle" part is turned more or less as in the picture and needs adjustment:

1. Loosen the nut (D) on the fork bolt to slacken the spring.
2. Remove the bolt (A) on the turning progressive mechanism that holds the breakaway wire.
3. Reposition the bolt into hole (B) or (C) to adjust the "half circle" rest position.
4. Tighten the nut (D) on the fork bolt until a suitable spring load is achieved.



ATTENTION! Observe the amount of spring load required when driving with the sprayer. If the breakaway sections release too much, the spring load must be increased.



ParaLift Lock

The boom is mechanically held in transport position with paralift lock mechanisms that automatically engage when the first outer is closing. The folded channel-section locks are fixed to the top paralift arm and engage directly on the top of the paralift cylinders when lowered for transport. This means the boom is not supported by hydraulic oil pressure when in transport.



WARNING! when the sprayer is being transported along rough road and is bounced over potholes, in extreme cases there is a risk that the lock arms can disengage. Paralift locks should be checked before and after transport to ensure positive lock engagement.

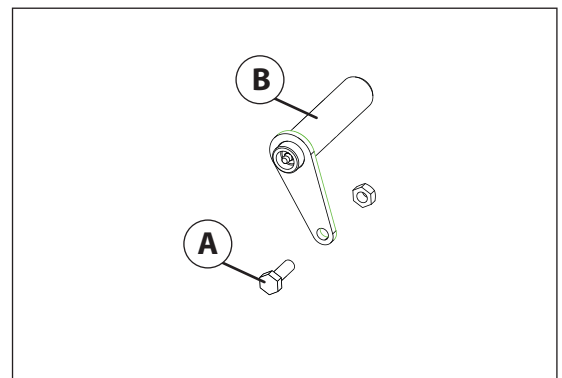
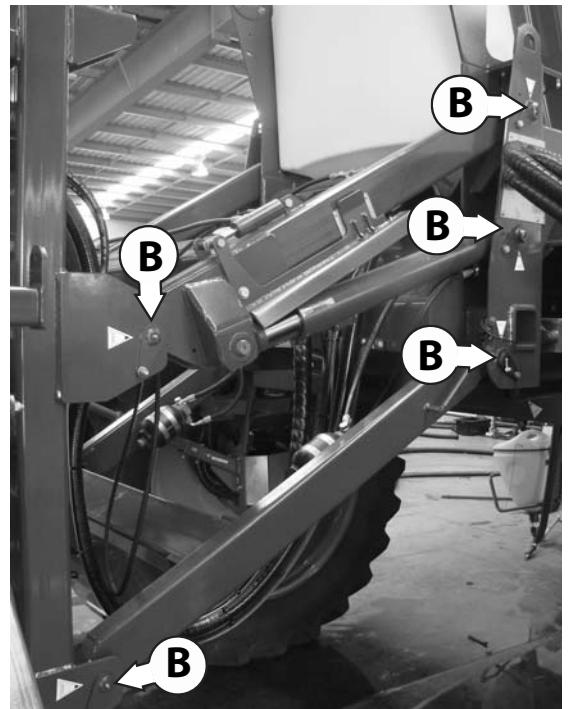


ParaLift wear bush renewal

The ParaLift is used to raise and lower the boom height to suit the terrain however with AutoTerrain small adjustments are being made continuously. Greasing the ParaLift pivot points on a regular basis will prolong the life of the wear bushes.

Inspect and replace the wear bushes before they are worn through.

1. Connect the trailer to a tractor and unfold the booms to working position.
2. Lift the boom centre frame with a lifting device and support it until the load is taken off the parallelogram arms.
3. Remove the bolts (A), pull out the pins (B) at one of the upper parallelogram arms and replace the wear bushes.
4. Refit the arm.
5. Repeat this on the other upper arm.
6. The lower arms must be disconnected simultaneously.
7. Grease all grease nipples.
8. Remove the lifting gear again.



Error messages

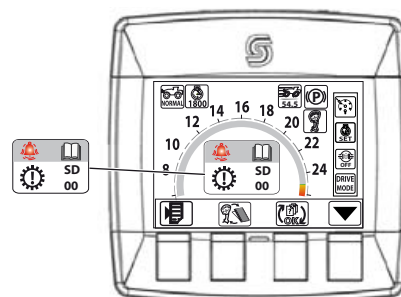
Cabin error codes

The messages below will be displayed when a fault appears on the system of the cab's air conditioning

List of error codes

ERROR #	Description	Fault operation
01	High pressure switch - Wiring or cycling (2 in 1 minute)	Heat mode - compressor clutch disabled
02	Low pressure switch - Wiring or open for 1 minute	Heat mode - compressor clutch disabled only while low pressure switch is open
03	Blower speed select pot open/shorted to power	Auto blower speed
04	temperature select pot open /shorted to power	72°F Setpoint
05	Recirc. pot open/shorted to power	Not used on combine
06	Mode select pot open/shorted to power	Not used on combine
07	Cab temp sensor wiring - open, short, ground, power	Manual mode - compressor clutch disabled
08	Evap temp sensor wiring - open, short, ground, power	Heat mode - compressor clutch disabled
09	Outlet tmp sensor wiring - open, short, ground, power	Doesn't limit blower speed on startup
10	Outside temp sensor wiring - open, short, ground, power	Not used on combine
12	Cab pressure sensor wiring	Not currently implemented
14	Clutch output fault (overcurrent, short to ground)	Not currently implemented
15	Defog light output fault (overcurrent, short to ground)	Not currently implemented
15	Defog light output fault (overcurrent, short to ground)	Not currently implemented
19	No data from control module	Depends on cause of problem

Transmission error codes



Error codes	Description	Error codes	Description
001	Low battery voltage	070	Loop error
002	Low battery voltage	071	PWM2 current loop error
003	12V sensor low supply voltage	074	Loop error pump 1
004	12V sensor high supply voltage	080	Brake pressure sensor signal out of range
005	5V sensor low supply voltage	083	CAN bus communication error: signal not received
006	5V sensor high supply voltage	084	High pressure sensor signal out of range
007	Stack overflow	092	Joystick sensor error
008	E2prom memory error	097	Analogue mode selector sensor error
009	FLASH memory error	100	Joystick limitation control error
010	RS232 memory error	200	Offroad SD: high battery voltage
011	CAN bus connection error	201	Offroad SD: low battery voltage
012	Current return protection	202	Offroad SD: 12V supply voltage sensor out of range
020 to 045	Internal system error		
051	MAF loading error		
052	Inconsistent key		
053	Inconsistent MAF		
054	Inconsistent input/output		
055	Error in sensitive parameter		
056	SDPHASE code error		
057	Checksum error		
058	Min/Max error in parameter		

7 - Fault finding

CUMMINS engine error codes

SPN	Component / Location	Description (Error location)	FMI
29	Hand throttle	Cable break or short circuit, signal implausible compared to signal of idle sensor	2, 3, 4, 11
84	Vehicle speed signal	Speed above target range, signal missing or implausible	0, 8, 12, 14
91	Accelerator pedal	Cable break or short circuit, signal implausible compared to signal of idle sensor (analog pedal)	2, 3, 4, 11
91	Accelerator pedal	Cable break or short circuit, bad PWM signal range or frequency (digital pedal)	2, 8
91	Accelerator pedal	Bad PWM pulse-width repetition rate (digital pedal)	8, 11
94	Fuel low pressure sensor	Cable break or short circuit	3, 4, 11
94	Fuel low pressure	Below target range with system reaction	2, 11
97	Fuel filter water level sensor	Cable break or short circuit	3, 4, 11
97	Water level in fuel filter	Above target range	11, 12
100	Oil pressure sensor	Cable break or short circuit	0, 2, 3, 4
100	Oil pressure sensor	Pressure value implausible low	1, 11
100	Oil pressure	Above target range	0, 11
100	Oil pressure	Below target range	1, 11
102	Charge air pressure sensor	Cable break or short circuit	2, 3, 4
102	Charge air pressure	Outside target range with system reaction	2, 11
105	Charge air temperature sensor	Cable break or short circuit	2, 3, 4, 11
105	Charge air temperature	Outside target range with system reaction	0, 11
107	Air filter condition	Pressure loss above target range with system reaction	0, 11
108	ECU internal error	Ambient pressure sensor defective	2, 3, 4, 11
110	Coolant temperature sensor	Cable break or short circuit	2, 3, 4
110	Coolant temperature	Outside target range with system reaction	0, 11
111	Coolant Level	Outside target range with system reaction	1, 11
157	Rail pressure sensor	Cable break or short circuit	3, 4, 11
157	Rail pressure sensor	Deviation of signal during start or after-run above target range	0, 1, 11
158	Terminal 15	Ignition ON not detected	11, 12
168	Battery	Voltage below target range	0, 1, 11
168	Battery voltage	Above target range with system reaction	2, 11
174	Fuel temperature sensor	Fuel temp. sensor: Cable break or short circuit	3, 4, 11
174	Fuel temperature	Above target range with system reaction	0, 11
175	Oil temperature sensor	Cable break or short circuit	2, 3, 4
175	Oil temperature	Below target range with system reaction	0, 11
190	Engine speed sensor	Engine running with cam-shaft speed signal only	11, 12
190	Engine speed sensor	Speed signal from cam-shaft bad or missing	8, 11, 12
190	Engine speed sensor	Speed signals from crank-shaft bad or missing	8, 11, 12
190	Engine speed sensor	Speed signals of crank-shaft and cam-shaft are phase-shifted	2, 11
190	Overspeed	Engine overspeed with system reaction	0, 11
190	Overrun conditions	Overrun conditions with system reaction	11, 14
520	CAN message	Missing (message "TSC1-TR")	11, 12
563	Main relay	Short circuit to ground or emergency shut-off (relay 3)	7, 11, 12
624	Diagnostic lamp	Cable break or short circuit, disabled by ECU	2, 3, 4, 5
630	ECU internal error	EEPROM memory access	11, 12
639	CAN bus off-state	Cable break or short circuit, off-state (CAN bus A)	11, 14

