

INSTRUCTION MANUAL

ALSTOR 822 | ALSTOR 834 | ALSTOR 850 | ALSTOR 850 H | ALSTOR 851

ALSTOR **8x8**

INTRODUCTION TO THIS INSTRUCTION MANUAL

This instruction manual is for the Alstor 8x8.

This instruction manual covers several models. In the heading at the top of each page, you will find the model to which this page refers.
NOTE: The pages in the instruction manual may apply to one or several models.

The information in this instruction manual is provided for the safe and efficient use of the machine. Never exceed the maximum power levels and capacities and do not use the machine for any other purpose than what is indicated. The manufacturer's warranty only applies as long as the manufacturer's instructions are carefully followed.

We recommend all users of the machine to carefully read and understand these instructions.

It is the responsibility of the users to familiarise themselves with the correct use of the machine and to always follow the instructions. Never allow anyone else to operate the machine unless the operator has the requisite competence and experience and has carefully read and understood the operating instructions and safety precautions for this Alstor machine. Upon delivery of the product, be sure to check that all parts are free from transport damage. If damage is detected, please notify the dealer immediately.

Alstor AB reserves the right to make changes to the equipment, maintenance instructions and specifications without prior notice.

The EU Declaration of Conformity with the Machine Directive 2006/42/EC is attached as an appendix at the end of this instruction manual.

This is a translation of the original operating instructions in Swedish.

Manufacturer:

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info@alstor.se
www.alstor.se

Dealer:

This instruction manual constitutes an integral part of the machine and must be included with the machine in the event of a change in ownership.

No part of this document may be copied or transferred without written permission.

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1.1 GENERAL SAFETY PRECAUTIONS

Prior to operating the Alstor 8×8, carefully read all precautions in this instruction manual. It is imperative that the operator is completely familiarised with the machine for its correct use. Injuries and damage to the machine can be prevented through correct use. Incorrect use can give rise to injuries and damage to the machine and other property.

Any modification that affects the performance or safety of the machine may only be performed by Alstor AB or by personnel duly authorised by Alstor AB.

The removal or deactivation of safety devices, safety alerts and safety covers on the machine is absolutely prohibited.

The term "Operator" in this instruction manual refers to persons with the necessary experience, knowledge and technical skills to drive, operate and maintain the Alstor machine or related equipment. The term "Machine" in this instruction manual refers to the Alstor 8×8.



This warning symbol serves to alert the operator to very important safety information. There is a potential risk of injury or death to humans and damage to the machine.

Important! When the machine is used in conjunction with a crane, the accompanying crane instruction manual must be followed. Furthermore, also carefully heed the engine instruction manual. This is attached as an annex in the document binder. In addition to this instruction manual, local laws and regulations concerning safety, health and environmental regulations must be observed.

It is important that the machine operator becomes familiarised with and competent in handling the machine. It is not possible to warn of all possible risks and safety hazards, and with this in mind we urge the operator to act carefully and exercise sound judgement. This includes taking preventive safety precautions, and observing the instructions with regard to machine safety, placement of instruments and controls, safe braking and handling of flammable liquids. Learn how the machine operates, practice driving and operating the machine before taking it off-road. Be aware of the extended hazardous area involved when felling trees. You must never access this area while the machine is in operation. Current driving license requirements must be adhered to. Please check the regulations that apply in the country of use. In order to drive a light off-road vehicle in Sweden, the operator must have a class B driver's license qualification.

Only persons (operators) fully familiar with the machine and who possess the necessary technical skills are allowed to operate, service, repair and drive the machine. The machine operator must never be under the influence of alcohol, medicine or drugs. During operation, only one person is allowed in the vehicle. It is prohibited to have passengers in the vehicle, including children on your lap, when handling and operating the machine. Never set the machine in motion, unless properly seated on the operator's seat. Important data that applies to your machine can be found in the technical data section of this instruction manual.

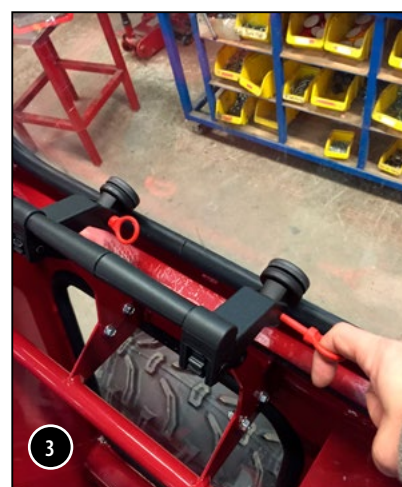
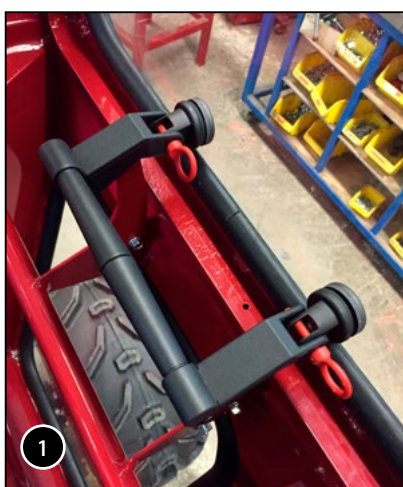


WARNING! The safety area is 50 metres. Do not allow any bystanders within this safety area. The operator must have full visual control of the work area. Negligence can result in immediate danger to life.



WARNING! Setting the machine in motion when not properly seated in the operator's seat is absolutely prohibited and extremely dangerous.

We cannot warn of all possible and potential hazards, but urge you to exercise extreme caution. Only persons (operators) fully familiar with the machine and who possess the necessary technical skills are allowed to operate, service, repair and drive the machine.



EMERGENCY EXIT WINDOW.

In the event of an emergency, remove the two red pins. Lift the handle to fully open the window.

1.2 MACHINE LABELS

The machine and crane are fitted with labels urging safety and presenting important information. Below is a presentation of the machine labels. All crane labels and their positions can be found in the separate crane instruction manual.



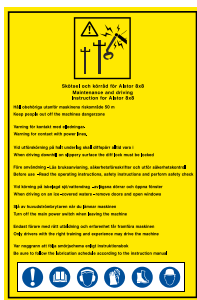
CAB EMERGENCY EXIT.

The operator's door and side window serve as emergency exits.

Vid nödutrymning -Öppna fönster helt genom att först dra handtaget uppåt så fönster öppnas lite, drag sedan ut de två röda sprintarna.

EMERGENCY EXIT WINDOW.

To exit in case of an emergency, open the window by turning the handle and then removing the two red pins.

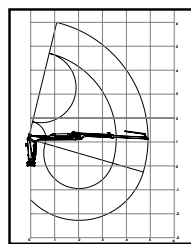


WARNING LABEL/MAINTENANCE AND DRIVING ADVICE.

This label warns of multiple issues as explained below. Keep unauthorised persons outside the machine's 50 metre danger zone. When driving downhill on slippery surfaces, always engage the differential lock. **Never engage the differential locks on machines with steel crawler tracks**, this also applies to slippery surfaces. Before operation – Read the instruction manual, safety precautions and perform a safety check.

When driving on lakes/waterways covered with ice, remove the door and open the window. Switch off the main power switch when leaving the machine.

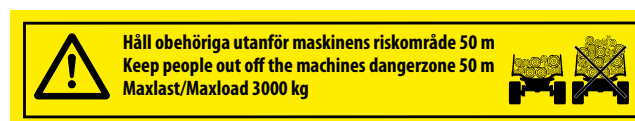
Only operators with the correct training and experience are allowed to operate the machine. Carefully adhere to the lubrication chart in this instruction manual. Warning of contact with high-tension power lines. When working in close proximity to high-tension power lines, be extremely careful so that the crane does not come into contact with the power lines. Use proper protective equipment.



CRANE CHART.

Each crane has a chart detailing the crane's permitted movement pattern.

Make sure the crane has this plate and carefully read the information on the plate.



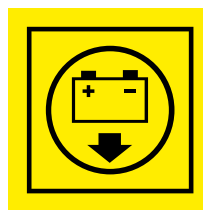
DANGER ZONE.

Make sure bystanders are outside the machine's 50 metre safety zone.

| | |
|--|--------------------|
| <input type="radio"/> CE ALSTOR AB Åkarevägen 4, SE-455 97 Dingle, Sweden Phone +46 524 40745 | |
| Model | Curb weight, kg |
| Chassis No | Total weight, kg |
| Year | Max front axle, kg |
| Power kW | Max rear axle, kg |

MACHINE PLATE.

Every machine is equipped with a machine plate. Make sure the machine has this plate and carefully read the data on it.



BATTERY.

This label indicates the battery location.

1.2 MACHINE LABELS



WARNING FOR REMOTE START OF MACHINE COMPONENTS.

Applies to machines equipped with a winch. Radio remote control is possible even when there is no operator in the vicinity of the machine. Make sure no one is present in the area surrounding the crane and winch and that it is free of obstacles before starting this function.



WARNING INSIDE THE ENGINE COMPARTMENT.

Wear safety goggles. For any work that requires additional protective equipment, e.g. gloves, be sure to use such equipment. Warning: Risk of crushing – movable parts in engine compartment.



WARNING OF CRUSHING – CENTRE SECTION.

Risk of severe injury if the body or body parts get caught in the machine's centre sections.

HUVUDSTRÖMBRYTARE
MAIN SWITCH



MAIN POWER SWITCH.

Disconnects all electric power to the machine. Always switch this off when leaving the machine. Switch off the main power switch in the event of a fire hazard.

| ELPANEL/ FUSE DIAGRAM 850 | | A | | B | | A | |
|---------------------------|---------------------------|---------------------------|---------------------------|-----|-----|-----|-----|
| 10A | 12 Cabin fan 10A | 12 Fuel filter fine 30A | 12 Fuel filter motor 30A | 10A | 10A | 10A | 10A |
| 10A | 11 Filter fan 30A | 11 Filter fan motor 30A | 11 Signal horn 10A | 10A | 10A | 10A | 10A |
| 10A | 10 Instrument panel 10A | 10 Instrument panel 10A | 10 Instrument panel 10A | 10A | 10A | 10A | 10A |
| 10A | 9 Overheating light 10A | 9 Overheating light 10A | 9 Overheating light 10A | 10A | 10A | 10A | 10A |
| 10A | 8 Diff lock 20A | 8 Diff lock 20A | 8 Diff lock 20A | 10A | 10A | 10A | 10A |
| 10A | 7 100% 20A | 7 100% 20A | 7 100% 20A | 10A | 10A | 10A | 10A |
| 10A | 6 100% 20A | 6 100% 20A | 6 100% 20A | 10A | 10A | 10A | 10A |
| 10A | 5 Parking brake light 10A | 5 Parking brake light 10A | 5 Parking brake light 10A | 10A | 10A | 10A | 10A |
| 10A | 4 Diff lock 20A | 4 Diff lock 20A | 4 Diff lock 20A | 10A | 10A | 10A | 10A |
| 10A | 3 Radio 10A | 3 Radio 10A | 3 Radio 10A | 10A | 10A | 10A | 10A |
| 10A | 2 Fuel pump 10A | 2 Fuel pump 10A | 2 Fuel pump 10A | 10A | 10A | 10A | 10A |
| 10A | 1 100% 20A | 1 100% 20A | 1 100% 20A | 10A | 10A | 10A | 10A |

Elpanel/Fuse diagram 834

| A | | B | |
|---|----|----|----|
| 1 Tyckmätare Pressure sensor 10A | 1 | 1 | 1 |
| 2 Överhettningssignal High temp warning 10A | 2 | 2 | 2 |
| 3 Diffspärr Diff lock 20A | 3 | 3 | 3 |
| 4 Blinkers Indicators 10A | 4 | 4 | 4 |
| 5 Instrumentpanel Dashboard 10A | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| 7 Bränsle och/eller Fuel sensor 10A | 7 | 7 | 7 |
| 8 100% 20A | 8 | 8 | 8 |
| 9 100% 20A | 9 | 9 | 9 |
| 10 Generator 10A | 10 | 10 | 10 |
| 11 Stövlärmö 20A | 11 | 11 | 11 |
| 12 100% 20A | 12 | 12 | 12 |
| 13 | 13 | 13 | 13 |
| 14 | 14 | 14 | 14 |
| 15 | 15 | 15 | 15 |
| 16 | 16 | 16 | 16 |

FUSE PANEL.

This label provides information about the different fuse circuits and fuse dimensions.

| | | | | | | | | | | | | |
|---|----|---|---|----|---|---|---|---|----|----|----|----|
| A | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | 13 | | | 14 | | | | | 15 | | | 16 |

FUSES A

Numbering of fuses A1-A16. See the functional description above.

| | | | | | | | | | | | | |
|---|----|---|---|----|---|---|---|---|----|----|----|----|
| B | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | 13 | | | 14 | | | | | 15 | | | 16 |

FUSES B

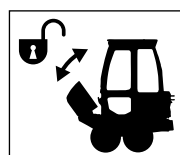
Numbering of fuses B1-B16. See the functional description above.

| | | | |
|---|--------------------------------|---|---------------------------|
| Hazard light Varningsblinkers | Turn signal Blinkers | Temp. alarm Alarm överhetttn. | Horn Signalhorn |
|---|--------------------------------|---|---------------------------|

| | | | |
|-------------------------------|-------------------------------|--|---------------------------|
| Saw motor Såg motor | Diff lock Diffspärr | AC compressor AC compression | AC fan AC fläkt |
|-------------------------------|-------------------------------|--|---------------------------|

RELAY

This shows the relay's function and position.



OPENING THE ENGINE BONNET

Shows where to open the engine bonnet.

1.3 LABEL POSITIONS

The machine is equipped with labels for safety, warnings, prompts and function. Do not move any label and make sure all labels are legible.

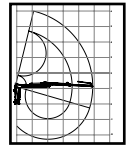
LOCATED IN ENGINE COMPARTMENT



LOCATED IN THE MACHINE'S CENTRE SECTION



LOCATED ON THE CRANE



LOCATED IN THE ELECTRICAL PANEL

| ELEKTRISKT FUSEBIDRAGRAM 850 | | Kombi-Fuse diagram 840/841 | |
|------------------------------|------|----------------------------|------|
| 1 | 200A | 1 | 200A |
| 2 | 100A | 2 | 100A |
| 3 | 100A | 3 | 100A |
| 4 | 100A | 4 | 100A |
| 5 | 100A | 5 | 100A |
| 6 | 100A | 6 | 100A |
| 7 | 100A | 7 | 100A |
| 8 | 100A | 8 | 100A |
| 9 | 100A | 9 | 100A |
| 10 | 100A | 10 | 100A |
| 11 | 100A | 11 | 100A |
| 12 | 100A | 12 | 100A |
| 13 | 100A | 13 | 100A |
| 14 | 100A | 14 | 100A |
| 15 | 100A | 15 | 100A |
| 16 | 100A | 16 | 100A |

| | | |
|---------------------------------------|------------------------|--|
| Högväxel High gear | Diffspärr Diff lock | Diffspärr Diff lock |
| Kylfläkt Engine cooling fan 45A | Bländers Indicators | Oversvängnings signal High-lift warning 500W |
| Kylfläkt Engine cooling fan 45A | | Kylfläkt Engine cooling fan 45A |

| | | | | | | | | | | | | |
|---|----|---|---|----|---|---|----|---|----|----|----|----|
| A | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | 13 | | | 14 | | | 15 | | 16 | | | |
| B | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | 13 | | | 14 | | | 15 | | 16 | | | |

LOCATED BY THE OPERATOR SEAT/INSIDE THE CAB



HUVUDSTRÖMBRYTARE MAIN SWITCH



| | |
|--|-----------------------|
| ALSTOR AB Åkersgränd 4, SE-455 97 Dingbo, Sweden Phone: +46 521 40785 | |
| Model: | Serial weight: kg |
| Order no: | Serial weight: kg |
| Year: | Year 1000: serial: kg |
| Order ref: | Year 1000: serial: kg |

Vid nödutrymning - Öppna fönster helt genom att först dra handtaget uppåt så fönster öppnas lite, drag sedan ut de två röda sprintarna.

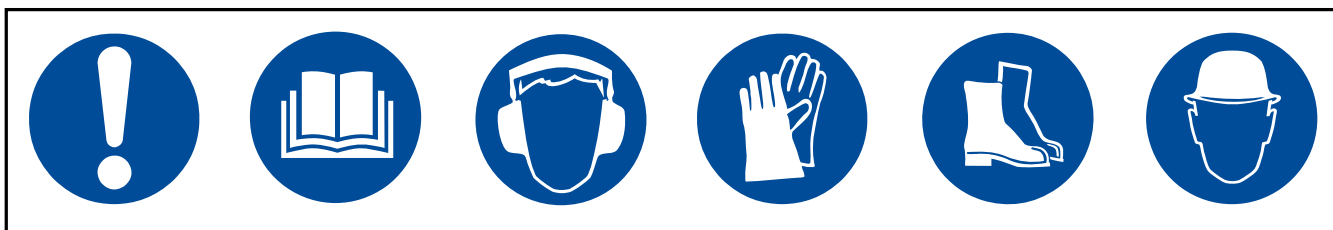


1.4 PERSONAL PROTECTIVE EQUIPMENT

Neither personal protective equipment nor hearing protection is required inside the cab. However, in order to be prepared for work both on and next to the machine, it is advisable to always have the correct personal protective equipment with you.

Recommended personal protective equipment:

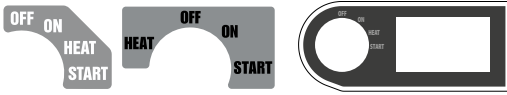
- Hearing protection
- Helmet, hard hat with visor
- Protective boots/shoes with good non-slip protection
- Protective gloves
- Full-body overall



The label above indicates mandatory use of personal protective equipment and to always read the instruction manual before operating the machine.

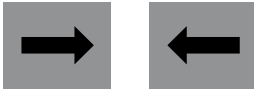
1.5 FUNCTIONAL MARKINGS

The functions of the machine are explained below and where appropriate illustrated with pictures.



IGNITION SWITCH DIESEL

OFF = Ignition off, ON = Ignition on,
HEAT = Glow-plug operation, START = Start of engine



Körriktning

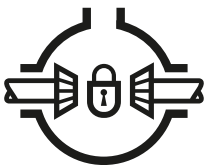
Direction

DIRECTION OF TRAVEL

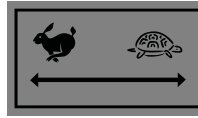
Forward
Neutral
Reverse



ACCELERATOR PEDAL

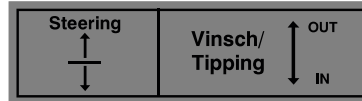


DIFFERENTIAL LOCK ENGAGE/DISENGAGE



MANUAL THROTTLE CONTROL

Left/hare = Increased gas/engine speed
Right/turtle = Decreased gas/engine speed



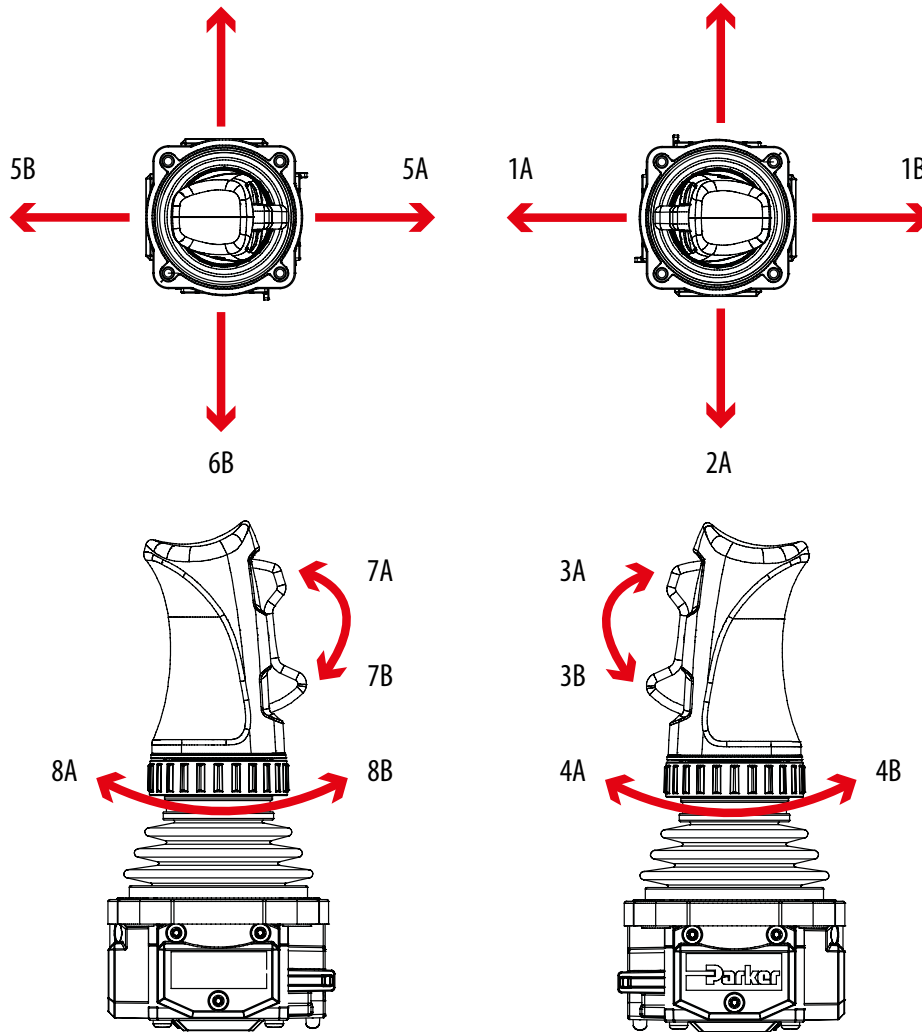
STEERING, WINCH AND TIPPING CONTROLS

Arrows indicate joystick function.

Machines optionally equipped with a winch and tippable flatbed have function markings indicating the OUT and IN directions.

For other crane model options, please refer to the instruction manual supplied with the crane.

1.6 MINI-LEVER FUNCTIONS – Electrical proportional control (LC6)



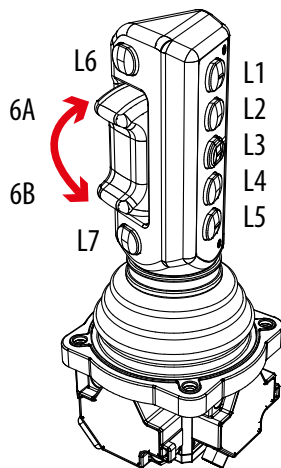
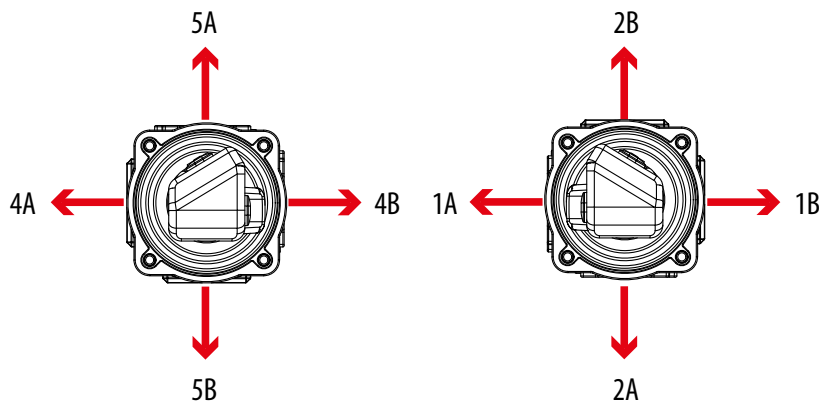
LEFT MINI-LEVER

- 5A = Right crane swing
- 5B = Left crane swing
- 6A = Rocker arm out/up
- 6B = Rocker arm in/down
- 7A = Telescope out
- 7B = Telescope in
- 8A = Outrigger up
- 8B = Outrigger down

RIGHT MINI-LEVER

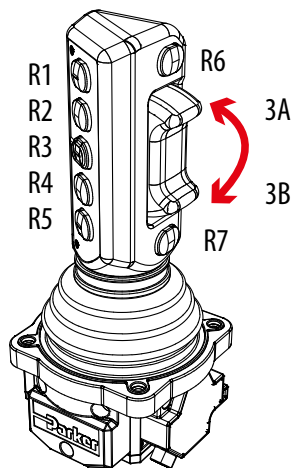
- 1A = Rotator anti-clockwise, articulated steering (when driving)
- 1B = Rotator clockwise, articulated steering (when driving)
- 2A = Main boom up
- 2B = Main boom down
- 3A = Grip open
- 3B = Grip close
- 4A = Outrigger down
- 4B = Outrigger up

1.6 MINI-LEVER FUNCTIONS - Electrical proportional control (MIC)



LEFT MINI-LEVER – HARVESTER

- 4A = Right crane swing
- 4B = Left crane swing
- 5A = Crane tip out
- 5B = Crane tip in
- 6A = Crane tilt out 850H/Telescope out 850
- 6B = Crane tilt in 850H/Telescope in 850
- L1 = Open all (knife/gripper arm)
- L2 = Close all (knife/gripper arm)
- L3 = Open gripper arm
- L4 = Open knife arm
- L5 = Feed backwards
- L6 = Saw
- L7 = Direction of travel forward/reverse

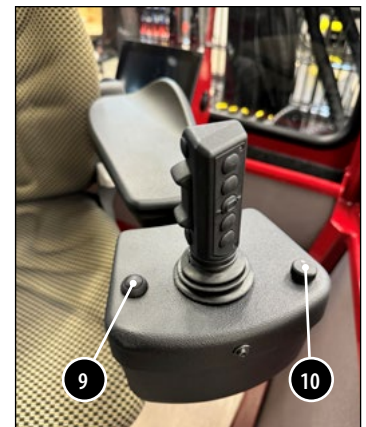


RIGHT MINI-LEVER – HARVESTER

- 1A = Rotator anti-clockwise, articulated steering (when driving)
- 1B = Rotator clockwise, articulated steering (when driving)
- 2A = Crane tip up
- 2B = Crane tip down
- 3A = Grip open 850/unit tilt up
- 3B = Grip close 850/unit tilt down
- R1 = Forward step-feed (auto)
- R2 = Arm in step-feed/arm out (R6)
- R3 = Forward step-feed
- R4 = Tree length selection +
- R5 = Tree length selection -
- R6 + 1A/1B = Switch rotator/swivel of machine
- R7 + 4A/4B = Left outrigger up/down
- R7 + 1A/1B = Right outrigger up/down

LEFT STANDARD MINI-LEVER

- 9 = Horn
- 10 = Inching

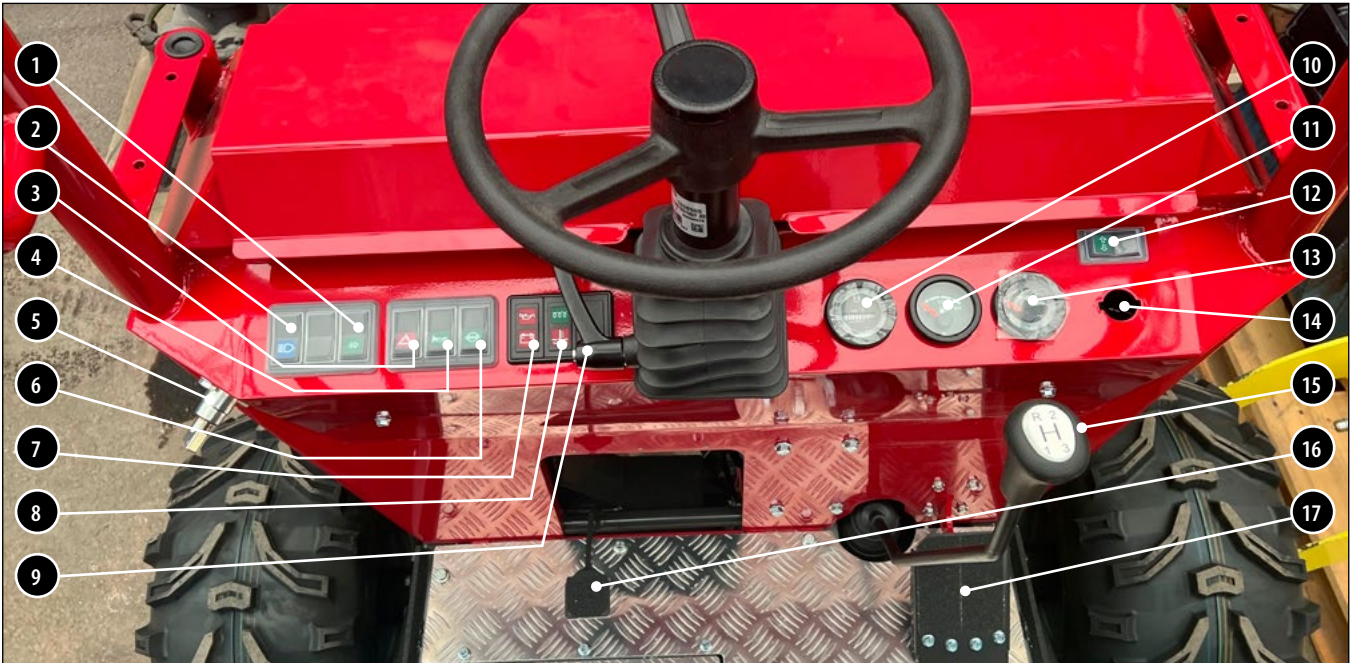


RIGHT STANDARD MINI-LEVER

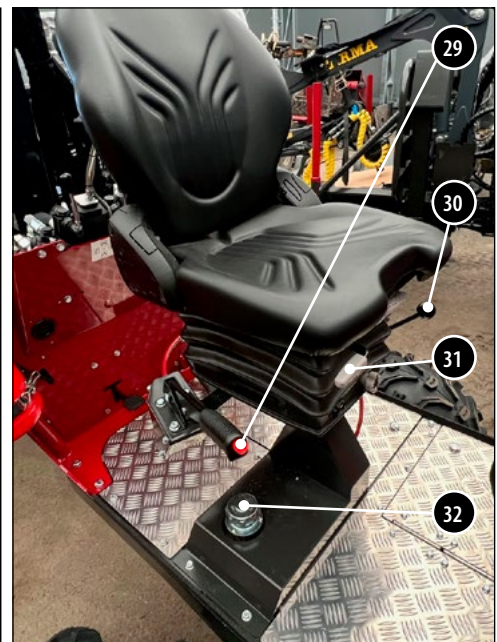
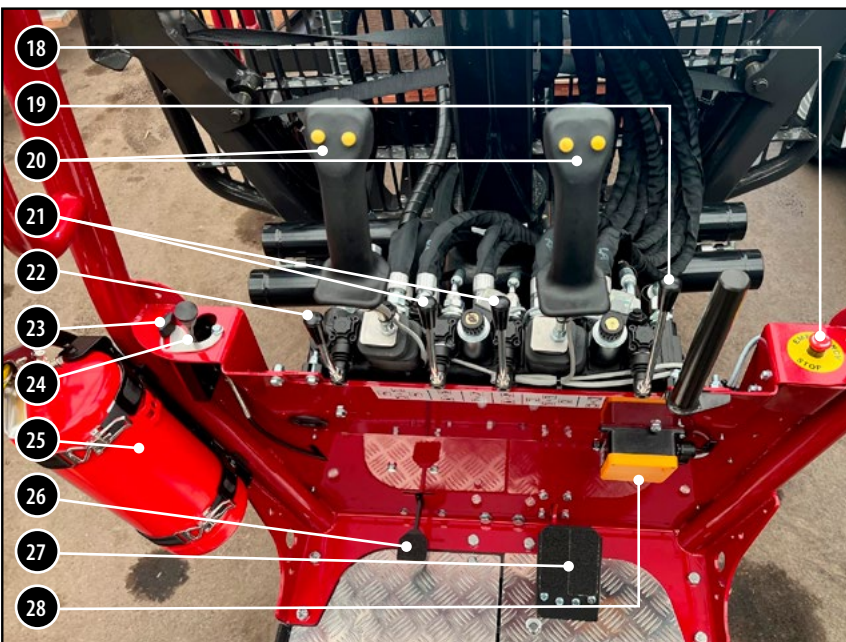
- 11 = Seat turning (option)
- 12 = Wiper



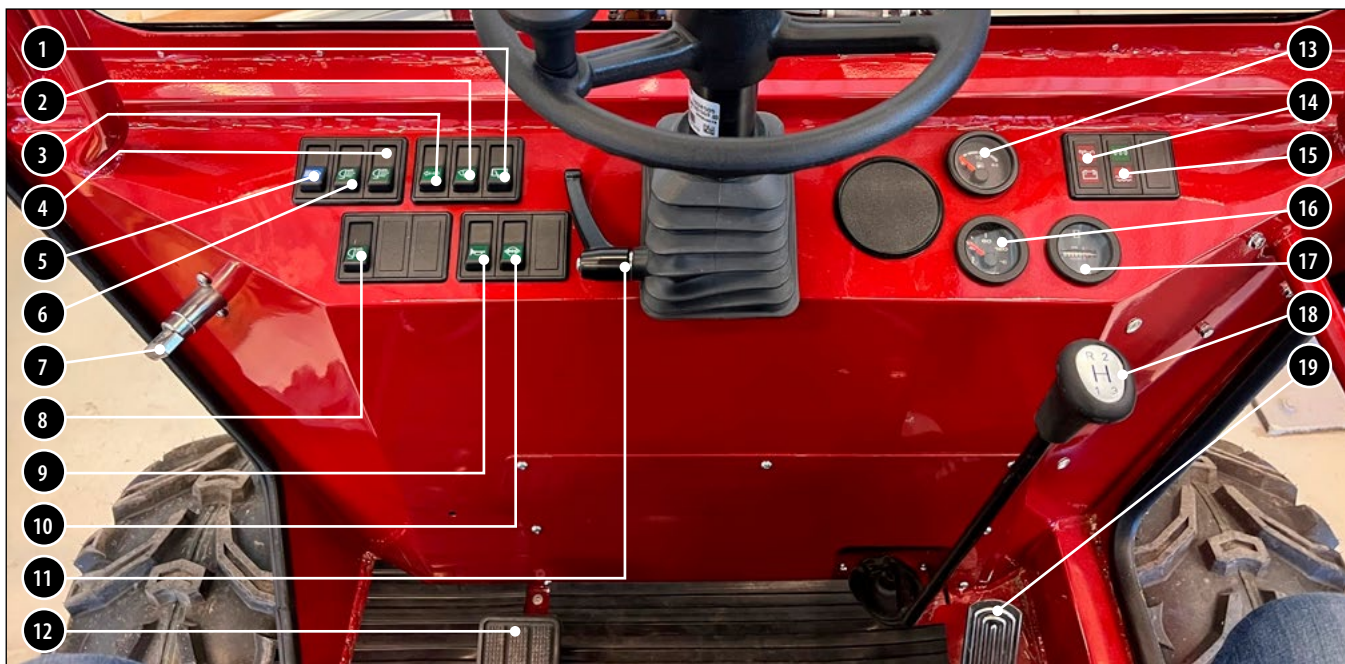
1.6 LOCATION OF CONTROLS AND FUNCTIONS – MODEL 822



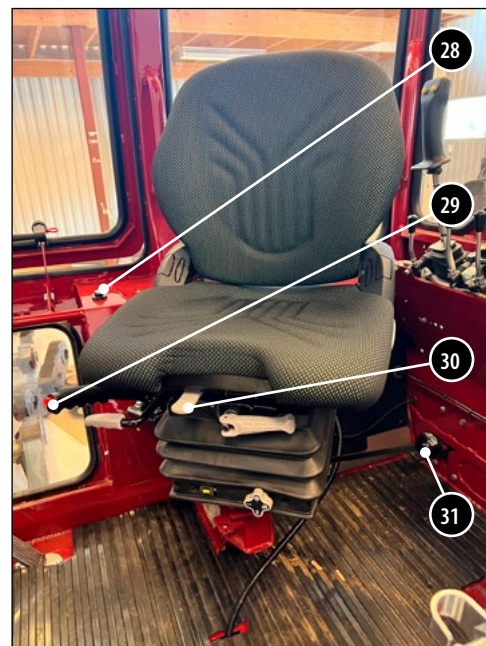
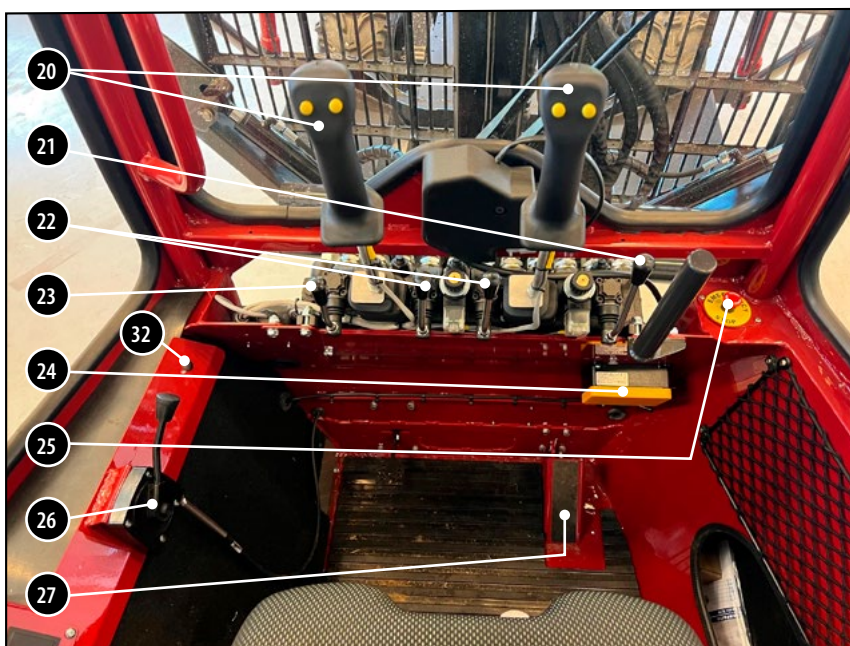
| | | |
|---|---|--|
| 1. Front work lights | 12. Direction indicators (option) | 23. Manual throttle end position stop |
| 2. Rear work lights | 13. Water temp gauge | 24. Manual throttle |
| 3. Hazard warning lights | 14. Ignition switch | 25. Fire extinguisher |
| 4. Horn | 15. Gear shift lever | 26. Service brake, back |
| 5. Main power switch | 16. Service brake pedal | 27. Accelerator pedal, back |
| 6. Differential lock on/off | 17. Accelerator pedal | 28. Remote control box |
| 7. High water temp/glow plug warning lamp | 18. Emergency stop | 29. Parking brake |
| 8. Charge lamp/Oil pressure warning light | 19. Joystick | 30. Lever for rotatable operator seat |
| 9. Steering wheel adjustment handle | 20. Crane operation levers (2 levers, option) | 31. Seat adjustment |
| 10. Hour meter | 21. Outrigger controls | 32. Fuel tank filler cap |
| 11. Fuel gauge | 22. Manual control of hydraulic outlet | There may be optional/additional lights. |



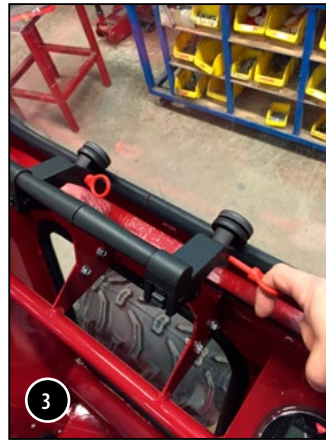
1.6 LOCATION OF CONTROLS AND FUNCTIONS – MODEL 834