SPN	Component / Location	Description (Error location)	FMI
651	Single injector	Short circuit (injector 1)	3, 4, 11, 13
651	Single injector	Cable break (injector 1)	5, 13
652	Single injector	Short circuit (injector 2)	3, 4, 11, 13
652	Single injector	Cable break (injector 2)	5, 13
653	Single injector	Short circuit (injector 3)	3, 4, 11, 13
653	Single injector	Cable break (injector 3)	5, 13
654	Single injector	Short circuit (injector 4)	3, 4, 11, 13
654	Single injector	Cable break (injector 4)	5, 13
655	Single injector	Short circuit (injector 5)	3, 4, 11, 13
655	Single injector	Cable break (injector 5)	5, 13
656	Single injector	Short circuit (injector 6)	3, 4, 11, 13
656	Single injector	Cable break (injector 6)	5, 13
657	Single injector	Short circuit (injector 7)	3, 4, 11, 13
657	Single injector	Cable break (injector 7)	5, 13
658	Single injector	Short circuit (injector 8)	3, 4, 11, 13
658	Single injector	Cable break (injector 8)	5, 13
676	Air heater relay	Cable break or wrong connection	4, 11
676	Air heater relay	Inoperable during shut-off	2, 5, 11
677	Start relay	Start relay (high side): Short circuit	3, 4, 11
677	Start relay	Start relay (low side): Cable break or short circuit, disabled by ECU	3, 4, 5, 11
701	Reserve output	Short circuit to Ubatt (output 1)	11
701	Reserve output	Short circuit to ground (output 1)	11
701	Reserve output	Cable break or ECU internal error (output 1)	11
702	Reserve output	Short circuit to Ubatt (output 2)	11
702	Reserve output	Short circuit to ground (output 2)	11
702	Reserve output	Cable break or ECU internal error (output 2)	11
703	Engine operating signal lamp	Cable break or ECU internal error	2, 3, 4, 5
704	Coolant temperature warning lamp	Cable break or short circuit	11
705	Oil pressure warning lamp	Cable break or short circuit	2, 3, 4, 5
729	Air heater relay	Cable break or short circuit	3, 4, 5, 11
730	Air heater magnetic valve	Cable break or short circuit	3, 4, 5, 11
898	CAN message	Missing (message "TSC1-TE")	11, 12
923	Engine power output	Engine power output: Cable break or short circuit	2, 3, 4, 5
975	Fan actuator	Fan actuator: Cable break or short circuit	2, 3, 4, 5
1072	Engine brake (internal)	Internal engine brake: Cable break or short circuit	3, 4, 5, 11
1074	Engine brake flap actuator	Engine brake flap actuator: Cable break or short circuit	3, 4, 5, 11
1079	ECU internal error	Wrong voltage of internal 5V reference source 1	3, 4, 11
1080	ECU internal error	Wrong voltage of internal 5V reference source 2	3, 4, 11
1081	Preheating signal lamp	Cable break or short circuit	2, 3, 4, 5
1109	Shut-off request	Shut-off request ignored by operator	2, 11
1231	CAN bus off-state	Cable break or short circuit, off-state (CAN bus B)	11, 14
1235	CAN bus off-state	Cable break or short circuit, off-state (CAN bus C)	11, 14
1237	Override switch	Switch hangs	2, 11

7 - Fault finding

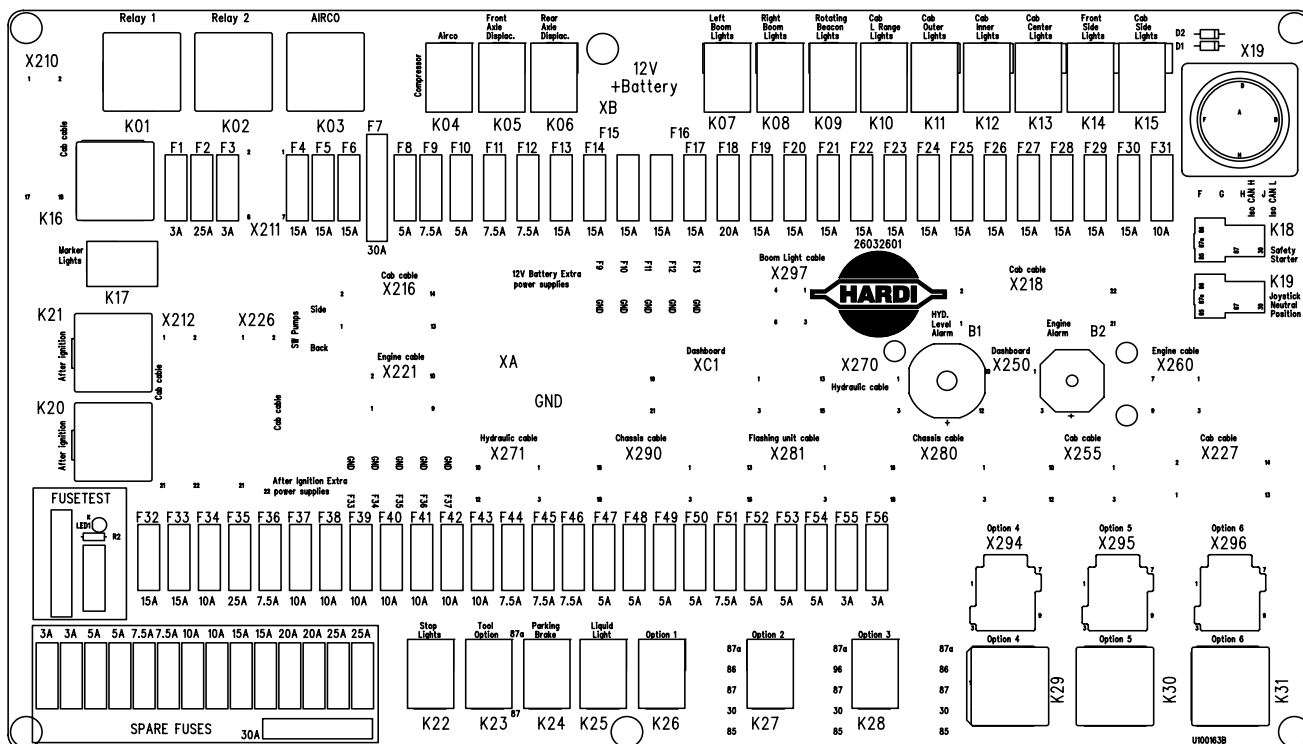
SPN	Component / Location	Description (Error location)	FMI
1322	Multiple cylinders	Misfire detected	11, 12
1323	Single cylinder	Misfire detected (cylinder 1)	11, 12
1324	Single cylinder	Misfire detected (cylinder 2)	11, 12
1325	Single cylinder	Misfire detected (cylinder 3)	11, 12
1326	Single cylinder	Misfire detected (cylinder 4)	11, 12
1327	Single cylinder	Misfire detected (cylinder 5)	11, 12
1328	Single cylinder	Misfire detected (cylinder 6)	11, 12
1346	Misfire	Misfire detected with system reaction	0, 11
1450	Single cylinder	Misfire detected (cylinder 7)	11, 12
1451	Single cylinder	Misfire detected (cylinder 8)	11, 12
1638	Customer-specific sensor	Cable break or short circuit (sensor 2)	3, 4, 11, 12
1638	Customer-specific temperature	Outside target range with system reaction (temperature 2)	2, 11
2634	Main relay	Short circuit to Ubatt (relay 1)	3, 11
2634	Main relay	Short circuit to ground (relay 1)	4, 11
2634	Main relay	Short circuit to ground or emergency shut-off (relay 2)	7, 11, 12
2634	Main relay	Short circuit to ground or emergency shut-off (relay 3)	7, 11, 12
2791	EGR actuator (external)	Short circuit to Ubatt	3, 11
2791	EGR actuator (external)	Short circuit to ground	4, 11
2791	EGR actuator (external)	Cable break or ECU internal error	2, 5, 11
2791	EGR actuator (external)	Cable break or short circuit	2, 3, 4, 5
523212	CAN message	Missing (message "EngPrt" = engine protection)	11, 12
523216	CAN message	Missing (message "PrHtEnCmd" = Preheat and engine command)	11, 12
523218	CAN message	Missing (message "RxCCVS" = cruise control)	11, 12
523222	CAN message	Missing (message "TCO1" = speedo signal)	11, 12
523238	CAN message	Missing (message "SwtOut" = switch outputs)	11, 12
523239	CAN message	Missing or value abote target range (message "DecV1" = pseudo pedal)	2, 12
523240	CAN message	Missing (message "FunModCtl" = function mode control)	11, 12
523350	Multiple injectors	Short circuit (cylinder bank 1)	3, 4, 11, 13
523351	Multiple injectors	Cable break (cylinder bank 1)	5, 13
523352	Multiple injectors	Short circuit (cylinder bank 2)	3, 4, 11, 13
523353	Multiple injectors	Cable break (cylinder bank 2)	5, 13
523354	ECU internal error	Injector power stage A	2, 3, 12, 14
523355	ECU internal error	Injector power stage B	12
523370	Rail pressure	Compression test active: Rail-pressure monitoring is going to be disabled	11, 14
523420	ECU internal error	Watchdog counter exceeds maximum	11, 14
523450	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 1)	2, 3, 4, 11
523451	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 2)	2, 3, 4, 11
523452	Multi state switch	Cable break or short circuit, input voltage outside target range (switch 3)	2, 3, 4, 11
523470	Rail pressure limiting valve	Opening failure	2, 11, 12, 14
523470	Rail pressure limiting valve	Opening failure with system reaction	11, 12
523490	ECU internal error	Redundant shut-off conditions detected	3, 4, 11, 12
523500	CAN message	Time-out of at least one sended message	11, 12