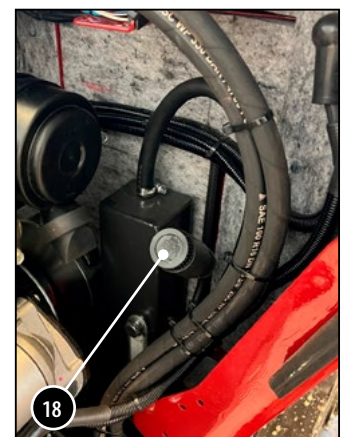
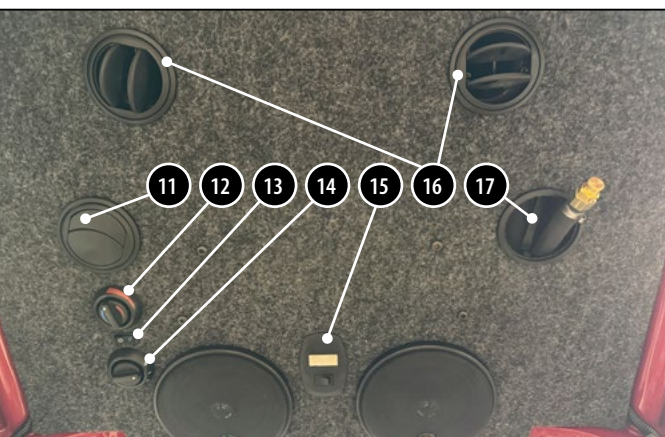
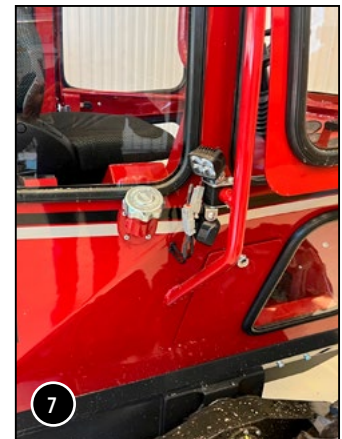
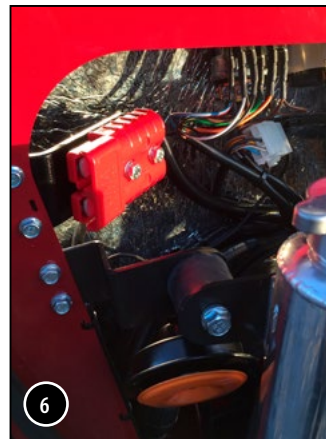
| | | |
|---------------------------------------|---|--|
| 1. Windscreen wiper, rear | 12. Service brake pedal, front | 23. Manual control of hydraulic outlet |
| 2. Windscreen wiper, front | 13. Fuel gauge | 24. Remote control box |
| 3. Direction indicators | 14. Charge lamp/Oil pressure warning light | 25. Emergency stop |
| 4. Additional lights, rocker switch | 15. High water temp/glow plug warning lamp | 26. Manual throttle |
| 5. Work lights, front and rear | 16. Water temp gauge | 27. Accelerator pedal, back |
| 6. Position lights, side | 17. Hour meter | 28. Ignition switch |
| 7. Main power switch | 18. Gear shift lever | 29. Parking brake |
| 8. Additional lights, crossing lights | 19. Accelerator pedal, front | 30. Seat adjustment |
| 9. Horn | 20. Crane operation levers (2 levers, option) | 31. Lever for rotatable operator seat |
| 10. Differential lock on/off | 21. Joystick | 32. Manual steering, auxiliary jack |
| 11. Steering wheel adjustment handle | 22. Outrigger controls | |



1.6 LOCATION OF CONTROLS AND FUNCTIONS – MODEL 822/834



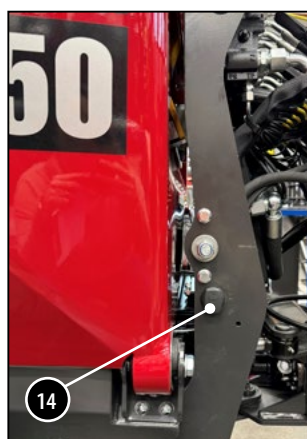
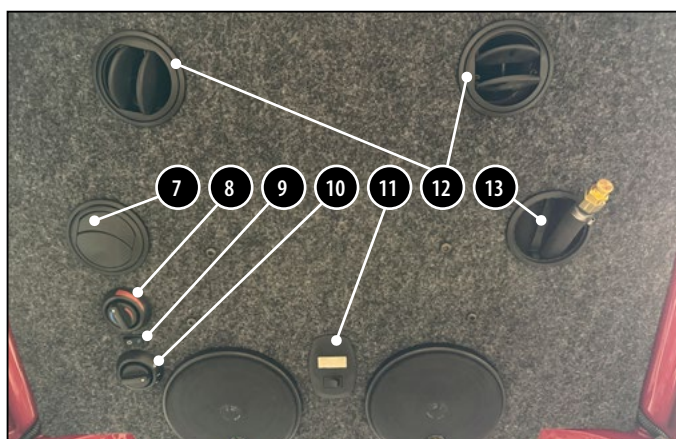
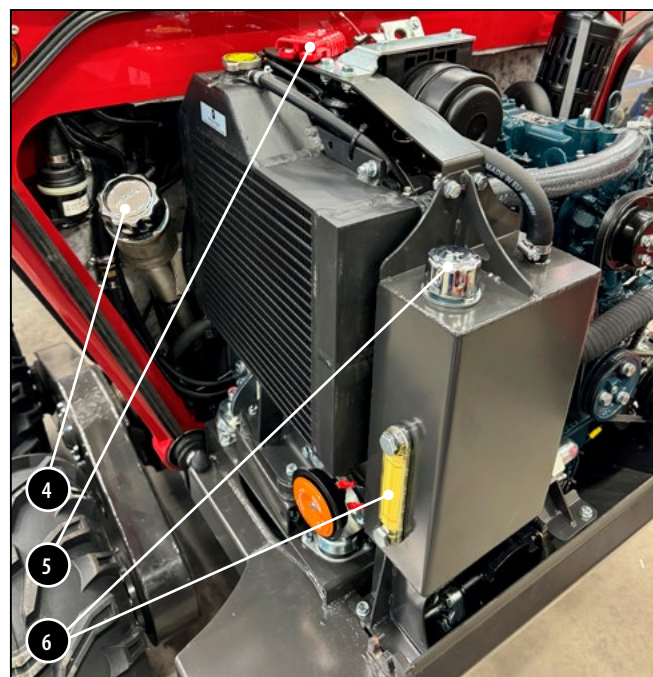
| |
|--|
| 1. Window handle closed |
| 2. Window handle open |
| 3. Window pins – pull out in event of emergency evacuation |
| 4. Radio unit (optional equipment) |
| 5. USB and AUX jacks (optional equipment) |
| 6. Jump start receptacle (optional equipment) |
| 7. Refuelling (model 834) |
| 8. Engine heater socket (optional equipment) |
| 9. Electric panel (model 822) |
| 10. Electric panel (model 834) |
| 11. Re-circulation valves |
| 12. Heating controls |
| 13. Air condition on/off |
| 14. Fan speed control |
| 15. Courtesy lights |
| 16. Adjustable valves |
| 17. Air vent tap for coolant replacement |
| 18. Hydraulic oil filling/inspection inlet (model 834) |



1.6 LOCATION OF CONTROLS AND FUNCTIONS – MODEL 850/850 H

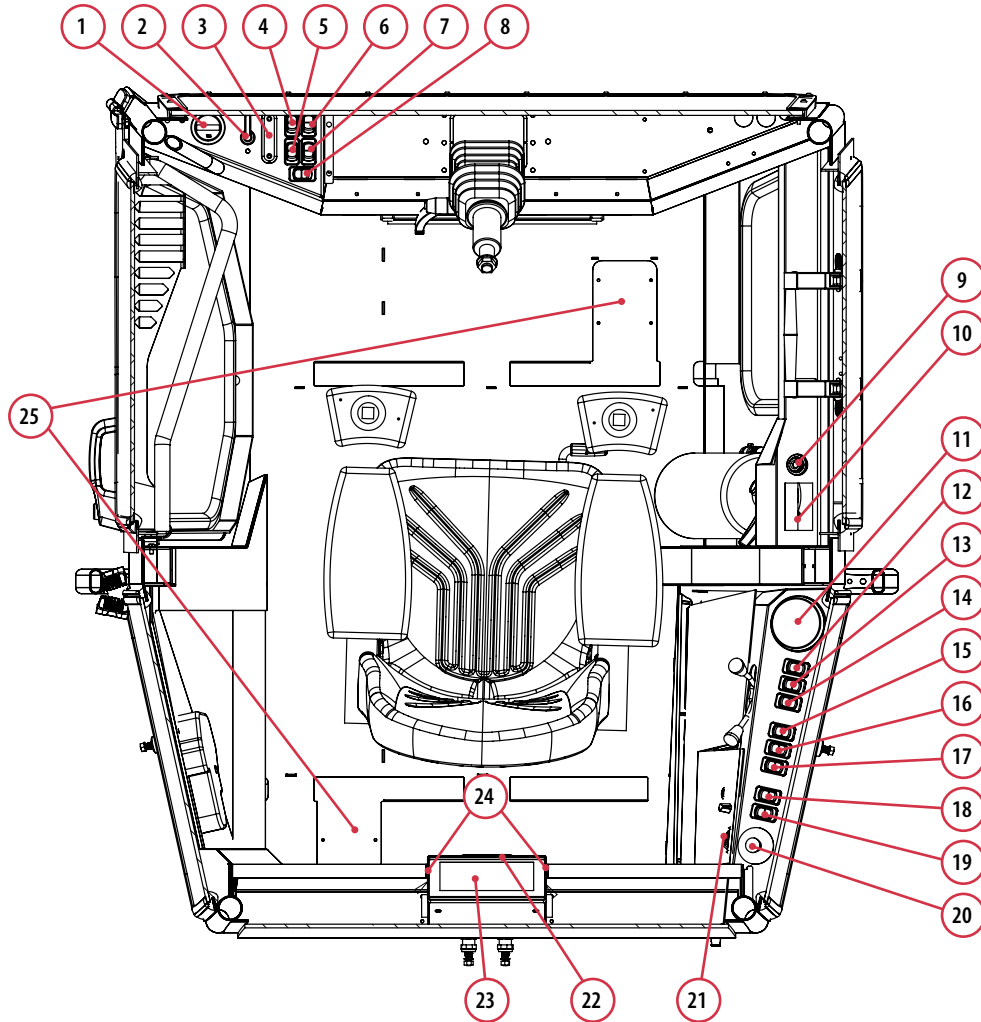


| |
|--|
| 1. Window pins – pull out in event of emergency evacuation |
| 2. Refuelling (model 850H) |
| 3. Refuelling (model 850) |
| 4. Refuelling (model 850) |
| 5. Jump start receptacle (optional equipment) |
| 6. Hydraulic oil filling/inspection inlet (model 850) |
| 7. Re-circulation valves |
| 8. Heating controls |
| 9. Air condition on/off |
| 10. Fan speed control |
| 11. Courtesy lights |
| 12. Adjustable valves |
| 13. Air vent tap for coolant replacement |
| 14. Engine heater socket (optional equipment) |
| 15. Opening the engine bonnet |



1.6 LOCATION OF CONTROLS (Model 850)

Please check the type of equipment fitted on your machine.



| | |
|--|--|
| 1. Hour meter | 14. Work lights crane/cross |
| 2. Main power switch | 15. Differential locks |
| 3. Indicator lamp/warning | 16. Front wiper |
| 4. Dipped beam | 17. Rear wiper |
| 5. Strobe | 18. Side wiper (option) |
| 6. Hazard warning lights | 19. Roof wiper |
| 7. Travel direction: Forward / Neutral / Reverse | 20. Emergency stop |
| 8. Direction indicators | 21. Winch |
| 9. Ignition switch | 22. Indicator lamp/warning |
| 10. Oil pressure, glow plug panel, etc. | 23. Hour meter, Fuel gauge, Temp meter, Tachometer, Wiper interval |
| 11. Radio | 24. 12 V socket/USB |
| 12. Work lights front | 25. Accelerator pedal |
| 13. Work lights side/rear | |

1.7 INSTRUCTIONS FOR SAFE USE

Always read the instruction manual before use and during service.

Safety area and risks

Unauthorised bystanders are not permitted within a 50-metre safety area around the machine. The operator must have full visual control of the work area. Also be aware of the risk of contact with high-tension power lines and the risk of the machine overturning which could extend the risk area.

The machine has an excellent ability to move around on the terrain. However, it is very important to always employ safe driving techniques. For more information, please refer to Operation/Off-road driving.

- Where necessary when operating the crane, employ the outriggers to prevent the rear section from tipping over.
- Always park the crane in its transport position. See picture.



- Maintain a safe distance from high-tension power lines and pay attention to possible risks and unpredictable movements.
- If your machine has a winch, please be aware that using it can involve some risks.
Be sure you are aware of its safe use. See the separate instructions.
- There is a risk of crushing with moving machine parts; do not touch any moving parts.
- When using a tippable flatbed, place the machine on a level surface and employ the outriggers.
- Never overload the machine. Loads over the loading gate can cause the load to slide over the gate and hit the operator. This can result in serious injury or death. Never load more than the maximum permitted weight.

Emergencies

If there is any risk of the rear section overturning, immediately lower the lifting boom by pushing the operating lever to the lowering position. Keep the lever in position until the load and crane reach the ground. If the lowering operation is interrupted, the risk of overturning will increase.

If the crane comes in contact with a high-tension power line: Warn possible bystanders not to touch the machine, never touch any metal parts and remove the arm system from live cables.

Emergency stop (see position under "Location of controls"): Push the button down with your palm to stop the engine. Please note that the hydraulic pressure will be lost. **Please note that when trying to start with the emergency stop depressed, the engine will turn as long as the key is held in the start position but will stop when the key is released back to the on position.**

The machine is equipped with a fire extinguisher. Instructions for correct use are available as an appendix to this instruction manual. In the event of a fire in the engine compartment, spray through the grilles.

Emergency exits are clearly marked. See "Machine labels" earlier in this section.

The door and window can be used as emergency exits. The window can be opened fully by first pushing the handle up and then pulling out the two red pins. See picture 1-3 in Chapter 1.6 Location of controls and their functions on page 18. If the machine is going to be driven on ice, remove the door and fully open the window to facilitate easy evacuation in an emergency.

Ergonomics

Always use hearing protection as noise can be harmful to hearing.

The sound level in the cab on models 850 and 850H does not require any hearing protection inside the cab. However, it is recommended to always have personal protective equipment available for work inside and outside the machine. Prolonged sitting can be harmful to the body. Keep your body in motion to prevent this. Machine vibrations can cause strain injuries, especially in the lumbar region. Levels of exposure to vibration have been measured to $A_8 = 0.5 \text{ m/sec}^2$

1.8 SAFETY CHECKS/DAILY INSPECTION

Always perform safety checks on a daily basis before operating the machine and always in connection with any form of damage or incident.

Periodic inspections can prevent damage to the machine and reduce service outlays as well as prevent incidents.

Any detected damage or wear must be promptly repaired. Check for wear, cracks, damage, loose or defective guards.

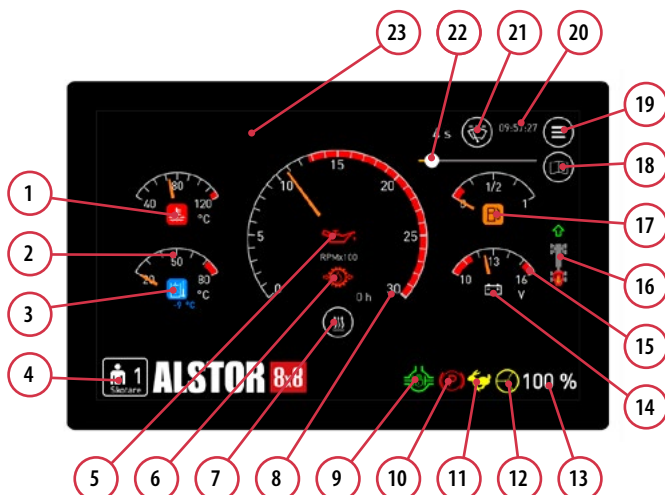
Check that:

- The wheel bolts have been correctly tightened, tyres are free of damage and are correctly inflated, and also make sure the crane mount and weights are free of damage and correctly secured.
- The engine oil levels and hydraulic fluid levels are correct; adjust if necessary according to instructions.
For details, please refer to the section on service and maintenance.
- Fuel level. Fill up if necessary according to the instructions. For details, please refer to the section on service and maintenance.
- Parking brake and service brake function.
- No hoses are damaged.
- All fasteners are tightened. Retighten if necessary.
- There is no leakage. If detected, take immediate corrective action.
- Reflectors are intact, clean and correctly positioned and the lights operate correctly.
- Protective guards are closed.
- There are no loose or foreign objects on the machine that can affect safe operation.
- Regularly check the best before date and pressure of the fire extinguisher.

1.9 DISPLAY, 850/850 H

The appearance of the display may differ depending on options and fitted equipment.

| Item | Symbol/button | Information |
|------|---|---|
| 1. | Radiator water temperature | |
| 2. | Hydraulic oil temperature | |
| 3. | Low/high hydraulic oil temperature indication | Low = Blue, High = Red. If the temperature becomes high, stop the engine and investigate the cause. The engine warm-up programme is indicated by symbol no. 7. |
| 4. | Operator selection | The machine features 5 separate crane operator settings. |
| 5. | Diesel engine low oil pressure warning | Switch off the engine immediately and check the oil level. |
| 6. | Diesel engine low oil pressure hydrostat | Switch off and check the hydraulic oil level. |
| 7. | Warm-up programme | Available between -10°C and +15°C. Activate using the button. Refer to the instructions. Once sufficient temperature is reached, the warm-up function automatically switches off. |
| 8. | Tachometer | Never exceed the red marking on the tachometer. Automatic adjustment according to the operating temperature. |
| 9. | Differential lock | When the lamp is illuminated, the differential locks are engaged. When activated, the lamp flashes yellow for 4 seconds and the machine cannot be operated. |
| 10. | Automatic parking brake | Indicates that the machine is braked. If the machine moves despite the lit indicator, check brake operation. |
| 11. | High gear activated | Activates when inching between 50 and 100% in high gear. |
| 12. | Machine steering | Steering control is activated when the lamp lights. |
| 13. | Inching | 0-50% low gear. 50-100% high gear. |
| 14. | Low battery voltage | Alerts of low battery voltage. Investigate the cause. |
| 15. | Battery voltage | |
| 16. | Heading indicator/Outriggers down | Front/rear gear. Also indicates if the outriggers are down. |
| 17. | Fuel gauge | Warns when approximately 3 litres remain. |
| 18. | Lever information | |
| 19. | Menu button | |
| 20. | Clock | |
| 21. | Windscreen wiper activated | Press to adjust the interval. |
| 22. | Windscreen wiper interval | Use the display for stepless interval adjustment. |
| 23. | * Outrigger warning | A symbol in combination with a red warning frame will warn when the outriggers are down and the machine is in motion. |



INFORMATION AND INSTRUCTIONS FOR OPERATION AND DRIVING, 822/834

2.1 OPERATIONS BEFORE STARTING

Operations before starting

- Please read the instruction manual before using the machine. Pay special attention to the chapter on safety.
- Only operators with the requisite competence and experience are allowed to operate the machine.
- Always perform a complete safety check before operating the machine. Please refer to the section on safety/safety checks/daily maintenance.
- Personal protective equipment must be worn.
- Pay attention to the need for an ergonomic operator environment, and adjust the seat and steering wheel to suit your needs.



WARNING! Be careful when turning the seat so that you do not accidentally access the levers or cause unintentional crane movement, which can lead to serious injury.