SPN	Component / Location	Description (Error location)	FMI
523550	Terminal 50	Engine start switch hangs	11, 12
523550	ECU internal error	Time processing unit (TPU) defective	2, 11
523561	Begin of injection period	Outside target range or missing (cylinder 1)	2
523562	Begin of injection period	Outside target range or missing (cylinder 2)	2
523563	Begin of injection period	Outside target range or missing (cylinder 3)	2
523564	Begin of injection period	Outside target range or missing (cylinder 4)	2
523565	Begin of injection period	Outside target range or missing (cylinder 5)	2
523566	Begin of injection period	Outside target range or missing (cylinder 6)	2
523567	Begin of injection period	Outside target range or missing (cylinder 7)	2
523568	Begin of injection period	Outside target range or missing (cylinder 8)	2
523600	ECU internal error	Serial communication interface defective	11, 12
523601	ECU internal error	Wrong voltage of internal 5V reference source 3	3, 4, 11
523602	Fan speed	Above target range with system reaction	2, 11
523604	CAN message	Missing (message "RxEngTemp" = engine temperature)	11, 12
523605	CAN message	Missing (message "TSC1-AE")	11, 12
523606	CAN message	Missing (message "TSC1-AR")	11, 12
523607	CAN message	Missing (message "TSC1-DE")	11, 12
523608	CAN message	Missing (message "TSC1-DR")	11, 12
523609	CAN message	Missing (message "TSC1-PE")	11, 12
523610	CAN message	Missing (message "TSC1-VE")	11, 12
523611	CAN message	Missing (message "TSC1-VR")	11, 12
523612	ECU internal hardware monitoring	A recovery occurred which is stored as protected	11, 14
523612	ECU internal hardware monitoring	A recovery occurred which is not stored	11, 14
523612	ECU internal hardware monitoring	A recovery occurred which is visible in the error memory	11, 14
523612	ECU internal hardware monitoring	Overvoltage	3, 11
523612	ECU internal hardware monitoring	Undervoltage	4, 11
523613	Rail pressure	Positive deviation (speed dependent) outside target range	0, 11
523613	Rail pressure	Positive deviation (flow dependent) outside target range (=> Leakage!)	0, 11
523613	Rail pressure	Negative deviation (flow dependent) outside target range	0, 11
523613	Rail pressure	Negative deviation (speed dependent) outside target range	1, 11
523613	Rail pressure	Pressure above target range	0, 11
523613	Rail pressure	Implausible (leakage, injector needle blocked in open position)	2, 11
523615	Metering unit valve	Flow rate outside target range	3, 4, 11
523615	Metering unit valve	Not connected or output disabled	5, 11, 12
523615	Metering unit valve	Short circuit to Ubatt	11, 12
523615	Metering unit valve	Short circuit to ground	11, 12
523617	ECU internal error	Communication with chip CJ940 disturbed	11, 12
-	Customer-specific sensor	Cable break or short circuit (sensor 1)	2, 3, 4, 11
-	Customer specific temperature	Outside target range with system reaction (temperature 1)	2, 11

7 - Fault finding

Electrical incidents

Main circuit fuses and relays (U100163B)



U100163B

Code		Description	Code	Amp. (A)	Description
F1	3.0	Outdoor cab light timer	F29	15A 20 A	Cab front inner haloGen lights Cab front inner XENON lights
F2	10 A	side lights/backlighting	F30	15 A	starter contactor
F3	3 A	12 V BAT - ceiling	F31	10 A	starter solenoid
F4	15 A	flasher unit - control	F32	15 A	dipped beam
F5	15 A	not used	F33	15 A	main beam headlights
F6	15 A	not used	F34	10 A	work area lighting (optional)
F7	30 A	12V BAT - air conditionning	F35	15 A	windscreen washer pump - windscreen wipers
F8	5 A	12V BAT - car radio	F36	7.5 A	horn
F9	7.5 A	timer control	F37	10 A	12 V after ignition
F10	5 A	air conditioning compressor	F38	10 A	12 V after ignition - optional
F11	7.5 A	hydraulic ECU	F39	10 A	12 V after ignition - optional
F12	7.5 A	hydraulic ECU	F40	10 A	12 V after ignition - adjustable track width
F13	15 A	12V BATT - optional	F41	10 A	12 V after ignition - OFFROAD controller
F14	15 A	12V BATT - optional	F42	10 A	road- parking
F15	15 A	12V BATT - optional	F43	10 A	stop lights
F16	15 A	12V BATT - optional	F44	7.5 A	12 V after ignition - hydraulic ECU
F17	15 A	12V BATT - optional	F45	7.5 A	permanent 12 V battery - console
F18	20 A	flasher unit	F46	7.5 A	12 V after ignition -hydraulic ECU
F19	15 A	boom ligts 1 and 2 (HC9500 only)	F47	5 A	hydraulic ECU
F20	15 A	boom ligts 3 and 4 (HC9500 only)	F48	5 A	not used
F21	15 A	hazard lights	F49	5 A	brake pressure - display alarms
F22	15 A	cigarette lighter - 12V sockets	F50	5 A	hydraulic oil level alarm
F23	15 A	seat compressor unit	F51	7.5 A	12 V after ignition - engine error
F24	15 A 20 A	Cab front outer halogen lights Cab front outer xenon lights	F52	5 A	12 V after ignition -HC9500 console
F25	15.0 A	Right front cab lights	F53	5 A	12 V after ignition - right and left direction indicator
F26	15 A	Cab front center haloen lights	F54	5 A	12 V after ignition - cab switches
F27	15 A	not used	F55	3 A	12 V after ignition - air conditioning and car radio
F28	15 A	Hood working halogen lights	F56	3 A	12 V after ignition - J1939 diagnostic socket



Always use the appropriate fuse listed in the table located in the fuses box.

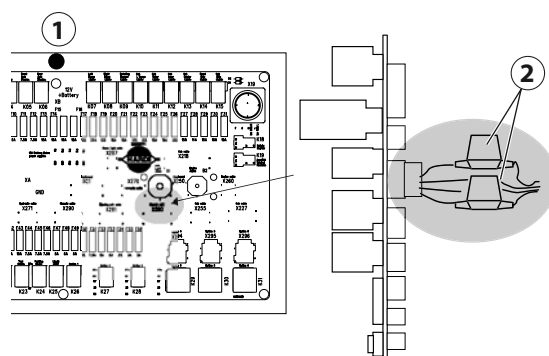
Relays	Description	Relays	Description
K01	not used	K16	not used
K02	not used	K17	backlighting - side lights
K03	air conditioning power	K18	engine starter control
K04	air conditioning compressor	K19	forward handle neutral position
K05	Not used	K20	circuit control after contact
K06	Not used	K21	circuit control after contact
K07	HC9500 only (boom lights 3 and 4)	K22	BRAKE lights
K08	HC9500 only (boom lights 1 and 2)	K23	ROAD mode
K09	hazard lights	K24	parking brake
K10	not used	K25	work area lighting (optional)
K11	right rear cabin lights	K26	not used
K12	left rear cabin lights	K27	not used
K13	not used	K28	not used
K14	front cabin lights		
K15	Front side of the cab lights		

7 - Fault finding

Position Lights Fuse

Two fuses are placed at the rear of the main printed circuit to protect the lighting circuit (position lights).