2.2 STARTING, STOPPING AND DRIVING INSTRUCTIONS, 822/834

Starting instructions

- Turn on the main power switch (please refer to safety/location of controls).
- The manual throttle should be off and the gear switch lever left in neutral.
- Operate the glow plug by turning the key to the spring-loaded "HEAT" position so the glow plug lamp lights. Keep the key in this position for 10 seconds.
Then immediately start the engine by turning the key to the "START" position. There is no need for glow-plug operation when the engine is warm.
- When the outdoor temperature is -10°C or less, it is recommended to warm up the engine for 5-10 minutes.
- At temperatures lower than -20°C , utmost care should be taken into consideration and the machine must not be loaded with more than half of its normally permitted loads.
- Check that there are no illuminated warning lamps. (Please refer to the picture in the section safety/location of controls)
- Release the parking brake (please refer to safety/location of controls)
- Once the engine runs evenly without effort at the lowest idling speed, shift the gear shift lever to the desired gear and gently press on the accelerator pedal to put the machine in motion.
- In the event of any problems with starting the engine, please refer to the instruction manual from the engine manufacturer (attached in the document binder).

Gear shifting up and down

Only shift gears when the machine is stationary. Do not force the gears in. If it is difficult to shift into or out of a gear, you can slightly reduce the pressure on the brake pedal, allowing the machine to roll a little and then gently try shifting gears again.

Activation of differential locks

The machine must be stationary when activating the differential locks.

To activate, press the button (see page 16 item 6 for model 822; see page 17 item 10 for model 834) and wait 4 seconds.

Before starting off, gently turn the steering wheel back and forth.



WARNING! Please note if drive-off occurs before 4 seconds have passed, there is a big risk of serious damage to the machine.

INFORMATION AND INSTRUCTIONS FOR OPERATION AND DRIVING, 822/834

Stopping the machine

- Release the accelerator and press the brake pedal to stop the machine.
- Park the machine on a level surface and apply the parking brake.
- When the machine comes to a complete stop, turn the ignition key to the "OFF" position. The engine will then stop.
- Only idle for a limited time and in accordance with local regulations.

Emergency stop

- Use the emergency stop switch in an emergency to switch off the engine. Please refer to safety/location of controls.
- To reset the emergency stop, turn the knob clockwise according to the symbol.
- To switch off the engine, turn the ignition key to the "OFF" position.
- Switch off the main power switch and remove the ignition key from the ignition switch.

Braking

For engine braking downhill, apply a little throttle. This will cause the variator plate in the engine to engage with the variator belt. If the engine is left operating at idling speed, the variator will not engage with the belt and the machine will remain in neutral.



WARNING! If engine braking is insufficient, operate the service brake with your left foot for additional braking.

Parking instructions

Apply the parking brake to ensure the machine cannot move inadvertently, then switch off the main power switch and remove the ignition key from the ignition switch.



WARNING! *The parking brake wire is interlocked with the operator seat. When the parking brake is applied with the operator seat in the rearward position, be sure to apply it further when swivelling the chair back to the normal position. If the seat is turned from its normal position to the rearward position with the parking brake applied, the parking brake will be applied even further causing unnecessary wear of the wire.*

Park the machine on level, solid ground. If necessary, put chocks under the wheels. In order to relieve the hydraulic system and to secure the crane against accidental movement, always make sure that the parked crane is set to its lowest position and locked with the gripper at the rear section of the timber carrier. See the picture in chapter 1.7

INFORMATION AND INSTRUCTIONS FOR OPERATION AND DRIVING, 850/850 H

2.1 OPERATIONS BEFORE STARTING

Operations before starting

- Please read the instruction manual before using the machine. Pay special attention to the chapter on safety.
- Only operators with the requisite competence and experience are allowed to operate the machine.
- Always perform a complete safety check before operating the machine. Please refer to the section on safety/safety checks/daily maintenance.
- Personal protective equipment must be worn.
- Pay attention to the need for an ergonomic operator environment, and adjust the seat and steering wheel to suit your needs.



WARNING! Be careful when turning the seat so that you do not accidentally access the levers or cause unintentional crane movement, which can lead to serious injury.

2.2 STARTING, STOPPING AND DRIVING INSTRUCTIONS, 850/850 H

Starting instructions

- At temperatures lower than -20°C , utmost care should be taken into consideration and the machine must not be loaded with more than half of its normally permitted loads.
 - The engine warm-up function should be used at temperatures between -10°C and $+10^{\circ}\text{C}$. At temperatures below -10°C , run the machine at idling speed for careful engine warm-up until it reaches a temperature to run the warm-up function, at which time the symbol will light up. Instructions: Activate the engine warm-up programme symbol on the display. (1) Follow the instructions shown in the display. Move the telescopic boom/crane tilt outwards to the end position and hold it there for about 5 seconds until the signal sounds. This will cause oil overflow to quickly heat up the hydraulic oil. Before the oil reaches an operating temperature of $+15^{\circ}\text{C}$, the hydraulics for the crane and transmission will be limited to protect the pumps. When the oil has reached the correct temperature, the engine warm-up function will automatically stop the oil overflow and the machine is ready to use. Never exceed the red marking on the tachometer. It is automatically adjusted according to the operating temperature. (2)
 - Turn on the main power switch (please refer to safety/location of controls).
 - The manual throttle control should be in the start position, i.e. half throttle.
 - Switch off all external switches including the lights. Turn the ignition key to the glow position, and leave for 5-15 seconds depending on the air temperature. Continue turning the key to START to start the engine.
 - Make sure the desired direction of travel has been set with the heading button (see the functional marking image)
 - Place your foot on the accelerator pedal. Press slowly to check that the correct travel direction is selected. If not, adjust. The direction of travel is shown in the display.
- Please note that the machine will not achieve full performance until it is fully warmed up. Thus, it can be perceived as being slower and more sluggish at the beginning; this is perfectly normal.



INFORMATION AND INSTRUCTIONS FOR OPERATION AND DRIVING, 850/850 H

Speed control

Adjust the speed with the help of the manual throttle control and by pressing on the accelerator pedal with the foot.

Adjust the engine speed with the manual throttle control to 1800-2600 rpm. (See the tachometer functional marking image)

Three things control the speed of your machine:

- The speed of the diesel engine is adjusted using the manual throttle control. The higher the engine speed, the faster/stronger the machine operates.
- The accelerator pedal: the more you press the pedal, the faster the machine travels. Please note that this also acts as a service brake. If you release the pedal, the machine will stop.
- The higher the percentage of inching/potentiometer (see safety/location of controls on page 15, item 10), the faster but less powerful the machine will be. Conversely, the lower the percentage, the stronger but slower the machine will be.



WARNING! *The accelerator pedal is the only service brake. If you release the pedal, the machine will stop.*

Activation of differential locks

The machine should be stationary and the accelerator pedal must not be pressed when activating the differential locks.

Press the button to activate (page 20, button 15). Wait for 4 seconds. Before starting off, gently turn the steering wheel back and forth.

The differential lock is activated when the lamp lights up. When activated, the lamp flashes yellow for 4 seconds and the machine cannot be operated.

STOPPING AND PARKING THE MACHINE

- The machine is equipped with an automatic parking brake.
- When the machine comes to a complete stop, turn the ignition key to the "OFF" position. The engine will then stop.
- Only idle for a limited time and in accordance with local regulations.
- Park the machine on a level surface, switch off the main power switch and remove the ignition key.
- Where necessary, secure the machine by putting chocks under the wheels.
- In order to relieve the hydraulic system and to secure the crane against involuntary movement, always park the crane in the lowest position. Refer to the crane's instruction manual provided in the document binder.
- In the event of any problems with starting the engine, please refer to the instruction manual from the engine manufacturer (provided in the document binder).

EMERGENCY STOP

Use the emergency stop switch in an emergency to switch off the engine. Please refer to safety/positions of controls.

To reset the emergency stop, turn the knob clockwise according to the symbol. To switch off the engine, turn the ignition key to the "OFF" position. Switch off the main power switch and remove the ignition key from the ignition switch.

WARNING SIGNALS DURING OPERATION

The following signals warn of machine malfunctions. Switch off the machine immediately and troubleshoot.

NOTE: The buzzer will only sound if the engine is running.

- Engine overheated = Horn and warning lamp
- High coolant temp = Buzzer and warning lamp
- Low transmission pressure = Buzzer and warning lamp
- Low diesel engine oil pressure = Buzzer and warning lamp
- Outrigger warning = Three beeps from buzzer and warning on display and warning lamp

2.3 OFF-ROAD DRIVING

Safe off-road driving largely depends on the operator's experience and judgement. Familiarise yourself with the machine and practise driving your Alstor on easy terrain and firm ground. The machine should normally be operated with the differential lock disengaged = not activated. NOTE: When engaging/disengaging the differential lock, the machine should be stopped. Wait 4 seconds after operating the differential lock and then move the steering wheel a little before you continue driving.



WARNING! On steep hills and slippery surfaces, the differential lock should always be engaged as a precautionary measure.

- Take the necessary precautions when driving up or down steep slopes. Drive straight up and straight down in 1st gear.
- When driving downhill with engine braking, please see the section "Braking". Always select a safe route.
- Never drive uphill or downhill on slippery or loose ground.
- Never engage the differential lock on machines with steel crawler tracks regardless of the surface.
- When driving on frozen lakes/waterways, always remove the door and open the window.
- Avoid driving across steep hills. There is a risk that the machine could overturn.
- Never turn on steep uphill or downhill slopes. There is a risk that the machine could overturn.
- When driving, always try to position obstacles (stumps, stones, etc.) under the wheels.
- Navigate past obstacles at low speed.
- If wheel pairs start slipping in rough terrain: Stop the machine, press the button to engage the differential locks, wait 4 seconds and then move the steering wheel a little before driving off again. Once you have cleared the obstacles/difficult terrain, stop the machine, press the button to disengage the differential locks, wait 4 seconds and move the steering wheel a little before you continue driving.



WARNING! If you feel the machine is about to overturn, jump off on the uphill side – never on the downhill side. Switch off the ignition key and the main power switch. If possible, secure the machine and call for assistance. Never walk on the downhill side of the machine as this is associated with mortal danger.

- If only the rear section of the machine overturns, it is possible to tip the rear section back to its normal position. Check to see whether anything is damaged, and remedy any faults immediately. If no damage is detected, continue with your work/route.
- If the front section of the machine overturns, pay special attention and check for any leaking fluids (fuel, oil, etc.).



WARNING! Fuel leakage can cause a fire.

- If the front section has overturned, request an inspection from an authorised workshop before using the machine again.
- Alstor machines can navigate through water up to a depth of 37 cm. Carefully check that the water is not too deep or is flowing too rapidly. This is associated with danger. Always take great care.
- Watch out for hidden obstacles and slippery stones in the water.
- Keep in mind that when driving through water, the variator can slip and the brake function can be impaired. Apply the brake several times until the brakes have dried and operate normally.

2.4 TOWING, RECOVERY AND TRANSPORT OF THE MACHINE, 822/834



WARNING! Vehicle recovery may only be carried out at low speed and with great caution. When towing, do not exceed a speed of 3 km/h and a distance farther than 200 m. Tow to the nearest firm ground for repair or transport on a trailer, etc.

Recovery

When recovering the machine:

Front – use the towing points in the chassis (see figure 1).

Rear – use the designated attachment points (see figure 2.)

Always set the crane in the parked position and remove any load.

Always maintain a safe distance and be aware of the risk of overturning.

If the engine is running, put the gear shift lever in neutral.



WARNING! Steering is unavailable when the engine is switched off.

Transport

When transporting the machine on a trailer or other means of transportation, secure it safely. During transport, the machine must be secured so that it is able to counteract a forward force that is equal to the full total weight as well as to the rear and sides that is equal to at least half the total weight. We recommend using tensioning straps since standard ropes are unsuitable because they can stretch when subjected to heavy loads. Check the condition of the tensioning straps and replace them if damaged. Apply the parking brake and switch off the main power switch. During machine transport, the crane arm should always be in the parked position and locked. Please make sure you have the requisite driving license qualifications that apply for your transport vehicle. Normally, the machine should rest on all eight wheels.

2.4 TOWING AND RECOVERING THE MACHINE, 850/850 H/851

If a situation occurs requiring towing of the Alstor 850/850H/851, the hydrostatic drive train must be disengaged by opening two bypass valves to allow the oil to circulate, and the automatic parking brake should be released.



WARNING! When the bypass valve is open and the brake is released, the machine will have no brakes and consequently will roll freely. As a result, perform towing with great caution.



WARNING! Towing may only take place at low speed and over short distances, at max. 3 km/h and max. 200 metres, for further transport on a trailer, etc. Higher speeds or longer distances may damage the hydrostatic drivetrain.

Whenever possible, set the crane in the parked position and remove any load before towing the machine. Always maintain a safe distance and be aware of the risk of overturning.

NOTE: The bypass function must be deactivated before starting the machine.

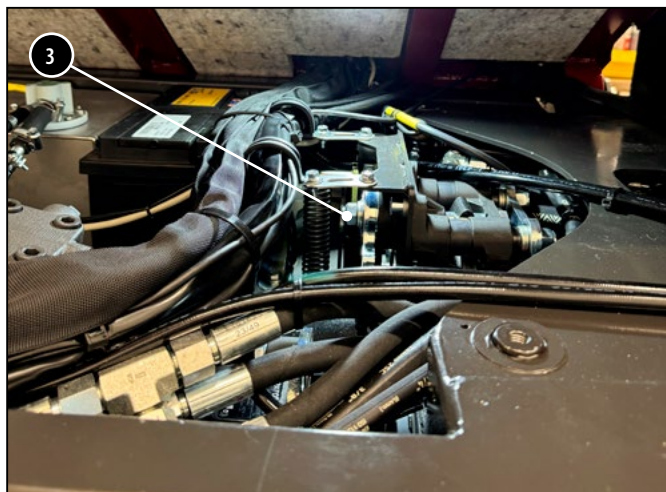
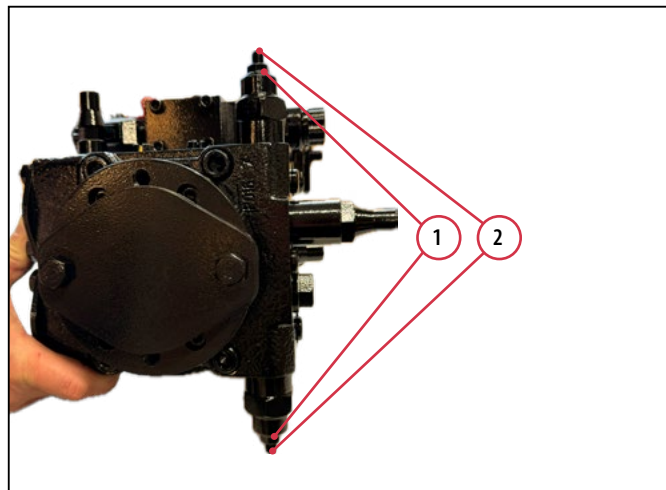
Activation of the bypass function

(execute on both the upper and lower screw):

- Switch off the engine.
- Open the engine bonnet and dismantle the undercover.
- Dismantle the hydraulic oil expansion vessel/filler tank.
- Loosen the lock nut (1) by turning it half a turn anti-clockwise.
- Use an Allen key to insert the screw (2) in a clockwise direction until resistance increases. Then screw it in half a turn more. Tighten the lock nut (1) in a clockwise direction to a torque of 22 Nm.

Releasing the parking brake:

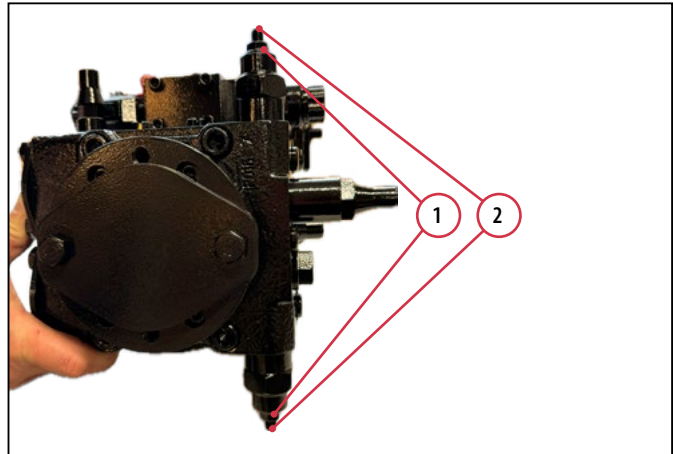
- Tilt the cab.
- Release the automatic parking brake by screwing the nut, which adjusts the position of the brake arm, 2 turns in an anti-clockwise direction. (3)
- For the towing strap attachment points, see 822/834 on page 30.



2.4 TOWING AND RECOVERING THE MACHINE, 850/850 H

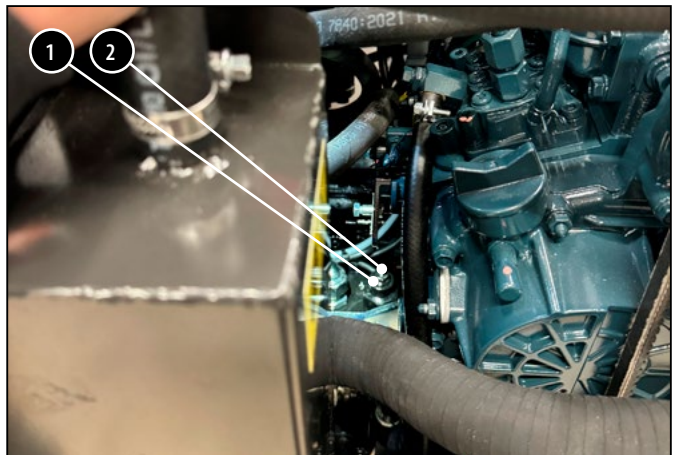
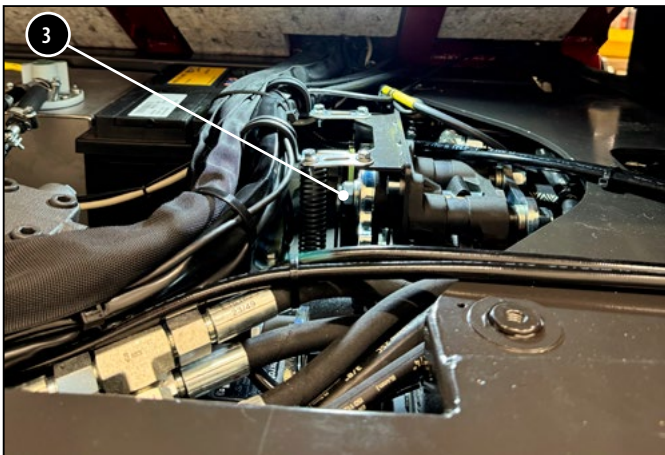
De-activation of the bypass function (execute on both the upper and lower screw):

- Loosen the lock nut (1) by turning it anti-clockwise half a turn. Use an Allen key to turn the screw (2) anti-clockwise until it stops.
- Retighten the lock nut (1) by turning it clockwise to a torque of 22 Nm.



Parking brake activation:

- Tighten the parking brake arm using a ½" extender and concurrently tighten the nut, which adjusts the position of the brake arm, so that the brake arm stays in the upper position (3).
- Then adjust the brake arm to the correct position by slowly loosening the nut (3) until the brake cylinder bolt is in the middle of the brake console.



WARNING! Steering is unavailable when the engine is switched off.

Transport

When transporting the machine on a trailer or other means of transportation, secure it safely. During transport, the machine must be secured so that it is able to counteract a forward force that is equal to the full total weight as well as to the rear and sides that is equal to at least half the total weight. We recommend using tensioning straps since standard ropes are unsuitable because they can stretch when subjected to heavy loads. Check the condition of the tensioning straps and replace them if damaged. Apply the parking brake and switch off the main power switch. During machine transport, the crane arm should always be in the parked position and locked. Please make sure you have the requisite driving license qualifications that apply for your transport vehicle. Normally, the machine should rest on all eight wheels.