- Remove the screw (REF.1) and rock the main printed circuit to access the fuses.
- Check and replace the defective fuse (7.5 A).



Spare fuses are available on the main printed circuit.



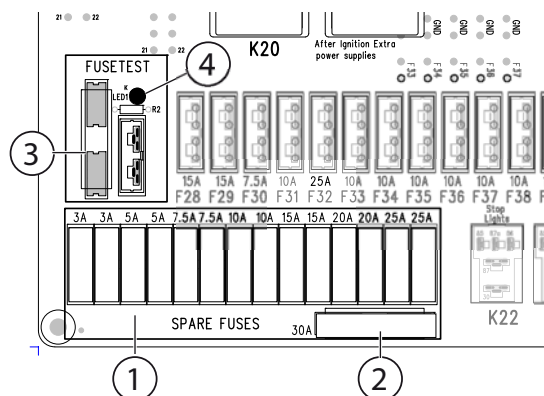
NOTE! Ensure that the replacement fuse has the same capacity as the original fuse.

Fuse test

The main circuit has "Autofuse" type spare fuses fig.1 and a "Maxifuse" fig.2.

To test a fuse.

- Remove the fuse to be checked and place it in the fuse holder fig.3 according to the model.
If the indicator fig.4 lights up, this means that the fuse is in good working order. If not, use an "Autofuse" fig.1 or "Maxifuse" fig.2 replacement fuse.



NOTE! Ensure that the replacement fuse has the same capacity as the original fuse.

Boom Controller fault codes

Below is a table of Alarms, Warnings etc. relevant for TERRA FORCE, which may occur in the Terminal display. See separate instruction book for a full list of fault codes.



NOTE! The ID is the fault identifier, and Pr is alert priority. These are useful for service staff.

ID	Pr	Type	Text at display detail	Criteria for fault Operations disabled	Full screen Help text
118	5	Warning	Pendulum locking failed.	Time-out on sensor signal when attempting to lock. Reset by attempt to lock.	Attempt to move Pendulum lock cylinder did not succeed within the given time frame. Check the hydraulics connections and pressure. Check Pendulum lock position sensor adjustment.
119	6	Warning	Pendulum release failed.	Time-out on sensor signal when attempting to unlock. Reset by attempt to release.	Pendulum is locked unintentionally. The suspension will be damaged. Check the hydraulics connections and pressure. Check Pendulum lock position sensor adjustment.
120	7	Warning	STOP! PENDULUM LOCKED!	Time-out on sensor signal when attempting to unlock and speed exceeds max. speed with locked pendulum. Reset by removal of cause (either unlock succeeded or decrease speed).	Pendulum is locked unintentionally when attempting to spray. The suspension will be damaged. Check the hydraulics connections and pressure. Check Pendulum lock position sensor adjustment.
121	8	Alarm	Pendulum lock sensor.	System setup for TERRA FORCE boom hydraulics. The alarm is generated: <ul style="list-style-type: none"> if the sensor signal is less than 0.5V. Illegal transition. 	No or wrong signal from sensor. Shorted or disconnected. Check Pendulum lock sensor adjustment and/or connection.
140	9	Alarm	Pendulum unlock sensor.	System setup for TERRA FORCE boom hydraulics. The alarm is generated: <ul style="list-style-type: none"> if the sensor signal is less than 0.5V. Illegal transition. 	No or wrong signal from sensor. Shorted or disconnected. Check Pendulum unlock sensor adjustment and/or connection.
131	10	Warning	Boom not in transport.	System setup for TERRA FORCE boom hydraulics. The alarm is generated, if an attempt to bring the boom into transport position failed, or if the user forgot to bring it there.	Place boom in transport position before driving. Check transport lock function. Check boom height sensor.
122	11	Warning	Dynamic Centre sensor.	System setup for TERRA FORCE boom hydraulics. The alarm is generated if the sensor signal is less than 0.2V or exceeds 4.8V. Reset by pressing "enter".	Signal from sensor out of range. Shorted or disconnected. Check Dynamic centre position sensor adjustment and/or connection.
08	15	Alarm	Boom fold sensor failure.	The boom sensor signal is less than 0.5V. The boom sensor changes state, without "Boom fold inner" button is active. Auto and Manual is disabled. Only "Align" function is possible.	Boom fold sensor failure. Automatic and manual tracking is aborted. Only "Align" function is possible.
117	37	Warning	D-centre incorrect position	Time-out on sensor signal. System setup for TERRA FORCE boom hydraulics. Buttons have been activated to move the Dynamic centre. The selected setting has not been reached within 10 seconds. Reset by pressing "enter" or attempt to move Dynamic centre.	Attempt to move Dynamic centre cylinder did not succeed within the given time frame. Check the hydraulics connections and pressure. Check Dynamic centre position sensor.
28	38	Illegal action	Track Boom fold Align sprayer	User starts to fold the boom, and the SafeTrack is not locked. BoomFoldInner is disabled.	Track Boom fold Align sprayer. The alarm is present while the sprayer is not locked, and a "fold inner" button is pressed. No folding takes place.

7 - Fault finding

ID	Pr	Type	Text at display detail	Criteria for fault Operations disabled	Full screen Help text
29	39	Illegal action	Track unfold Boom	Alarm for attempt to switch to "Manual" or "Auto" mode in a situation where boom is not detected unfolded. When the boom is detected unfolded, the trapeze lock is unlocked and the message disappears. Auto and manual are disabled.	Track unfold Boom Alarm for attempt to switch to "Manual" or "Auto" mode in a situation where boom is not detected unfolded. Unfold the boom. In half steer mode: Risk of bending folded side. Contact service.
103	111	Warning	Fold with unlocked pendulum	When pressing boom fold button with pendulum unlocked.	Fold with unlocked pendulum.
104	112	Warning	Boom wing loose.	Boom fold buttons are not pressed but the 4 sensors on outer boom wings change from "In spray" to "Not in spray" respectively when they change from "In transport" to "Not in transport".	Boom wing loose.
108	116	Alarm	Boom height sensor fault	Alarm is active when 2.2.4.2 Boom height at headlands is enabled The alarm is generated if the sensor signal is less than 0.2V or exceeds 4.8V.	
112	118	Changed	Flat 1 Level 1 Hilly 5	The information pops up when DynamicCentre adjustment stepwise button has been pushed.	Defines current Dynamic centre setting for the TERRA FORCE boom. Flat means the boom is free hanging. Hilly means the boom will follow the sprayer movements.
113	119	Changed	Flat 1 Level 2 Hilly 5	The information pops up when DynamicCentre adjustment stepwise button has been pushed.	Defines current Dynamic centre setting for the TERRA FORCE boom. Flat means the boom is free hanging. Hilly means the boom will follow the sprayer movements.
114	120	Changed	Flat 1 Level 3 Hilly 5	The information pops up when DynamicCentre adjustment stepwise button has been pushed.	Defines current Dynamic centre setting for the TERRA FORCE boom. Flat means the boom is free hanging. Hilly means the boom will follow the sprayer movements.
115	121	Changed	Flat 1 Level 4 Hilly 5	The information pops up when DynamicCentre adjustment stepwise button has been pushed.	Defines current Dynamic centre setting for the TERRA FORCE boom. Flat means the boom is free hanging. Hilly means the boom will follow the sprayer movements.
116	122	Changed	Flat 1 Level 5 Hilly 5	The information pops up when DynamicCentre adjustment stepwise button has been pushed.	Defines current Dynamic centre setting for the TERRA FORCE boom. Flat means the boom is free hanging. Hilly means the boom will follow the sprayer movements.
123	123	Warning	Folding not allowed.	Attempt to fold when speed exceeds max. speed with locked pendulum. Folding blocked. Reset when speed is decreased or when fold buttons are released.	It is not allowed to fold or unfold the boom whilst driving. Stop the vehicle.
132	133	Illegal action	One function only!	Appears on TERRA FORCE booms when the user tries to use more than one function at a time.	It is not allowed to use multiple folding buttons/functions simultaneously.

7 - Fault finding

ID	Pr	Type	Text at display detail	Criteria for fault Operations disabled	Full screen Help text
133	134	Illegal action	Unfold inner wing.	Appears on TERRA FORCE booms. Wrong folding sequence.	Do not attempt to fold intermediate or breakaway section if inner section is not fully unfolded.
134	135	Illegal action	Keep folding 1 st outer wing.	Appears on TERRA FORCE booms. Wrong folding sequence.	Finish the folding of intermediate section (1 st outer wing).
135	136	Illegal action	Keep folding 2 nd outer wing.	Appears on TERRA FORCE booms. Wrong folding sequence.	Finish the folding of breakaway section (2 nd outer wing).
136	137	Warning	Lift the boom.	Appears on TERRA FORCE booms. The position of the boom lift is too low to ensure proper function of the transport lock.	Lift the boom to a higher position.
137	138	Warning	Boom not in transport.	Boom not in transport position before driving.	Check transport lock function. Check boom height sensor.
139	139	Alarm	Dynamic centre sensor.	When dynamic centre function is enabled.	

7 - Fault finding

Hydraulic incidents

General information

Before any towing of the machine following a failure in the engine or the hydraulic transmission, it is essential to check the hydraulic motors and the transmission pump.

i NOTE! To avoid any risk of damage to the transmission components (pump, motors etc.), the machine should be towed over a short distance and at low speed.

Before moving the machine, you should:

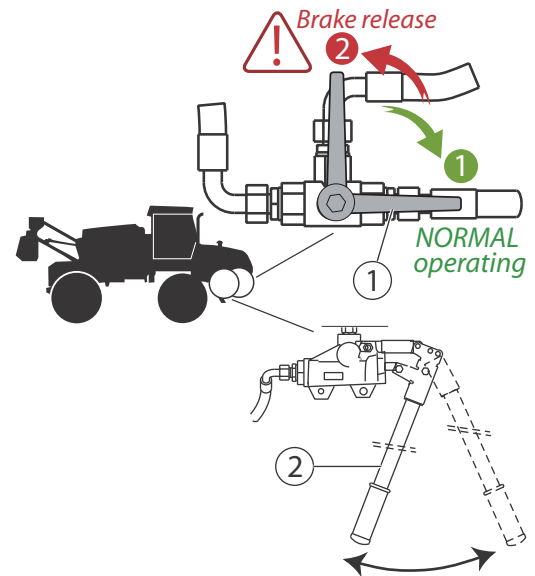
1. Release the hydraulic motor brakes. Voir chapitre ci-dessous "Releasing the hydraulic motor brakes".
2. Release the high pressure valves on the transmission pump. Voir chapitre ci-dessous "Transmission pump high pressure valves".

Releasing the hydraulic motor brakes

1. Valve in NORMAL operating mode.
2. Valve in BRAKE RELEASE mode.

For releasing the brakes of the hydraulic motors, apply the following procedure:

- Turn the handle (1) of the release valve to the position 1
- Place the handle (2) to the hand pump.
- Operate the arm lever pump until the brakes on both motors are fully released.



i NOTE! The arm lever pump (2) is placed into the storage box.

i NOTE! Do not continue to work the hand pump after the brakes have been fully released. Excessive pressure could damage the motor braking mechanism.

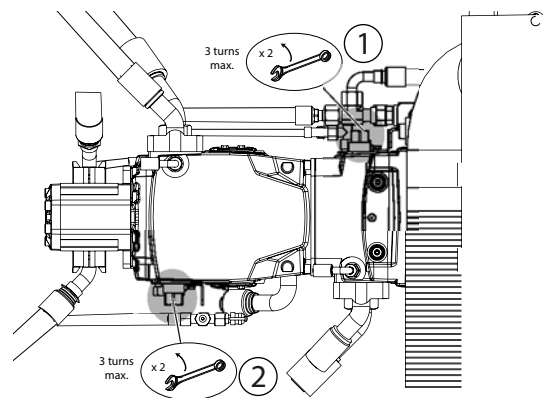
i An excessive towing distance and a too high speed could damage the motor braking mechanism.

After towing or before starting the machine again, always engage the parking brake by turning the valve handle to vertical position and remove the brake release handle.

Transmission pump high pressure valves

This operation consists of releasing the 2 high pressure valves fig.1 located on the transmission pump to allow free circulation of oil in the system when towing the machine.

- Loosen the 2 valves (1) and (2) by a maximum of 3 turns to allow free circulation of the oil in the hydraulic transmission.



The high pressure valves should be tightened before the machine is started up again.

Units of measurement

The unit of measure Conversion

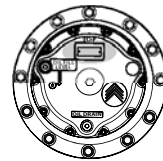
Units	US Units	Legal Units	Conversion legal units	Units Conversion US
Temperature	°F (Fahrenheit)	°C (degrees Celsius)	°F = 9/5 C + 32	°C = 5/9 (F-32)
Distance	Mid (mile)	Km (mile)	1 Mi = 1.60934 km	1 Km = 0,621 mid
Pressure	PSI	bar	1 psi = 0.06893 bar	1 Bar = 14.51 psi
Volume	Gal (US gallon)	L (liters)	1 Gal = 3,785 l	1L = 0,264 gal
Rotation speed (RPM)	rpm	RPM (revolutions per minute)	1 RPM = 1 rpm	1 RPM = 1 rpm
Flow	Gph (gallon per hour)	L/h (liter per hour)	1 Gph = 226.8) is shown from l/h	1 L/h = 0.0044 gph

Tyre pressure

Sizes	Load index	Models	Inflation pressure PSI (bar)
380/90R50	166A8/B	DT800 TL (Tubeless)	70 (4.8)
480/80R50	165A8/B	Spr Trac TL (Tubeless)	46 (3.2)
520/85R46	169A8/B	Spc SrGrp TL (Tubless)	23 (1.6)
620/70R42	166A8/B	DT820 HD TL (Tubeless)	35 (2.4)

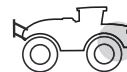
Identification plates

A. Identification of moto-hydraulic reducers:



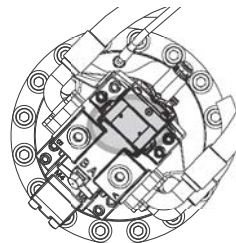
B. Identification of hydraulic pumps

1. Hydraulic Pump primary transmission, placed behind the engine.
2. Hydraulic Pump of secondary transmission.



C. Identification of hydraulic n,s

The model and serial number are shown on the identification plate, as shown in the illustration



8 - Technical specifications

Technical Characteristics of the recommended lubricants

Moto-hydraulic reducers

- Compagny: TOTAL
- Reference: TRANSMISSION SYN FE 75W-140
- Properties: Synthetic oil for very high performance for bridges and gears and heavily loaded gears.
Very high viscosity index. Properties Extreme-pressure and anti-wear reinforced for a optimum lubrication of bridges and hypoid non-hypoid. Excellent thermal stability. Very low viscosity at the loss of shear.
- Features

TRANSMISSION SYN FE	Units	75W-140
Volumetric mass at 15°C	kg/m ³	885
Viscosity at - 40°C	mPa.s	130 000
Viscosity at 40°C	mm ² /s	183
Viscosity at 100°C	mm ² /s	26
Viscosity index	-	178
Pour point	°C	- 36



Above characteristics are mean values given as an information.

- Specifications : API GL-5 SCANIA STO 1:0

Hydraulic oil for hydraulic transmission

Company: TOTAL

Reference: EQUIVIS ZS 46

Properties : High viscosity index-wear hydraulic oils.

- The equivis ZS46 range is recommended for all kind of hydraulic systems operating under high pressure (limit as indicated by the pump manufacturer) and high temperature (up to 100°celsius in hot points).
- Lubricants especially suitable for hydraulic systems working under extreme temperature variations and equipment operating outside : easy start up at low temperature (-30°C) and regular operating in all seasons : civil engineering, agriculture, marine, transport and other industrial applications.

International specifications :

- AFNOR NF E 48-603HV
- ISO 6743/4 HV
- DIN 51524 P3 HVL
- CINCINNATI MILACRON P68,P69,P70
- VICKERS M-2950S, -I-286

Advantages : Long equipment life time and high operating reliability

- Very high viscosity index.
- Excellent shear stability.
- Superior thermal stability avoiding the formation of sludge even at high temperature.
- Very good oxidation stability ensuring a long service life of the fluid.
- High protection against wear insuring maximum equipment life.
- Excellent hydrolytic stability avoiding filter blocking.
- Remarkable filterability even in the presence of water.
- Excellent protection against rust and corrosion.
- Good anti-foam and air release properties by using silicon free components.