2.5 DRIVING ON PUBLIC ROADS

Be sure to check applicable regulations in your area since driving rules for off-road vehicles on public roads can vary between different countries and even different regions in the same country.

In Sweden, off-road vehicle driving on public roads is regulated in the highway code (Trafikförordningen 1998: 1276), chapter 5, "Bestämmelser för trafik med terrängmotorfordon och terrängsläp på väg" (regulations for driving off-road motor vehicles and off-road trailers on public roads).

This means that off-road vehicles and off-road trailers may not be driven on roads other than private roads, except in cases where an off-road vehicle or an off-road trailer needs to cross a road that is not private, in which case the vehicle may travel on the road for the shortest possible distance. The same applies if, with respect to terrain conditions, it becomes necessary to drive on the road. In addition, the driver of an off-road motor vehicle travelling off road must first stop the vehicle before he/she drives onto the road. Other road users always have the right of way. For further details, please refer to the full legislation and always be aware of the regulations that apply to the local region.

2.6 ENVIRONMENTAL CONSIDERATIONS

We want to be able to enjoy and protect our forests for the future. With this in mind, we urge all users to show great respect to the environment. The Alstor was designed to have a minimum impact on nature and the environment. Its low ground pressure reduces damage due to driving and minimises ground compaction. It is important that you, as the operator, pay special attention to sensitive land and plan your journeys to minimise the effects on nature as you drive. To the greatest extent possible, use eco-friendly products for your Alstor, e.g. cleaning agents, oils, etc. Always ensure the proper recycling of waste products.

2.7 CRANE OPERATION

A separate instruction manual for the crane has been appended to the Alstor instruction manual.

Be sure to carefully read this before operating the crane. Pay special attention to the safety precautions.

For handling instructions, please read the section on crane operation in the crane's instruction manual.

INFORMATION AND SAFETY PRECAUTIONS FOR SERVICE AND REPAIRS

3.1 SAFETY, MAINTENANCE AND SERVICE

It is of utmost importance to maintain and service your machine to retain its performance level, safety functions, prevent breakdown and of course protect the value of your investment. Before each ride, check your Alstor (please refer to the chapter on safety/daily inspection/safety checks) and carefully follow the instructions in the service chart of this chapter. For all crane service and maintenance work, follow the instructions in the separate crane instruction manual.



WARNING! *Neglecting to maintain your machine according to our recommendations could present a direct danger.*

Safety

Always carefully read the instruction manual prior to service and repair work.

Any modification that affects the performance and safety of the machine may only be carried out by Alstor AB or by personnel and dealers duly authorised by Alstor AB.

Personal protective equipment must be worn when servicing the machine.

For daily inspection and safety checks, follow the instructions under the chapter "Safety checks/daily inspection" in the instruction manual.

All repairs and service work should be carried out by specially trained technicians.

Necessary safety precautions and care are of the utmost importance for any kind of service or repair work. It is impossible to warn about all possible risks here, and we urge you to pay the utmost attention and leave such work to a professional with the necessary know-how and tools to perform the work.

All maintenance, adjustments and replacement of parts, lubrication, filling of fuel and oil must be carried out when the machine is stationary and secured against accidental starting and accidental movement, i.e. the ignition switch and main power switch are switched off, the parking brake is applied and the machine is secured against movement or tipping over by parking it on level, firm ground, and by parking the crane correctly and putting chocks under the wheels.

Make sure the engine is shut off before commencing service work. Carbon oxide/carbon monoxide is a colourless and odourless gas that can impair the ability of the blood to transport oxygen causing fatigue and concentration difficulties. The gas is extremely dangerous in large amounts. This is why the engine must always be started and operated outdoors or inside premises with approved ventilation equipment.

Risk of burns from hot engine parts and the exhaust system. Allow the parts to cool before touching them.

In the engine compartment, there is a risk of crushing and injuries from moving parts, including burns from hot engine parts. Only perform troubleshooting with an open engine bonnet and with the engine running in exceptional circumstances. Exercise extreme caution in relation to the above risks.

Before starting the machine, alert everyone working on the machine and any bystanders.

Make sure that cigarettes, sparks and open flames are kept away from all petroleum products. There is a risk of fire.

When working on the electrical system, be sure to disconnect the battery cables from the battery.

Remove the battery before carrying out any welding work. Batteries produce explosive hydrogen gas during charging. Sparks or an open flame can give rise to explosions with a risk of serious injury.

Prior to repairing hydraulic components, make sure the hydraulic system has been depressurised. Be diligent and wear personal protective equipment, since hot hydraulic oil can easily penetrate the skin.

The person responsible for the service work should check and ensure that all repair work has been done properly and that all safety devices operate correctly.

3.2 IF YOUR MACHINE HAS OVERTURNED

If only the rear section has overturned, it is possible to return it to its upright position by using the outriggers and possibly the crane. Carefully check that nothing has been damaged. If nothing has been damaged, continue with your journey/work as normal.



WARNING! Immediately switch off the engine if the front section has overturned. Do not attempt to start the machine before checking for fuel leaks. Fuel leakage can cause a fire.

Tilt the machine back in an appropriate manner. If the front section has overturned, request an inspection from an authorised workshop before using the machine again. Crucial functions may have suffered damage, which in the worst case can lead to engine failure. If the front section has been lying on its side, check for oil leaks above the pistons before attempting a restart.

We recommend that a knowledgeable workshop checks the operation of the engine, possibly loosening the injector nozzles and running a number of revs with the starter motor so that any oil is ejected and then reinstalling the parts.

Be diligent and wear personal protective equipment, since hot hydraulic oil can cause serious injury.

3.3 LONG-TERM MACHINE STORAGE

If the machine is not going to be used for a long period of time, we recommend careful inspection to assure normal operation during subsequent commissioning and use.

We recommend the following preparations prior to long-term storage:

Drain the fuel

Change the engine oil and filter

Fill the cooling system to the correct level

Remove the battery and charge it regularly. For additional battery information, please refer to the chapter on service and maintenance/battery.

Store the machine within the indicated temperature range and out of direct sunlight. If the machine is going to be covered, avoid plastic covers and other tight materials that prevent air flow and collect moisture.

3.4 BATTERY

The following battery has been installed in your Alstor at the factory:

822: Silver Dynamic C6, 552 401 052 SD 12 V/52 AH Varta 520 A (EN)

834: Euopart Plus 12 V/72 AH, 572 409 068.EP, 680 A (EN).

850/850 H: Euopart Plus 12 V/72 AH, 9561572409. 680A (EN)

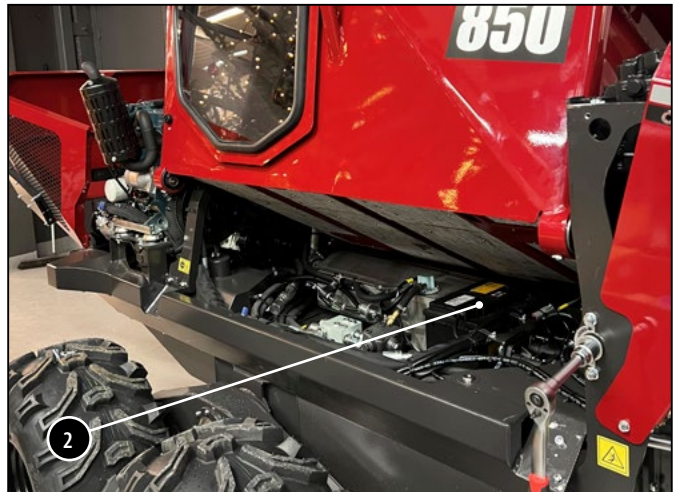
Care and maintenance

Make sure the battery and space around it is clean and free of dirt. Moisture and dirt around the battery terminals cause creepage currents. Keep the terminals clean from oxide and dirt; no grease on the terminals.

The battery is so-called maintenance-free (according to the EN standard) and under normal conditions filling fluid (water) is not required.

Battery localisation

1. Detach the floor plate next to the operator's seat (model 822/834).
2. Tilt the cab according to the separate instructions (for model 850/850 H).



Battery replacement

Loosen the cable lug from the minus terminal of the battery first, then the positive terminal and the battery bracket.

When reinstalling the battery and cover, connect the minus cable lug last to avoid sparking.

Also, make sure that the battery seat and cable lugs are clean (if necessary, replace with new ones) and that the cable lugs and the battery are secure.



WARNING! Batteries produce explosive hydrogen gas during charging. Sparks or an open flame can give rise to explosions with a risk of serious injury. Always use protective clothing and face protection. Leave battery maintenance work to an experienced mechanic.

Keep the following in mind

If the machine is going to be put in storage for a long period of time (3 months), the battery should be recharged beforehand.

A fully charged battery can cope at -63°C . A fully discharged battery can only cope down to -4°C .

It is best to store the battery under cold temperatures, since the self-discharge rate increases as the temperature increases.

A battery left with an off-load voltage of 12.4 V should be charged (the fully charged off-load voltage is 12.7 V)

If the battery has discharged to a level where the machine does not start, an old-type charger (not voltage-regulated) should be used. A so-called automatic/smart charger will not always fully charge a discharged battery.

When using a booster cable, connect the + terminal first. To prevent an explosion, earth the - cable to the chassis, not the battery.

3.5 FUEL



WARNING! Fuel and fuel vapours are highly flammable and explosive, which can lead to serious injury or death. Be very careful when handling fuel.

Pay attention to and be sure to read the instructions that apply to your model in the attached engine instruction manual.

Before operating the machine, regularly check the fuel hoses, fuel tank, fuel tank cap and couplings for cracks or leakage. Replace as needed.

Filling fuel

Open the engine bonnet in order to refuel (model 850/851). See controls on page 19.

Turn the engine off before removing the fuel tank cap.

Remove dirt and rubbish from the area around the fuel tank cap.

Check which fuel should be used in the machine; biofuel and regular fuel should not be mixed.

Fill the fuel tank with fuel recommended for your model.

Fill the fuel tank outdoors or in a well-ventilated area.

Do not overfill, ensure a maximum of up to 5 cm from the fuel tank cap as the fuel needs room to expand.

Keep the fuel away from sparks, open flames, pilot flames, heat and other sources of ignition.

In the event of diesel spills, wipe with a cloth or paper towel and decontaminate the area.

Note that any cloth/paper containing engine fuel should be disposed of in a fireproof container with a self-closing lid.

To prevent skin contact with fuel, we recommend the use of nitrile rubber gloves.

Draining fuel

If diesel is to be drained from e.g. the fuel tank, drain it into an earthed container. (For model 850 H, use the drain plug at the bottom of the tank.) Use separate containers for petrol and diesel fuel. Use a fuel suction device to suck the engine fuel from the tank.

3.6 LUBRICATION CHART, 822/834

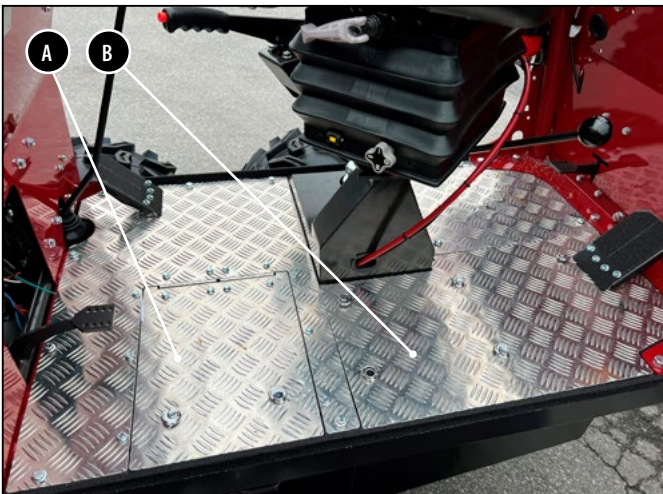
Always replace clogged or defective grease nipples.

Remove the load from joints before lubrication.

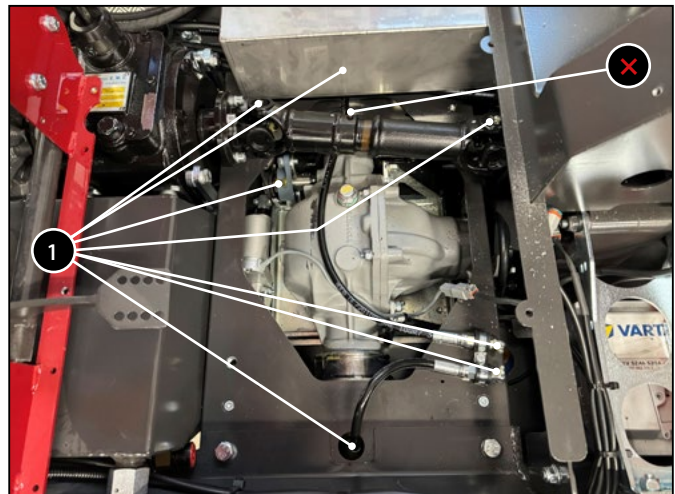
Use lithium-saponified grease with an NLGI grade 2 EP additive

| LUBRICATION CHART | | | |
|--|--------|-------------------|----------------------------|
| Lubrication site | Number | Lubricant | Interval (operating hours) |
| 1. Front section, under the floor front | 5 | Grease, see above | 400 h |
| 2. Front section, under the floor rear | 6 | Grease, see above | 400 h |
| 3. Centre joint and transmission shaft, left and right | 9 | Grease, see above | 50 h |
| 4. Rear section, inspection cover | 2 | Grease, see above | 400 h |
| 5. Rear section, inspection cover | 1 | Grease, see above | 400 h |
| 6. Bogie rocker rear section, left and right | 2 | Grease, see above | 50 h |
| 7. Left and right outriggers | 3+3 | Grease, see above | 50 h |
| x. Should not be lubricated | | | |

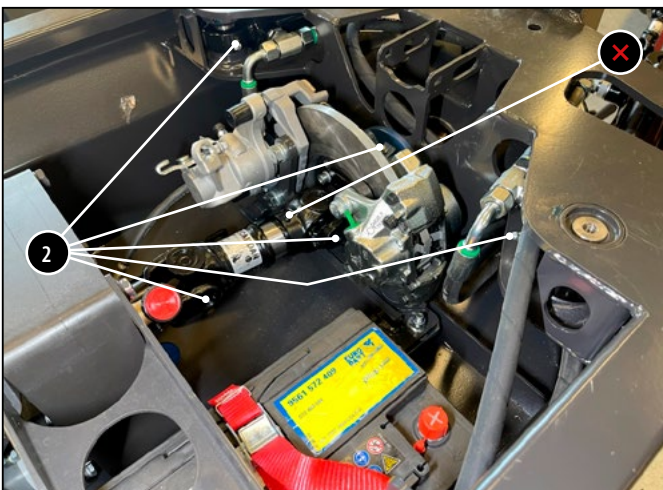
- A Remove the front floor plate by loosening the screws.
B Undo the rear floor plate by turning the quick fasteners.



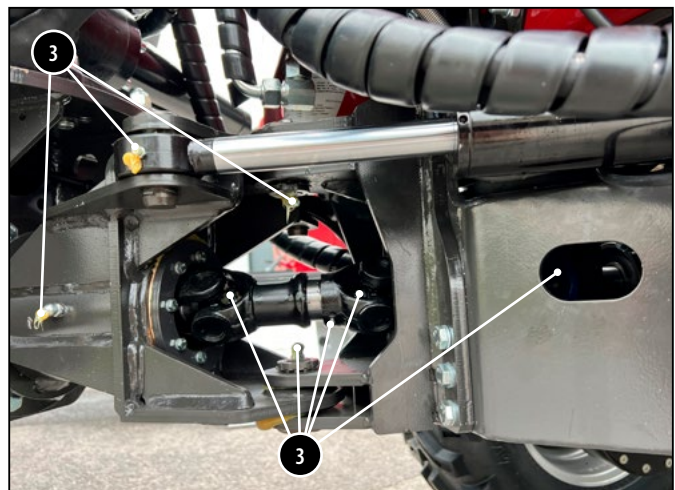
1. Grease points on the front section of the machine, front inspection cover.



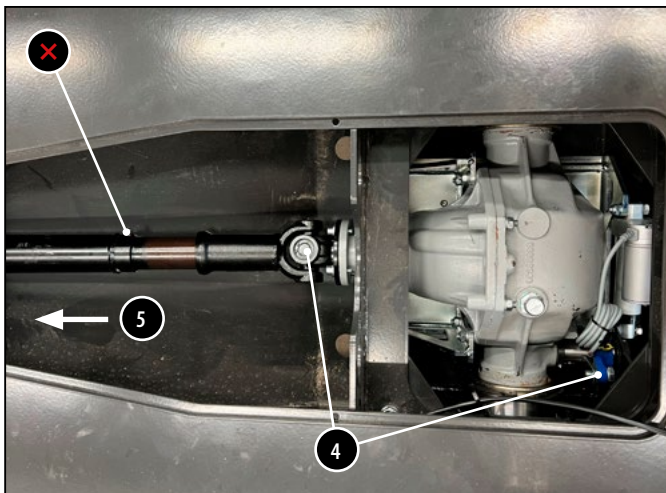
2. Grease points on the front section of the machine, rear inspection cover.



3. Grease points in the centre joint and on the transmission shaft.
Note: Grease points are on both the left and right side.



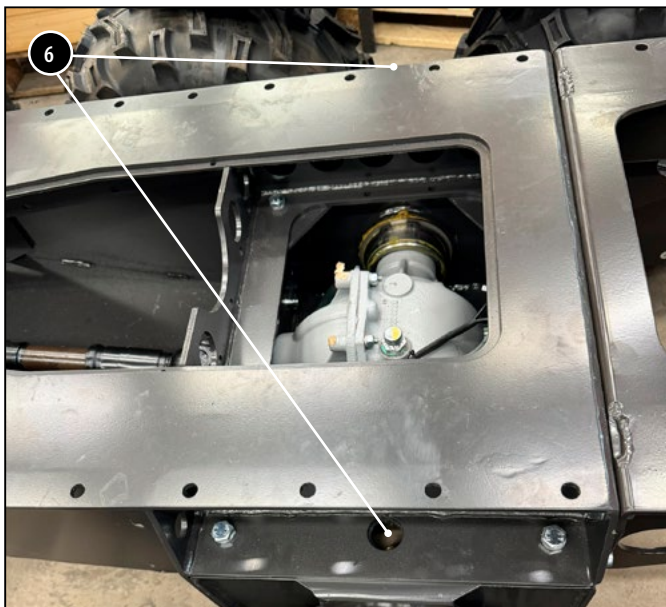
4. Undo the rear section inspection cover to gain access to the area.
Grease points for the rear section under the inspection cover 4. and 5.



5. NOTE: Front universal joint inside the cover.



6. Bogie rocker rear section, left and right



7. Left and right outriggers



3.6 LUBRICATION CHART, 850/850 H

Always replace clogged or defective grease nipples. Always remove the load from joints before lubrication.