- Very low pour point.
- Good demulsibility ensuring rapid water separation.
- Typical characteristics :

Typical characteristics	Methods	Unit	Equivalis ZS 46
Appearance (visual)	Internal	-	87.4
Density at 15°Celsius	ISO 3675	kg/m ³	46.0
Viscosity at 40°Celsius	ISO 3104	mm ² /s	183
Viscosity at 100°Celsius	ISO 3104	-	8.4
Viscosity index	ISO 2909	-	161
Cleveland flash point	ISO 2592	°Celsius	215
Pour point	ISO 3016	°Celsius	-39
FZG (A/8, 3/90)- stage fail	DIN 51354	palier	11
Filterability index (F)	NF E 48-690	-	1.02
Shear resistance 250 cycles	DIN 51382	%	5
Viscosity loss @ 40°C			

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Coolant

- COOLELF PLUS is a cooling liquid based on GLACELF PLUS.
- GLACELF is a "long life" antifreeze based on monoethylene glycol and mineral corrosion inhibitors (silicates) ; a technology that has proven its reliability in cooling and heat transfer systems/ It also contains an organic inhibitor, it is a semi organic technology.
- COOLELF PLUS -37°C can be used in all cooling systems of combustion engines on cars, vans, trucks, buses, constructing machines and agricultural tractors.
- COOLELF PLUS -37°C contains a bittering agent to make it undrinkable and do preserves the health of children and users.
- COOLELF PLUS -37°C is the semi mineral product of our cooling liquid range with mineral

Applications

- COOLELF PLUS -37°C is a permanent coolant fluid that can be used throughout the year: it provides effective protection against engine freezing or overheating.
- COOLELF PLUS -37°C is ready to use and is already mixed with de-mineralised water, the quality of which :

eliminates any risk of scaling that can cause engine overheating by degrading the heat transfer properties or by blocking circuits.

Ensures practically zero electrical conductivity, reducing the causes of electrolytic corrosion

It is recommended that the coolant fluid should be replaced every two years

COOLELF PLUS -37°C protects :

It is recommended to drain the cooling liquid every 3 years.

Specifications

Characteristics		
Colour		Blue green
Density at 15°Celsius	ASTM D1122	1.079
PH	ASTM D1122	8.3
Alkalinity reserve	ASTM D1122	80ml HCl 0.1N
Temperature at which the first ice crystals occur	ASTM D1177	- 37°C



Characteristics are means values given as an information.

8 - Technical specifications




















Wheel Drive Gearbox lubrication

The motor and the gearbox have separate lubrications. The gearbox is lubricated by oil splashing. The recommended oil type has to be

EP characteristics according to **MIL-L-2105 C & API GL5**

For heavy duty working conditions the recommended oil is **SAE 85W/140** or **SAE 75W/140**

In the following table the most common brands of lubricant and the types recommended are shown

		Minerali/Minerals		Sintetici/Synthetics	
		-20°C / +30°C (SAE 80W/90)	+10°C / +45°C (SAE 85W/140)	-20°C / +30°C (SAE 75W/90)	+10°C / +45°C (SAE 80W/140)
	SHELL	SPIRAX S2 A 80W-90 (SPIRAX A 80W90)			
		SPIRAX S2 A 85W-140 (SPIRAX A 85W140)			
		SPIRAX S5 ATE 75W-90 (TRANSAXLE 75W90)			
		SPIRAX S6 AXME 75W-90 (SPIRAX ASX 75W90)			
		SPIRAX S 75W140			
	AGIP	SPIRAX S 80W140			
		ROTRA MP 80W90			
		ROTRA MP 85W140			
		GEAR SYNTH 75W90			
	API	EP SAE 80W90			
		EP SAE 85W140			
		EP SINT 75W90			
	ARAL	EP PLUS 80W90			
		HYP 85W140			
		HYP SYNTH 75W90			
	BP	ENERGEAR HYPO 80W/90			
		ENERGEAR HYPO 85W140			
		ENERGEAR SHX-M 75W90			
		ENERGEAR SHX-S 75W140			
	CASTROL	EPX 80W/90			
		EPX 85W140			
		SAF-XD			
		MTX FULL SYNTHETIC			
		SAF-X 75W140			
	CEPSA	TRANSMISIONES EP 80W90			
		TRANSMISIONES EP 85W140			
		TRANSMISIONES EP FE+LD 75W90			
		TRANSMISIONES EP FE+LD 75W140			
	CHEVRON TEXACO	DELO GEAR LUBRICANT EDI 80W90			
		DELO GEAR LUBRICANT EDI 85W140			
		TEGRA SYNTHETIC GEAR LUBRICANT 75W90			
		TEGRA SYNTHETIC GEAR LUBRICANT 80W140			
	ELF	TRANSELF TYPE B 80W/90			
		TRANSELF TYPE B 85W/140			
		TRANSELF SYNTH ESE FE 75W90			
		TRANSELF SYNTH ESE FE 75W140			
	ERG	GEAR EP 80W/90			
		GEAR EP 85W/140			
		GEAR EPS 75W90			
	ESSO	GEAR OIL GX 80W90			
		GEAR OIL GX 85W140			
		GEAR OIL TDL 75W90			
	FUCHS	TITAN SUPER GEAR 80W90			
		TITAN SUPER GEAR 85W140			
		TITAN CYTRAC HSY 75W90			
		TITAN SINTOPOID 80W140			
	I.P.	PONTIAX HD 80W90			
		PONTIAX HD 85W140			
		PONTIAX HDS 75W90			
	MOBIL	MOBILUBE HD 80W90			
		MOBILUBE HD 85W140			
		MOBILUBE 1 SHC 75W90			
	PAKOL	GLOBAL GEAR SA 80W90			
		GEAR OIL EP GL-5 80W90			
		GLOBAL GEAR SA 85W140			
		GEAR OIL EP GL-5 85W140			
		GLOBAL MULTIGEAR TS 75W90			
	Q8	GLOBAL TRANSMISSION TS 80W140			
		GEAR OIL XG 80W90			
		T 55 85W 90			
		T 55 85W140			
	TAMOIL	T 65			
		TAMGEAR MP LUBRICANT 80W90			
		TAMGEAR MP LUBRICANT 85W140			
		TAMGEAR PERFORMANCE 75W90			
	TEXACO	GEARTEX EP-C 80W90			
		MULTIGEAR 80W90			
		GEARTEX EP-C 85W140			
		GEARTEX S5 75W90			
	TOTAL	MULTIGEAR S 75W90			
		EP-B 80W90			
		TRANSMISSION TM 80W90			
		TRANSMISSION TM 85W140			
		TRANSMISSION SYN FE 75W90			
		TRANSMISSION SYN FE 75W140			

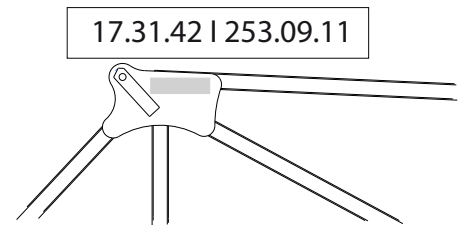
8 - Technical specifications

Boom width

Boom	Width	Inner wing unfolded	Inner + 1st outer unfolded	Sections
B3 MEGA 48.5	48.5	19.5	34.5	as required
TR5 32.5	32.5	20	-	as required
TR5 36.5	36.5	20	-	as required
TR5 38.5	38.5	20	-	as required
TR5 40.5	40.5	22	-	as required
TR5 42.5	42.5	22	-	as required
TERRAFORCE 36M	36	17	29	as required
TERRAFORCE 38M	38	17	31	as required
TERRAFORCE 40M	40	17	31	as required
TERRAFORCE 42M	42	17	31	as required

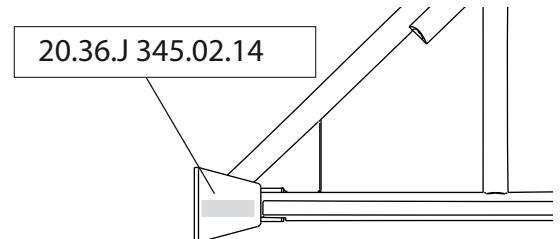
Boom identification B3

The serial number of the aluminium boom is engraved on the inner section. This serial number is identical for both sides of the boom. If needed to order boom section replacement, please provide this number.



Boom identification TR5

The serial number of the aluminium boom is engraved on the inner section. This serial number is identical for both sides of the boom. If needed to order boom section replacement, please provide this number.