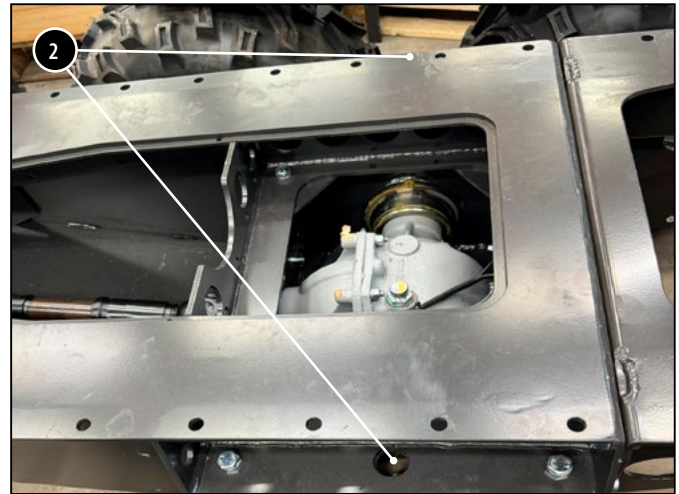
Use lithium-saponified grease with an NLGI grade 2 EP additive

| LUBRICATION CHART | | | |
|---|--------|-------------------|----------------------------|
| Lubrication site | Number | Lubricant | Interval (operating hours) |
| 1. Front under cabin | 3 | Grease, see above | 400 h |
| 2. Bogie rocker rear section, left and right | 2 | Grease, see above | 50 h |
| 3. Bogie front section and steering piston in front section | 4 | Grease, see above | 50 h |
| 4. Centre joint and transmission shaft, left and right | 8 | Grease, see above | 50 h |
| 5. Rear section under inspection cover (model 850) | 2 | Grease, see above | 400 h |
| 6. Rear section under inspection cover (model 850) | 1 | Grease, see above | 400 h |
| 7. Left and right outriggers | 3+3 | Grease, see above | 50 h |
| 8. Tilt piston cylinder, left and right | 4 | Grease, see above | 50 h |
| 9. Bogie rocker rear section, left and right | 2 | Grease, see above | 50 h |
| 10. Tilt axis left and right | 2 | Grease, see above | 50 h |
| 11. Universal shaft *Requires disassembly of weights. | 3 | Grease, see above | 400 h |
| ✗. Should not be lubricated | | | |

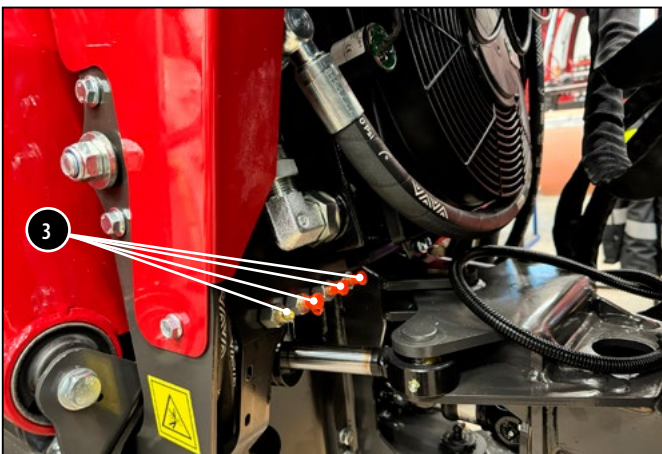
1. Front under cabin



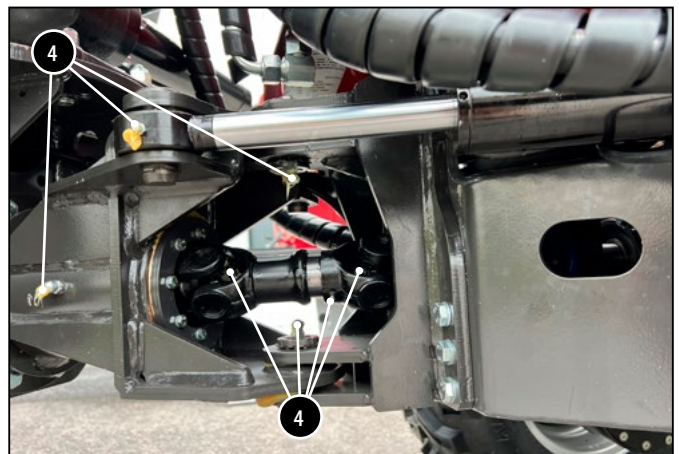
2. Bogie rocker rear section, left and right



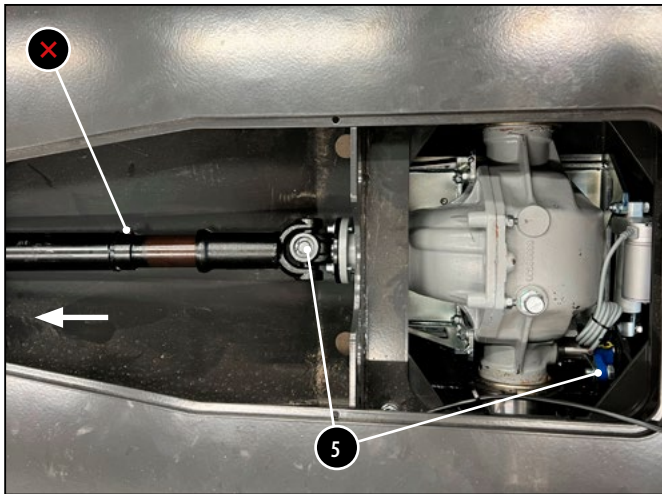
3. Bogie front section and steering piston in front section



4. Grease points in the centre joint and on the transmission shaft.
Note: Grease points are on both the left and right side.



5. Undo the rear section inspection cover to gain access to the area.
Grease points for the rear section under the inspection cover 5. and 6.



6. NOTE: Front universal joint inside the cover.



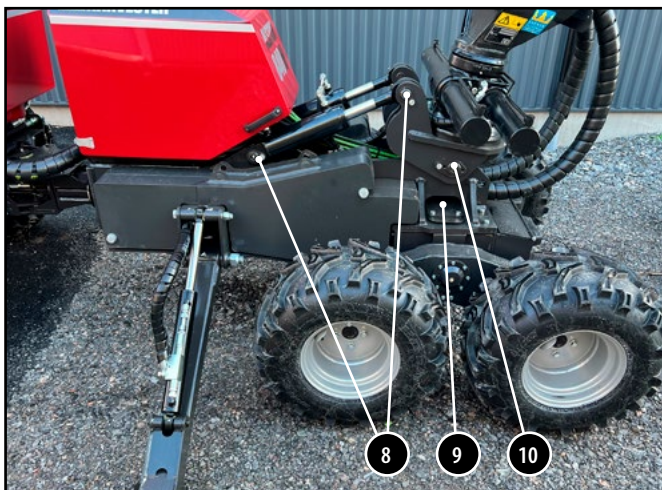
7. Left and right outriggers



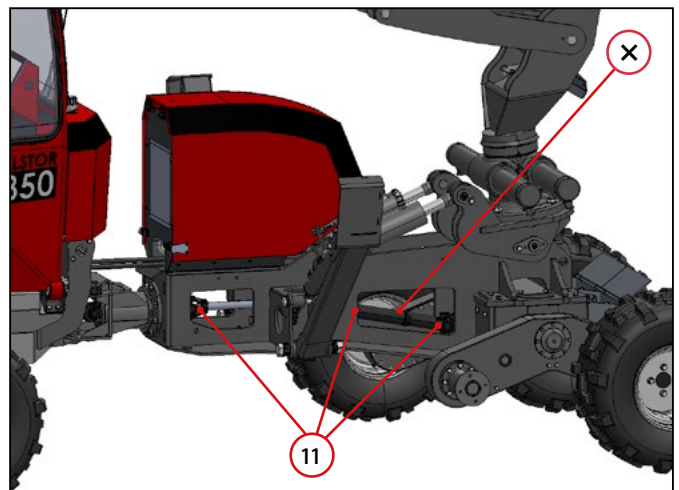
* Loosen the two large bolts holding the weights. Suspend using a rated lifting strap. Safely remove the weights one by one. See the example in picture. To reassemble, lift the weights back one by one and screw the bolts back.



8. Tilt piston cylinder left and right, 9. Bogie rocker rear section, left and right, 10. Tilt axis left and right



11. Universal shaft centre (model 850 H)



3.7 OILS, FILTERS AND LIQUIDS, 822/834

| Oils | 50-hour service | No. | Litres | Product type | Interval/operating hours |
|----------------------|------------------------------|-----|--------|---|--|
| Bogie boxes | | 4 | 2 | SAE 15W/40 | 1,200 hours/once a year |
| Engine oil | × | 1 | 3.2 | SAE 15W/40, API CI-4 | 50 hours for initial replacement, then every 400 hours/once a year |
| Differential | × | 2 | 1.5 | SAE 80W/90, API GL-5 | 50 hours for initial replacement, then every 400 hours/once a year |
| Hydraulic oil | × | 1 | 15.5 | SHS 32, ECO machine: ES 46 | 50 hours for initial replacement, then every 1,200 hours/once a year |
| Transfer box | × | 1 | 0.4 | SAE 80W/90, API GL-5 | 50 hours for initial replacement, then every 400 hours/once a year |
| Gearbox oil | × | 1 | 2.1 | SAE 80W/90, API GL-5 | 50 hours for initial replacement, then every 400 hours/once a year |
| Brake fluid | | | | ATE SL, DOT 4 | Request inspection and replacement by authorised service shop. During service, or at least every other year. |
| Oil – crane housing | See crane instruction manual | | | | |
| Filters | 50-hour service | No. | Litres | Product type | Interval/operating hours |
| Air filter | | 1 | | Filter cartridge | 400 hours/once a year |
| Engine oil filter | × | 1 | | See engine instruction manual | 50 hours for initial replacement, then every 400 hours/once a year |
| Hydraulic oil filter | × | 1 | | Spin-on external (822/834) with optional electric proportional control 2 × filters. | 50 hours for initial replacement, then every 400 hours/once a year |
| Fuel filter | × | 1 | | See engine instruction manual | 50 hours for initial replacement, then every 400 hours/once a year |
| Fluids | 50-hour service | No. | Litres | Product type | Interval/operating hours |
| Engine coolant | | 1 | 6 | Water/Monoethylene glycol (50/50) Environment: Water/propylene glycol (50/50) | Once a year |

3.7 OILS, FILTERS AND LIQUIDS, 850/850 H

| Oils | 50-hour service | No. | Litres | Product type | Interval/operating hours |
|----------------------|------------------------------|-----|--------|--|--|
| Bogie boxes | | 4 | 2 | SAE 15W/40 | 1,200 hours/once a year |
| Engine oil | × | 1 | 5 | SAE 15W/40, API CI-4 | 50 hours for initial replacement, then every 400 hours/once a year |
| Differential | × | 2 | 1.5 | SAE 80W/90, API GL-5 | 50 hours for initial replacement, then every 400 hours/once a year |
| Hydraulic oil | × | 1 | 40 | SHS 32, ECO machine: ES 46 | 50 hours for initial replacement, then every 1,200 hours/once a year |
| Transfer box | × | 1 | 0.4 | SAE 80W/90, API GL-5 | 50 hours for initial replacement, then every 400 hours/once a year |
| Oil – crane housing | See crane instruction manual | | | | |
| Filters | 50-hour service | No. | Litres | Product type | Interval/operating hours |
| Air filter | | 1 | | Filter cartridge | 400 hours/once a year |
| Engine oil filter | × | 1 | | See engine instruction manual | 50 hours for initial replacement, then every 400 hours/once a year |
| Hydraulic oil filter | × | 2 | | Insert filter (850/850 H) | 50 hours for initial replacement, then every 400 hours/once a year |
| Fuel filter | × | 1 | | See engine instruction manual | 50 hours for initial replacement, then every 400 hours/once a year |
| Fluids | 50-hour service | No. | Litres | Product type | Interval/operating hours |
| Engine coolant | | 1 | 6 | Water/Monoethylene glycol (50/50) Environment: Water/propylene glycol (50/50) | Once a year |

3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 822/834

Always take used oils/waste to the local waste collection facility for recycling.

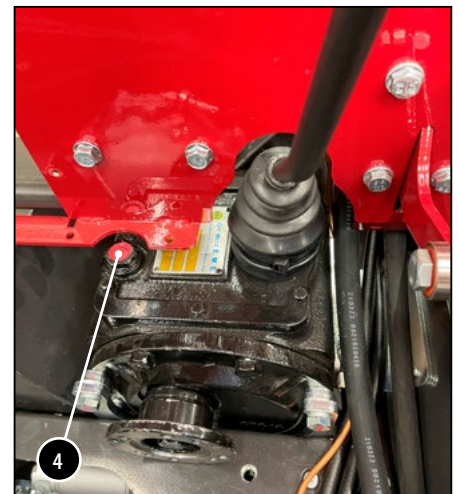


WARNING! Always wear personal protective equipment when handling oils. Oils can be corrosive to the skin. Oils in a warm machine can be extremely hot. Risk of injuries from burns.

The machine's undercover (1) may need to be removed to gain access to certain oils and filters.

Loosen 4 screws on each side. A total of 8 pcs.

After work is completed, reassemble and secure with the same screws.



Engine oil

Please also refer to the engine instruction manual. The engine oil plug can most easily be accessed from beneath the machine after having removed the undercover (1). The engine oil quality is important for both engine power and engine service life.

Always use the recommended oil grade and oil filters. Check, replenish or replace the oil regularly.

To replace engine oil filters, see under the filter heading later in this chapter.

Gearbox oil

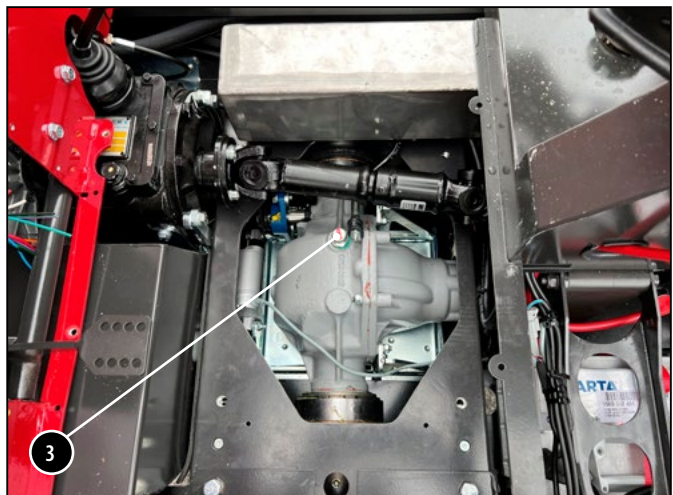
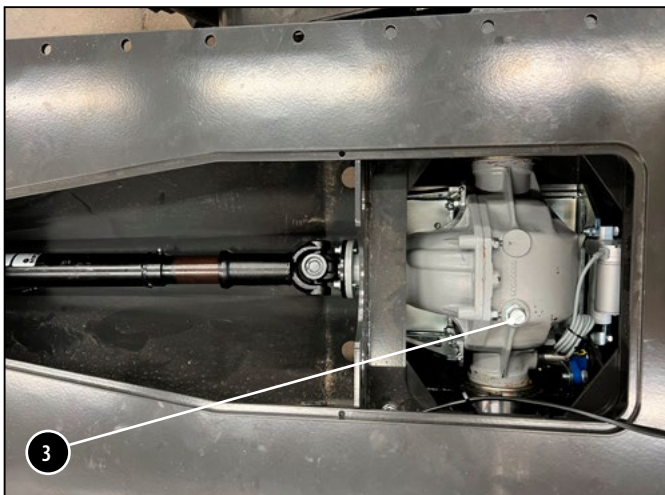
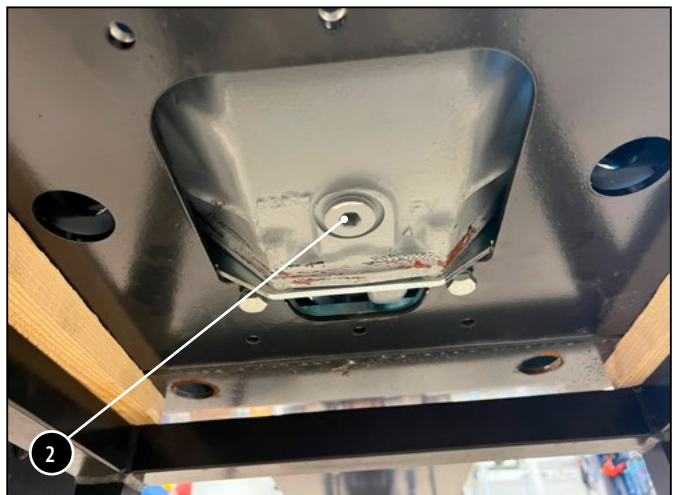
Recommended gearbox oil:

- To ensure quick and complete draining of the oil, replace the oil with the engine at normal operating temperature.
- To gain access, remove the undercover (1), front floor plate (3) and torpedo plate (2).
- The gearbox can most easily be accessed from the operator position. See picture.
- Remove the oil filler plug (4). Use the dipstick to check the oil level.
- Place a collecting vessel under the gearbox.
- The bottom of the gearbox has a drain plug.
To gain access to this under the machine, first remove the undercover as explained above.
Open it using a 12 mm Allen key.
- Unscrew the drain plug and drain the oil.
- Once the oil has been drained, screw the drain plug back into place and fill up with the recommended oil. For the correct quantity, see table 3.7 Oils, filters and liquids, 822/834.
- Replace the oil filler plug.

3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 822/834

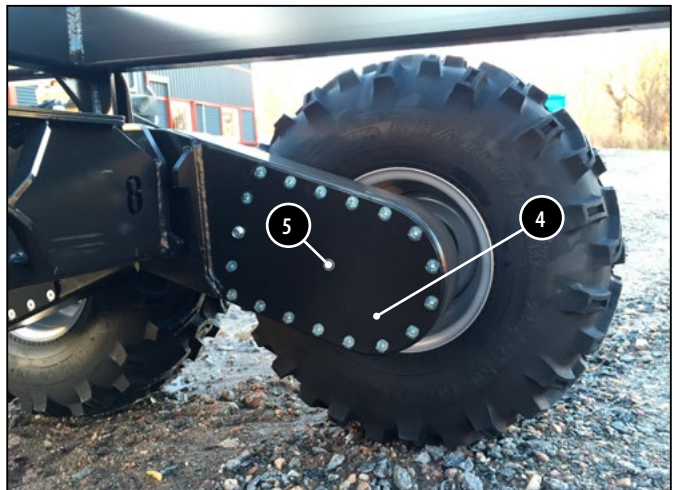
Replacement of differential oil at the rear and front.

- Place a suitable vessel for oil drainage underneath, open the bottom plug (2) and drain the oil. If the bottom plug does not come out, you may need to dismantle and remove the protective cover (1). NOTE: Located on both the front and rear section. See picture.
- Screw the drain plugs back and put the protective cover back in place.
- Remove the inspection cover/floor plate. Open the oil filler plug. (3) See the marking in the picture. Fill with new oil at the front and rear. See the table on page 42. Replace the oil filler plugs at the front and rear and refit the inspection cover/floor plate.



Bogie box oil

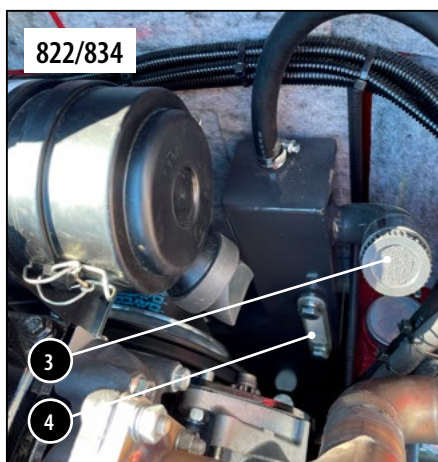
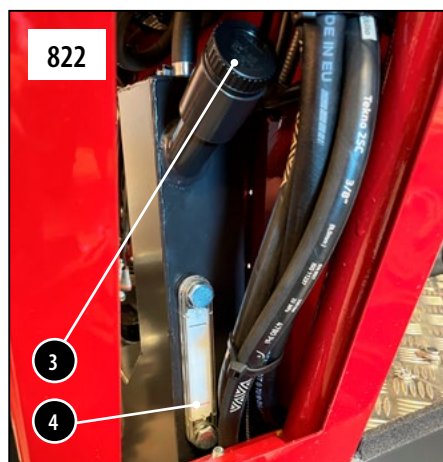
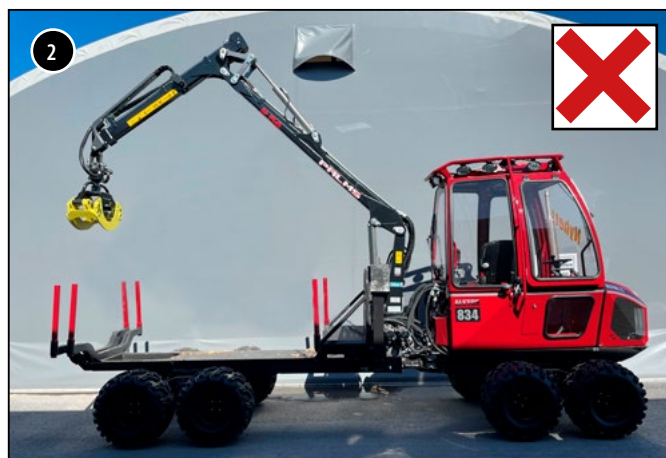
- Place an oil collection vessel under the inspection cover (4) on the inside.
- Undo the inspection cover on the inside by removing all screws. (4)
Allow the oil to be drained and, if necessary, suction out the remaining oil using oil suction equipment.
- Clean the surfaces of the inspection covers and apply new silicone. Replace the inspection cover using all the screws.
- Once the oil is drained, loosen the oil plug (5) and fill with 1 litre of oil at each wheel, i.e. a total of 2 litres in each bogie box.



3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 822/834

Hydraulic oil replacement/inspection

- When replacing the hydraulic oil, it is also recommended to change the hydraulic oil filter. See the instructions later in this chapter.
- Park the crane according to figure 1. Crane **NOT** parked in figure 2.
- Loosen the undercover. Place a suitable vessel for oil drainage underneath, and open the bottom plug located at the bottom of the tank to drain the oil.
- Once all oil has been drained, refill with the recommended oil to the lower marking on the sight glass (4).
- Replace the oil filler plug.
- Allow the machine to run warm for at least 5 minutes, and check and adjust so that the oil level is centred in the sight glass.
- Control: Park the crane according to figure 1. Allow the machine to run warm for at least 5 minutes, and check and adjust so that the oil level is centred in the sight glass.

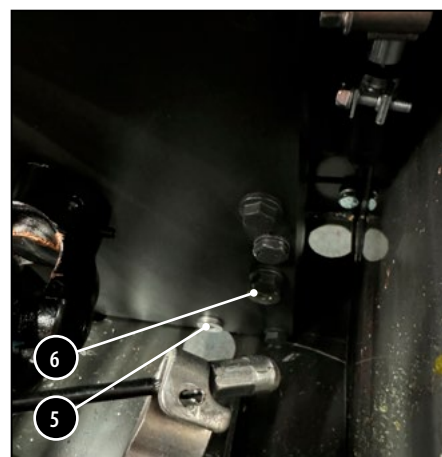
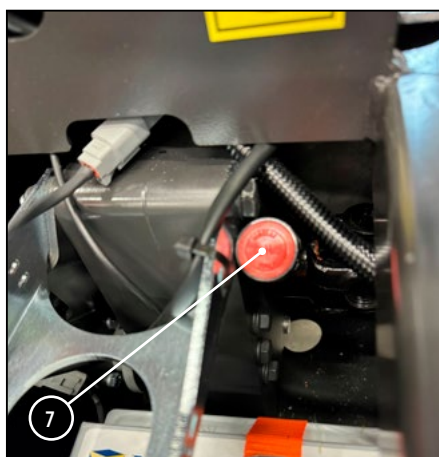


Transfer box oil

Place a suitable vessel for oil drainage underneath, and open the bottom plug (5) to drain the oil. Screw the bottom plug back in. Remove the floor plate next to the operator seat.

Open the oil filler plug (7) and, if necessary, also the level plug (6).

Fill up with 0.4 L of new oil. Tighten the oil filler plug and the level plug.

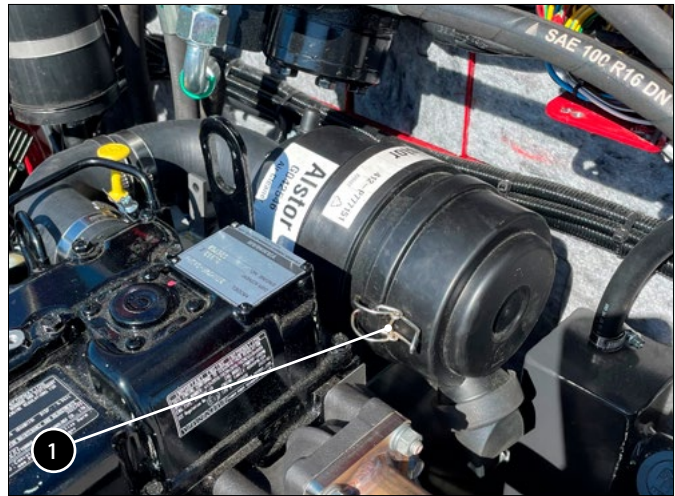


Air filter

Change the air filter in accordance with the interval in chapter 3.7 on page 42.

If the machine is exposed to excessive wear, inspect the air filter sooner and replace when necessary.

1. Loosen the clasps (1) and remove the filter.
2. Replace/clean the filter.
3. Reassemble all parts.




Hydraulic oil filter

Loosen the hydraulic filter (2) by turning it anticlockwise.

Lubricate the gasket ring with hydraulic oil.

Screw back the new filter.



 **WARNING!** Never open the expansion vessel when the engine is warm or when the engine is running – risk of high pressure. The coolant in a warm machine can be extremely hot. Risk of injuries from burns.

Coolant

Coolant replacement must always be carried out by authorised personnel. See the engine instruction manual. Please note that different types of coolant are used in the standard and eco models. (See chapter 3.7 Oils and filters)

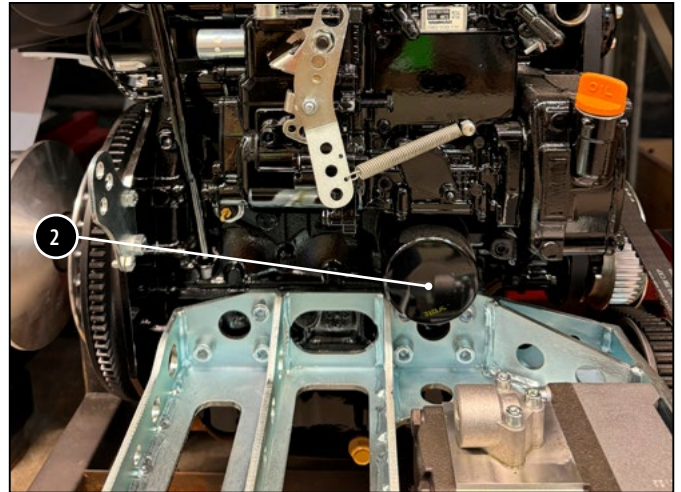
Open the cover of the expansion vessel (3). Fill to 3 cm from the top edge. Close the cover. Please note that at the normal operating temperature, if coolant is overfilled, the liquid can leak out from the drain hose (4). This is not hazardous for the machine. When replacing the coolant (only authorised personnel permitted to do this) on cab models, air bleeding of the heating package may be required. This is done via a venting hose in the roof. See the picture on page 18, item (17).



Engine oil filter

To gain access to the engine oil filter, swing the radiator out of the way.

- Loosen three bolts (1)
- Swing the radiator out of the way without draining the coolant.
- See the engine instruction manual for changing filters.
- Refer to the filter position marked in the picture (2)
- Reassemble the radiator.



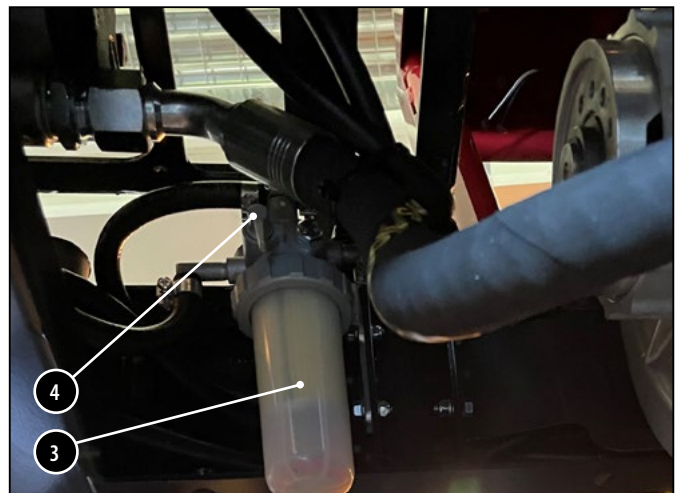
Fuel filter

To gain access to the fuel filter, disassemble the machine's undercover as previously explained.

The fuel filter should be replaced from beneath the machine. See (3).

Close the fuel cock before changing the filter (4).

Place a suitable container underneath to avoid fuel spillage.



3.8 ADJUSTMENT

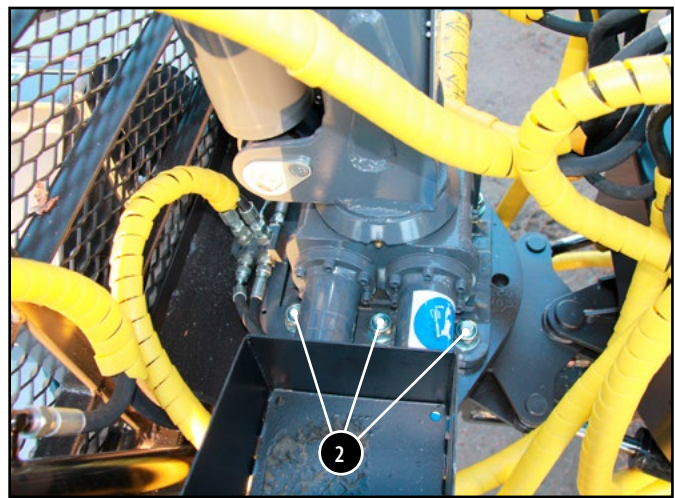
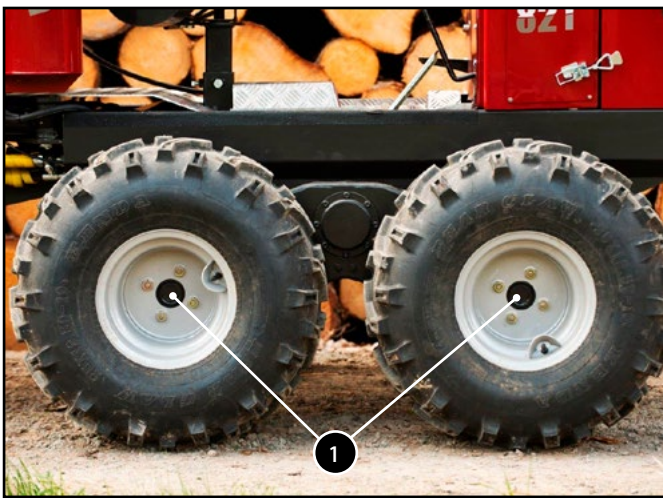
Machine readjustment



WARNING! After the initial refuelling, all wheel nuts and crane bolts should be retightened.

Adjusting wheel nuts and crane bolts

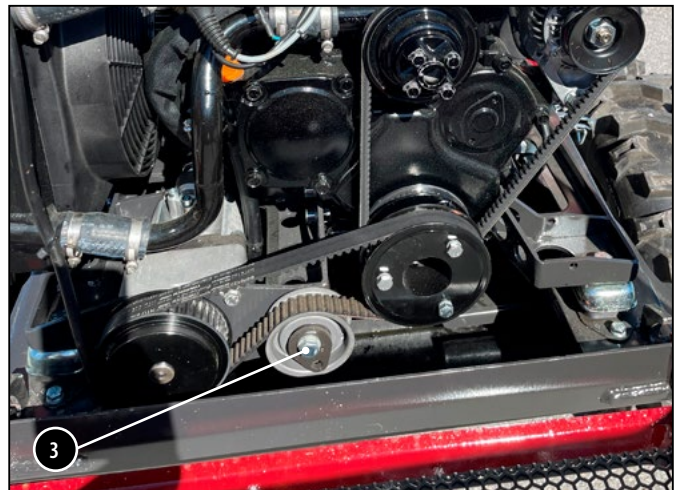
- Retighten all wheel nuts. 4 pcs per wheel × 8 wheels. See (1).
- Retighten all bolts in the crane base, 6 or 9 bolts. See (2).



Hydraulic pump drive belt

Check the belt tension for every 200 hours of operation and adjust if necessary.

- Check the belt tension by applying pressure to the middle of the belt. The belt should deflect only slightly.
When properly tensioned, it should be possible to twist the belt 90 degrees by hand in the middle. An excessively tensioned belt will result in undue wear.
- If the belt needs to be tensioned, loosen the indicated screw (3) one full turn and adjust using the eccentric washer.
- Pull gently



3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 850/850 H

Tilting the cab

- Loosen the lower screw (1) slightly and remove the two upper screws (2) on the left and right sides in order to tilt the protective cover back (not on 850 H).
- Loosen 2 × M24 screws on the front and rear on the right side. Let them stay in place (3).
- Loosen and remove 2 × M8 screws on the front section and on the rear section on the left side (4).
- Loosen the cotter on the right side (5).
- Screw anti-clockwise with a ratchet spanner and 24 mm socket (6). The support on the right side (7) can now be mounted on the corresponding attachment point on the cabin (8).
- Secure the strut with the locking cotter (9).
- Tilt the cab by turning anti-clockwise with the ratchet spanner (6). When the cabin is raised 10 cm, loosen the M24 screw and pull

out the axle (10) and remove the bracket (11). NOTE: Applies to the front and rear on the left-hand side of the cabin.

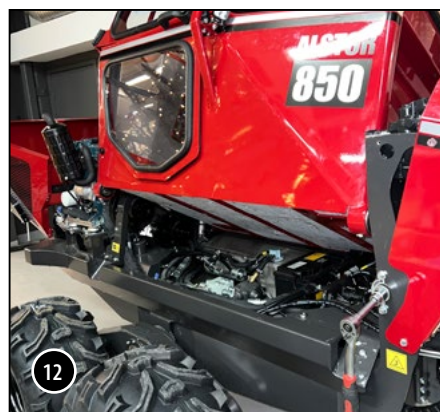
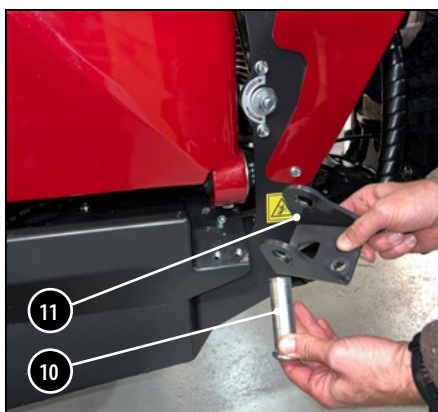
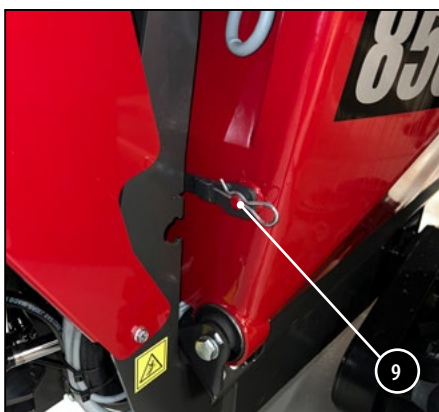
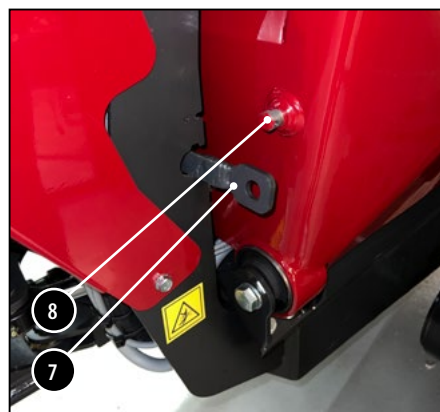
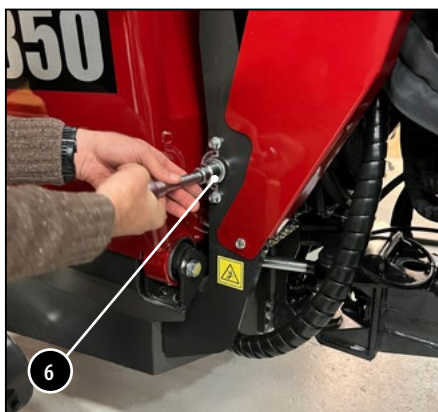
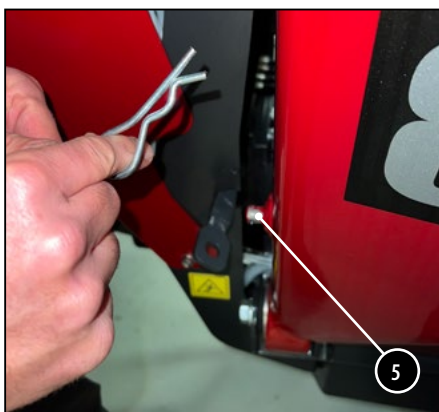
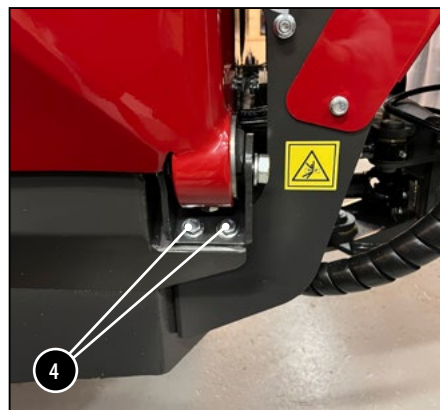
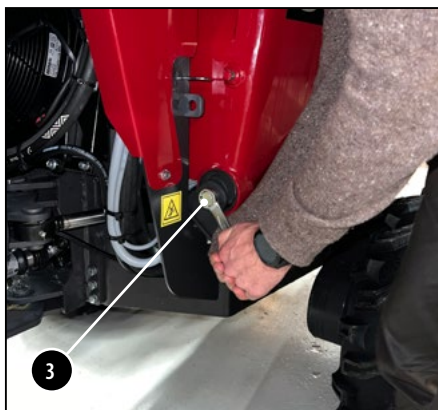
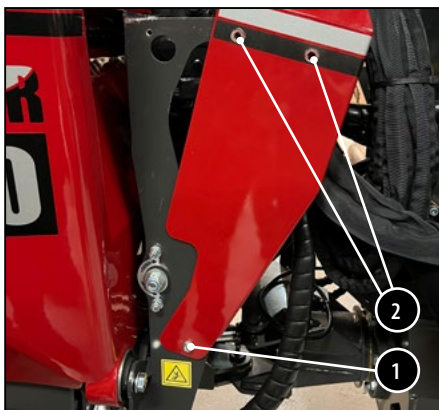
- Slightly tilt the cab further by turning anti-clockwise using the ratchet spanner (6). NOTE: Max. 40 degrees, see (12).

Tilt the cab back.

- Turn the ratchet spanner clockwise until the cabin is down (12).
- Reinsert the axle and bracket (10, 11).
- Screw the front and back screws back (4).
- Remove the strut from the attachment point and put the cotter back (9).
- Screw back the M24 screws on the front and rear (3).
- Refit the protective cover.



WARNING! Exercise great care. There is a risk of crushing. Secure the cab against tipping forwards or backwards.



3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 850/850 H

Always take used oils/waste to the local waste collection facility for recycling.



WARNING! Always wear personal protective equipment when handling oils. Oils can be corrosive to the skin. Oils in a warm machine can be extremely hot. Risk of injuries from burns.

Remove and install the undercover.

- Remove by loosening 4×2 screws (1) on the left and right sides.
- Reinstall by replacing all 8 screws.