8 - Technical specifications

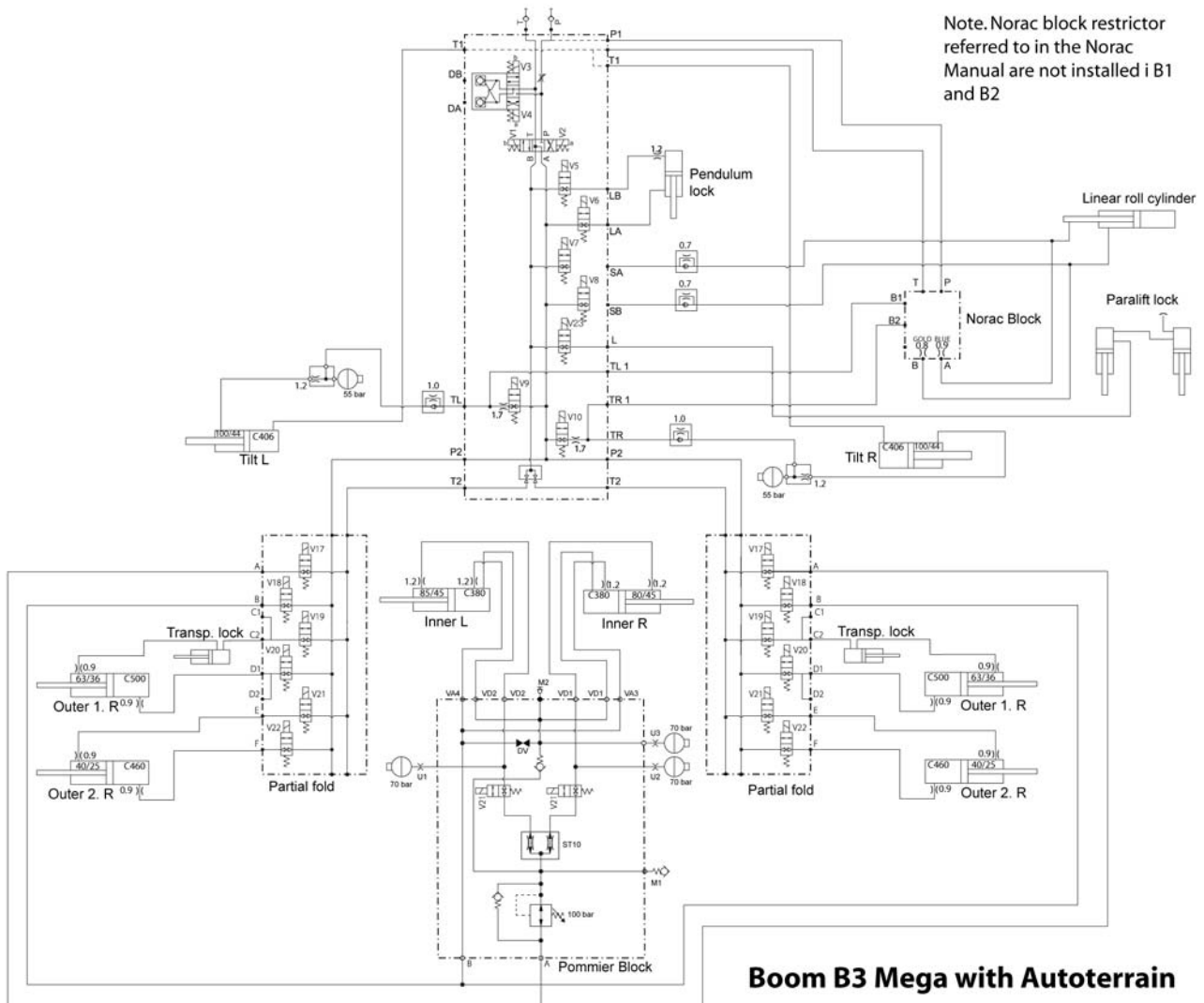
Nitrogen accumulators

Centre hydraulic inner fold block TDZ/TR5/B3	Pressure (bar)	Number
Nitrogen accumulator inner fold cylinder	70	3
Boom tilt TR5/B3	Pressure (bar)	Number
Nitrogen accumulator tilt cylinder	55	2
Paralift/B3	Pressure (bar)	Number
Nitrogen accumulator paralift		2

Hydraulic Pressure

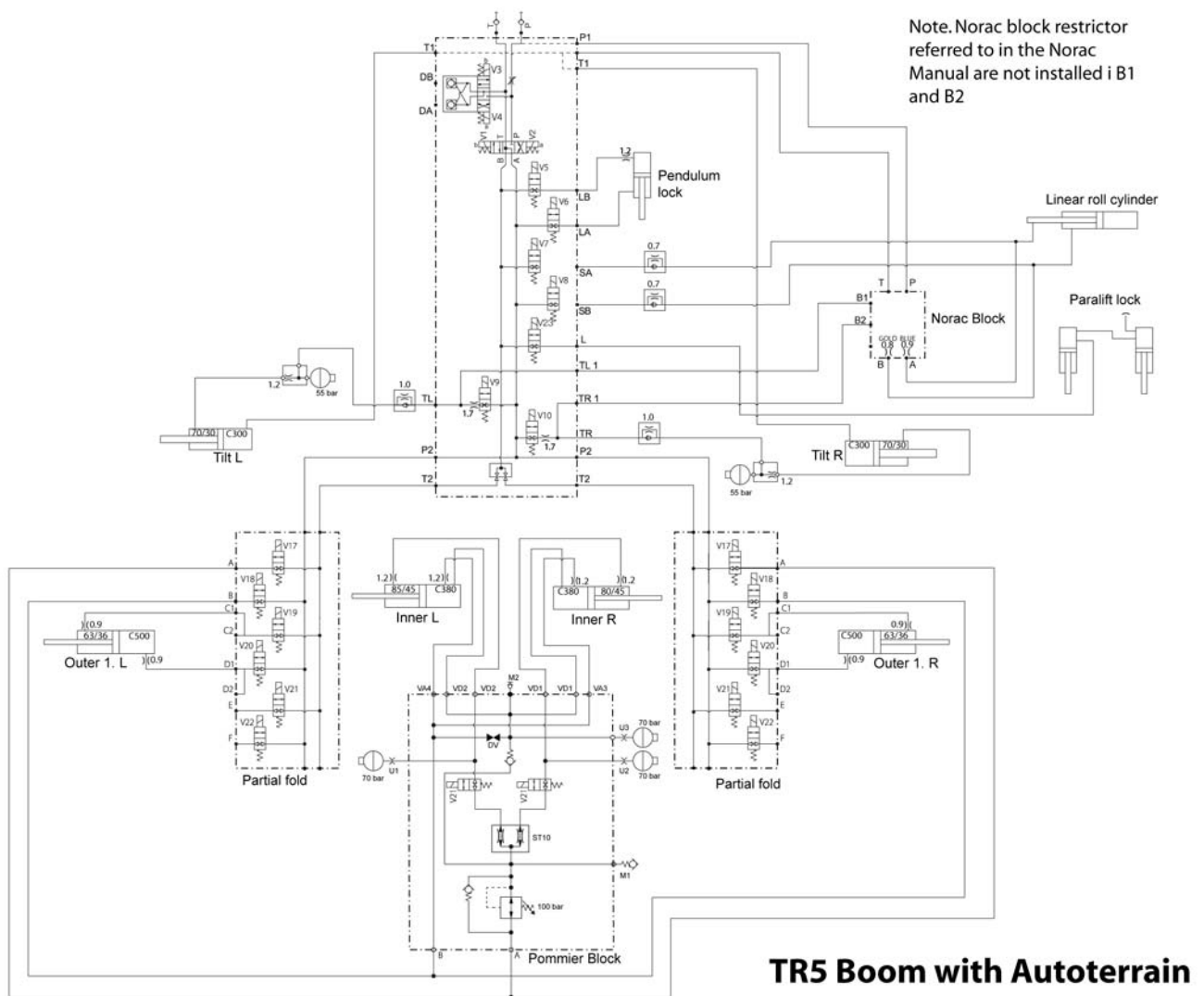
Centre hydraulic inner fold block TDZ/TR5/B3	Pressure (bar)	Number
TDZ/TR5/B3 Hydraulic pressure inner fold/yaw cylinder	100	1

Charts

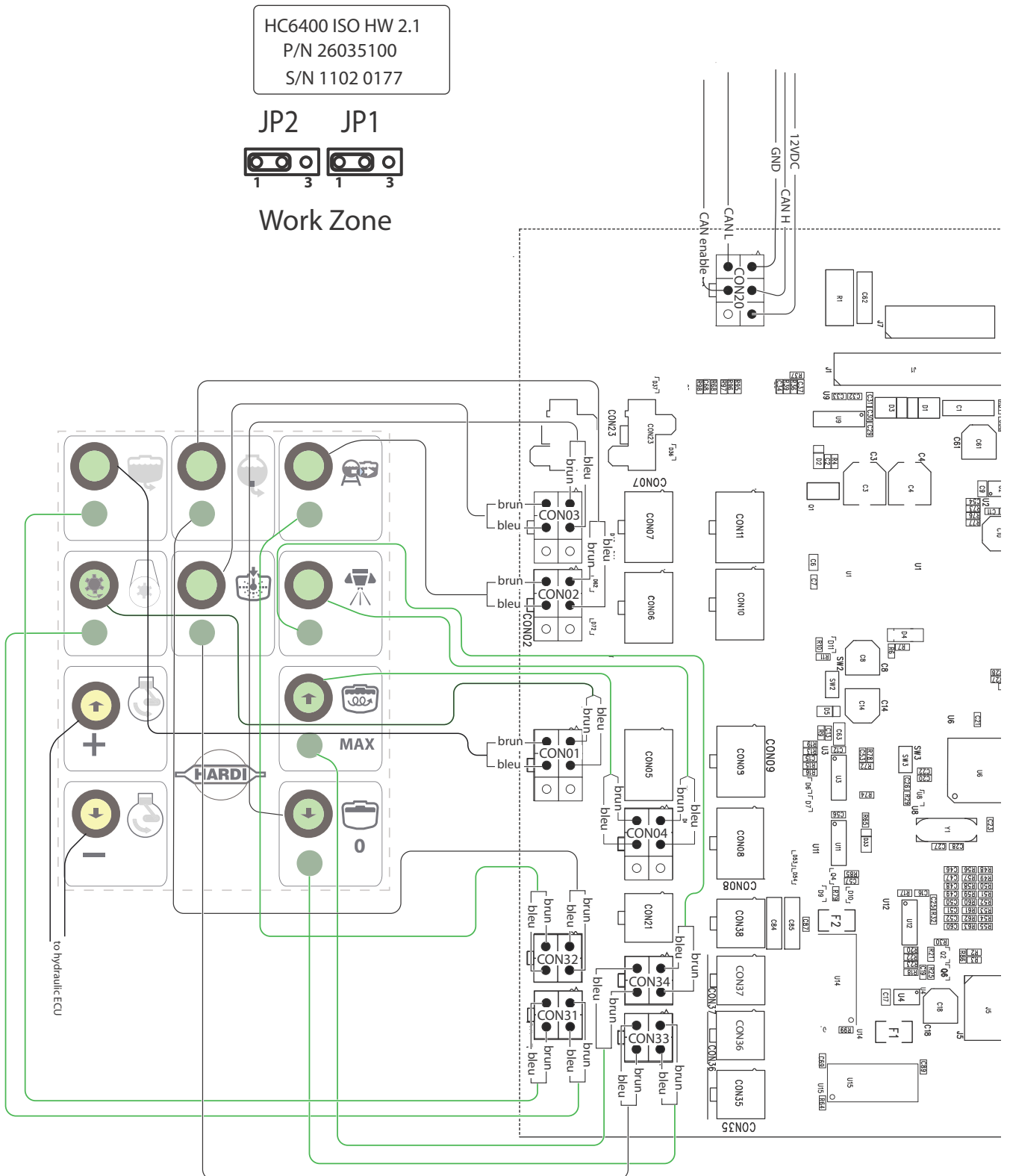


8 - Technical specifications

Charts

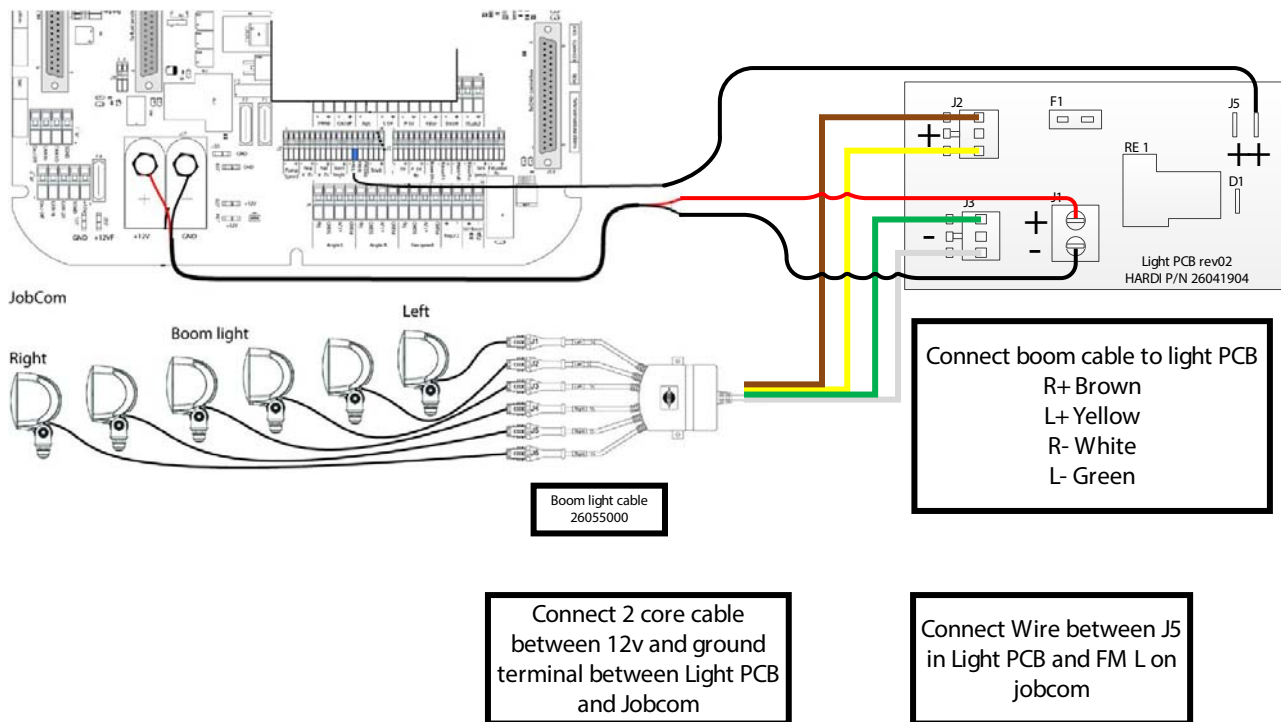


Wiring diagram external control



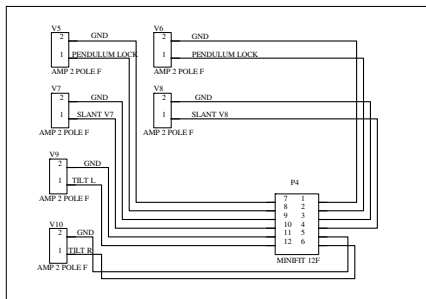
8 - Technical specifications

Wiring diagram Boom Lights

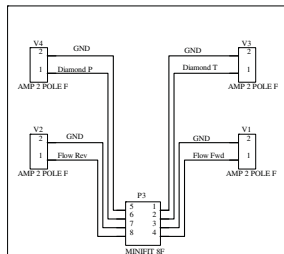


Boom Wiring Diagram

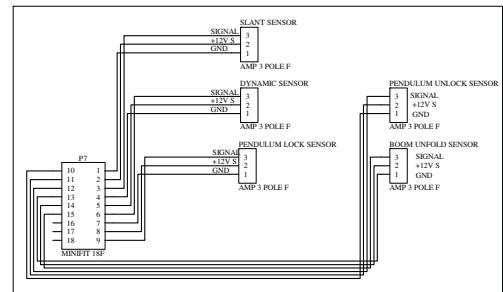
**Pendulum, Slant and Tilt connects to P4
Part Number 26034200**



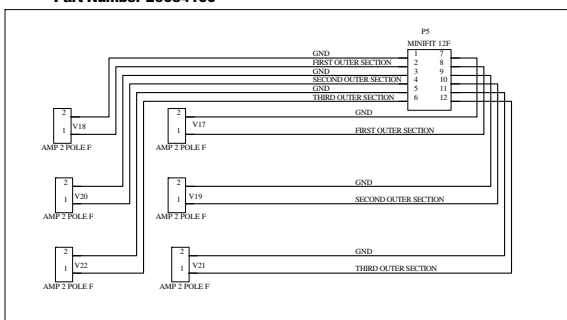
**Connects to P3
Part Number 26034300**



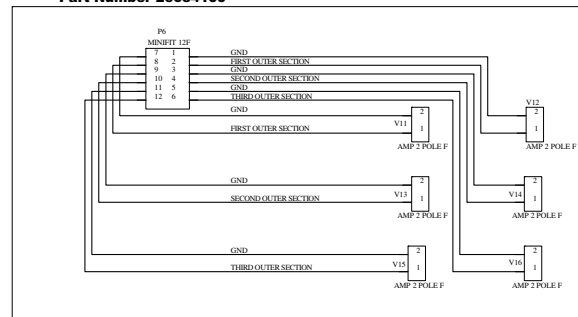
**Connects to P7
Part Number 26034400**



**Left Hyd Cable connects to P5
Part Number 26034100**



**Right Hyd Cable connects to P6
Part Number 26034100**



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Spare parts

To see updated spare part information the website www.agroparts.com can be visited. Here all parts information can be accessed when free registration has been made.



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