Transfer box oil

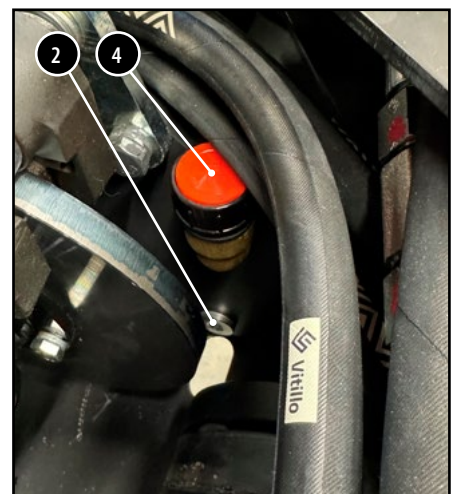
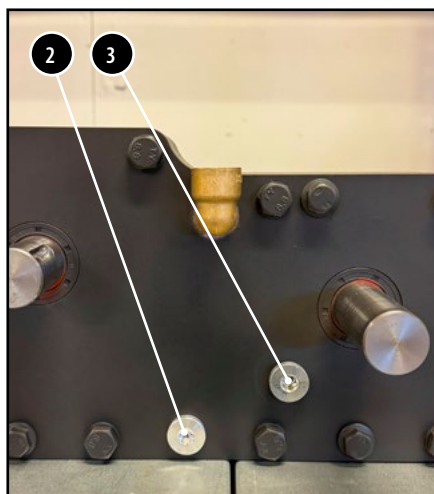
Place a suitable vessel for oil drainage under the machine, and open the bottom plug (2) and drain the oil. Screw the bottom plug back in.

Tilt the cabin. See the instructions on page 49.

Open the oil filler plug (4) and, if necessary, also the level plug (3).

Fill up with 0.4 L of new oil.

Tighten the oil filler plug and the level plug. Tilt the cab back.



Engine oil

Remove the undercover according to the instructions.

Unscrew the drain plug (6).

Drain the engine oil by opening the cock (5).

Refer to the engine instruction manual for filter replacement and filling of oil.

When replacing the engine oil, the filter should always be replaced. The engine oil quality is important for both engine power and engine service life.

Always use the recommended oil grade and oil filters.

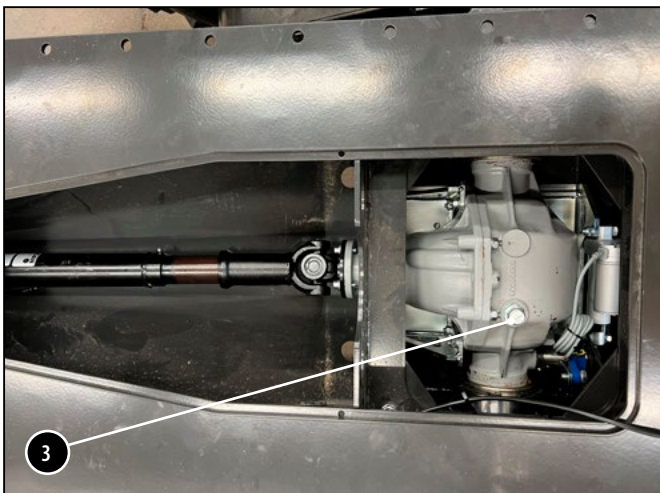
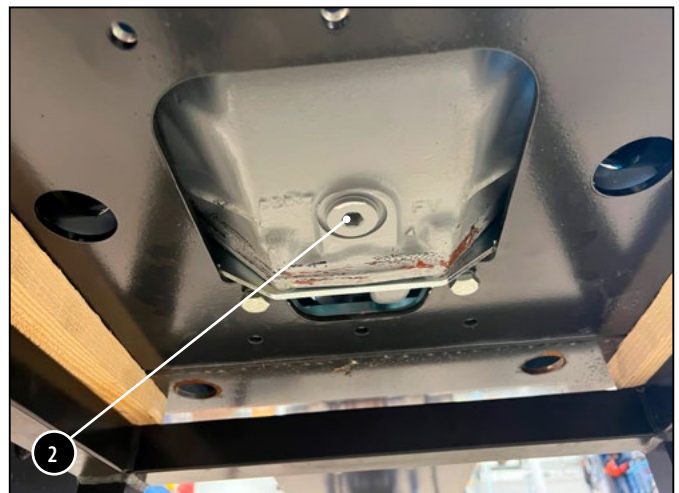
Check, replenish or replace the oil regularly at the recommended intervals. See the table on page 42.



3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 850/850 H

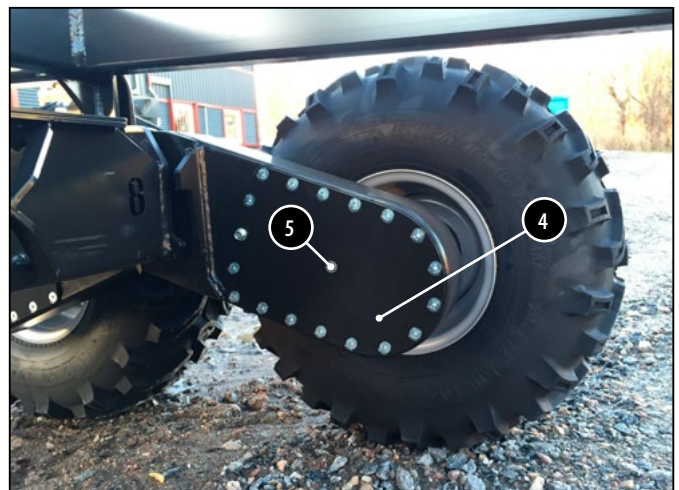
Replacement of the differential oil at the rear and front

- Place a suitable vessel for oil drainage underneath, open the bottom plug (2) and drain the oil. If the bottom plug does not come out, you may need to dismount and remove the protective cover (1). NOTE: Located on both the front and rear section. See picture.
- Screw the drain plugs back and put the protective cover back in place.
- Remove the inspection cover/tilt the cab. See the instructions on page 49. Open the oil filler plug. (3) See the marking in the picture. Fill with new oil at the front and rear. See the table on page 42. Replace the oil filler plugs at the front and rear and refit the inspection cover/tilt the cab.



Bogie box oil

- Place an oil collection vessel under the inspection cover (4) on the inside.
- Undo the inspection cover on the inside by removing all screws. (4)
Allow the oil to be drained and, if necessary, suction out the remaining oil using oil suction equipment.
- Clean the surfaces of the inspection covers and apply new silicone. Replace the inspection cover using all the screws.
- Once the oil is drained, loosen the oil plug (5) and fill with 1 litre of oil at each wheel, i.e. a total of 2 litres in each bogie box.



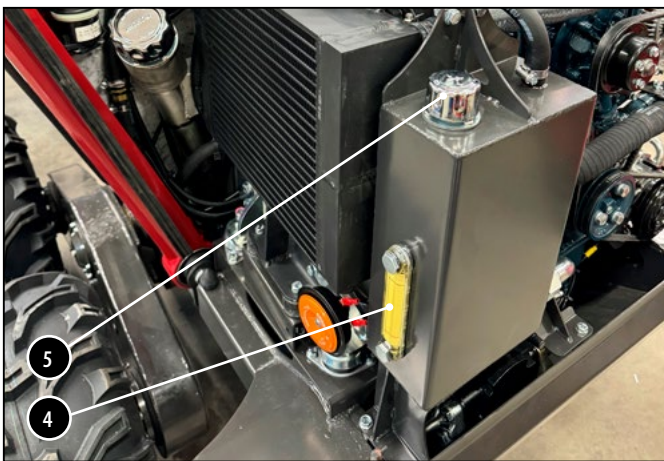
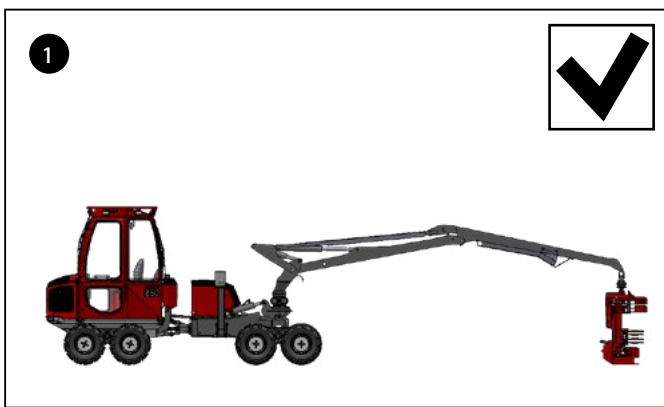
3.7 INSTRUCTIONS FOR OIL/FILTER REPLACEMENT, 850/850 H

Hydraulic oil control/change

NOTE: Always unload the crane before inspection and replacement of the oil. Park the crane as illustrated in the unloaded position.

DO NOT place the crane in the raised position.

- When replacing the hydraulic oil, the hydraulic filter should also be replaced; see below.
- Park the crane in an unloaded position according to figure 1.
- Loosen the undercover. NOTE: Keep a vessel of at least 50 litres underneath and open the bottom plug (2) located on the bottom of the tank to drain the oil.
- Once the oil is drained, reinstall the bottom plug (2). Always change 2 × hydraulic filters (3) once the oil has been drained, and refill with recommended oil (see the table on page 42) to the lower portion of the sight glass, see (4).
- Replace the oil filler plug (5).
- Allow the machine to run warm for at least 5 minutes, and check and adjust so that the oil level is centred in the sight glass. Reassemble the undercover.



Hydraulic oil filter

The machine has two hydraulic oil filters (3).

- Loosen the undercover under the front chassis.
- Unscrew the cover screws anti-clockwise and replace the filter inserts.
Lubricate the new filter sealing ring with hydraulic oil.
- Screw back the new filter.
- Reinstall the undercover under the front chassis.

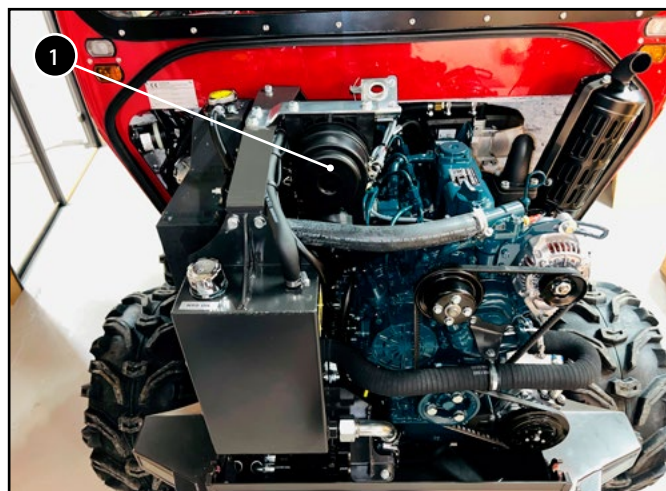
Air filter

Change the air filter (1) in accordance with the interval in chapter 3.7 on page 42.

If the machine is exposed to excessive wear, inspect the air filter sooner and replace when necessary. Optionally, the air filter can be cleaned with compressed air between the oil replacement intervals.

Replacement/Cleaning

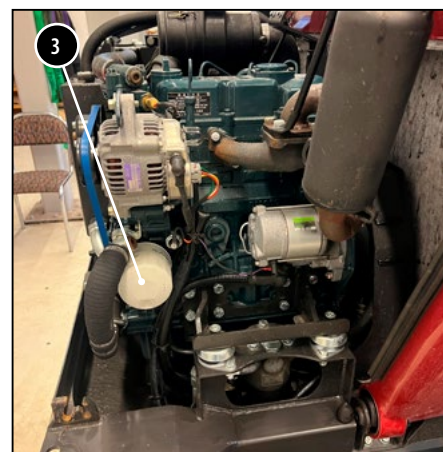
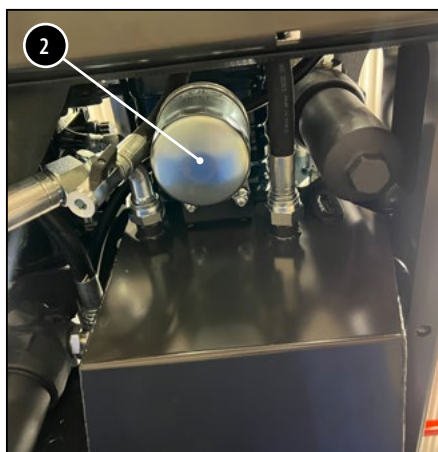
- Undo the clasps and remove the filter.
- Replace/clean the filter.
- Reassemble all parts.

**Fuel filter and engine oil filter**

Fuel filter (2)

Engine oil filter (3)

See the engine instruction manual for replacing filters.



WARNING! Never open the expansion vessel when the engine is warm or when the engine is running – risk of high pressure. The coolant in a warm machine can be extremely hot. Risk of injuries from burns.

Coolant

Coolant replacement must always be carried out by authorised personnel. See the engine instruction manual. Please note that different types of coolant are used in the standard and eco models. (See chapter 3.7 Oils and filters)

Open the cover of the expansion vessel (4). Fill to 3 cm from the top edge. Close the cover. Please note that at the normal operating temperature, if coolant is overfilled, the liquid can leak out from the drain hose (5). This is not hazardous for the machine. When replacing the coolant (only authorised personnel permitted to do this) on cab models, air bleeding of the heating package may be required. This is done via a venting hose in the roof. See the picture on page 19, item (13).



3.8 ADJUSTMENT, 850/850 H

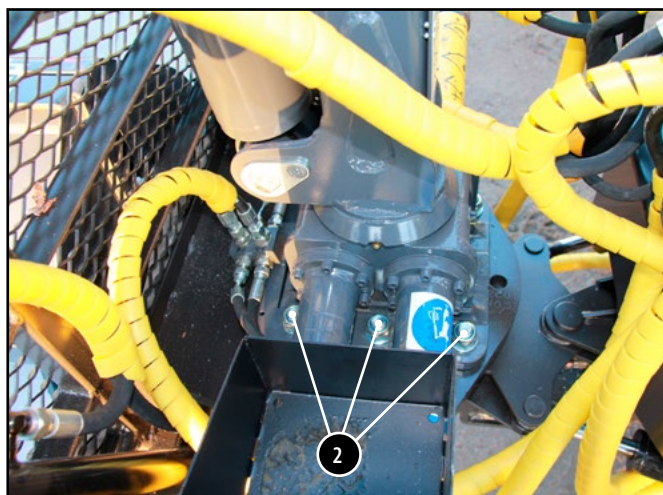
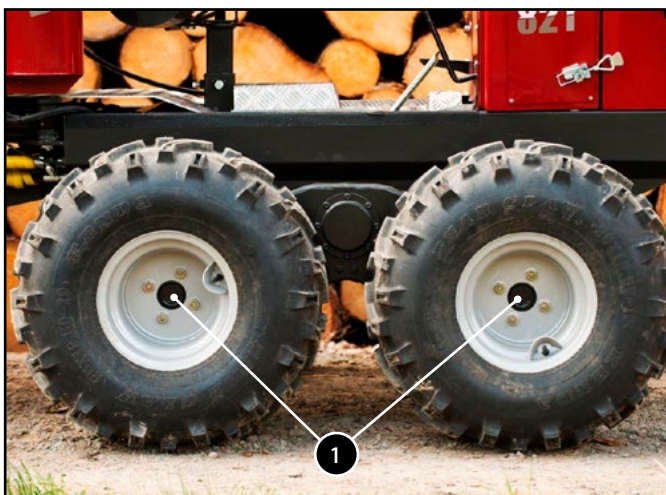
Machine readjustment



WARNING! After the initial refuelling of the machine, all wheel nuts and crane bolts should be retightened.

Adjusting wheel nuts and crane bolts

- Retighten all wheel nuts (1). 4 pcs per wheel × 8 wheels.
- Retighten all the bolts in the crane base (2), the number varies depending on the crane model.



Hydrostat pump/hydraulic pump drive belt

Replacement/adjustment

- Tilt the cab according to the previous instructions.
- Check the belt tension every 400 hours of operation and adjust if necessary.

Belt adjustment:

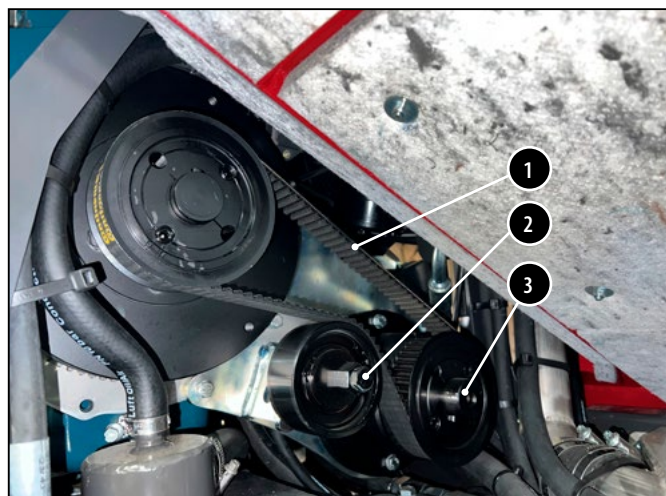
- Check the belt tension by applying pressure to the middle of the belt (1).
It should move a few centimetres, i.e. slightly springy. When properly tensioned, it should be possible to twist the belt 90 degrees by hand in the middle. An excessively tensioned belt will result in undue wear.
- If necessary, adjust by loosening the tensioning wheel (2) and pushing it up to the desired position. Tighten and check the tension. Alternatively, loosen the indicated screw one turn and adjust using the eccentric washer. Pull gently.

Belt replacement:

- Loosen the stop screw on the tensioning wheel (2) and lower it to slacken the belt.
- Loosen the belt and replace it with a new one.
- Tighten the belt by raising the tensioning wheel, and tighten the stop screw.
- Check and adjust the belt tension.

Dead-eye bearing

- Service of the dead-eye bearing (3) must be carried out by an authorised workshop every 1,200 operating hours.



4.1 TECHNICAL DATA – MODEL 822 AND 834
Diesel engine

| | |
|-----------------|-----------------------------------|
| Type | Yanmar 3-cylinder Diesel |
| Power | 17.8 kW/24 hp at 3,600 rpm |
| Torque | 52 Nm at 2,400 rpm |
| Cylinder volume | 993 cc |
| Diesel tank | 17.5 litres (822)/25 litres (834) |

Transmission

| | |
|-------------|---|
| Drive speed | 0-25 km/h forward, 0-7 km/h reverse |
| Type | Variator drive, 3-speed manual gearbox with reverse gear Permanent 8-wheel drive with transfer case, cardan joint and lockable front and rear differentials. Bogie boxes in high-tensile steel with chains in oil bath |

Brakes

| | |
|------|--|
| Type | Hydraulic brakes Mechanical parking brake |
|------|--|

Wheel equipment

| | |
|------|--|
| 8 WD | 25×12.5-10 8-ply Alternatively 27×13.5-12 8-ply |
|------|--|

Chassis

| | |
|-----------------|--------------------------|
| Type | Articulated centre joint |
| Steering angle | ±40° |
| Steering system | Orbitrol power steering |

Hydraulic system

| | |
|-----------------------|--------------------|
| Type | Gear pump |
| Pump capacity | Max. 40 litres/min |
| Operating pressure | 190 bar |
| Filtration efficiency | 25 µm |
| Tank volume | 15.5 litres |

Electrical system

| | |
|------------------|-------------------------|
| Type | 12 V |
| Battery capacity | 52 Ah (822)/72 Ah (834) |
| Generator | 55 A |

Cab

| | |
|------|---------------|
| Type | ISO-2867:2011 |
|------|---------------|

4.1 TECHNICAL DATA – MODEL 850, 851 AND 850 H
Diesel engine

| | |
|-----------------|------------------------------|
| Type | Kubota 3-cylinder Diesel |
| Power | 18.5 kW/24.8 hp at 2,600 rpm |
| Torque | 80 Nm at 1,700 rpm |
| Cylinder volume | 1261 cc |
| Diesel tank | 70 L (850H)/30 L (850) |

Transmission

| | |
|-------------|---|
| Drive speed | 850, 851: 0-16 km/h forward, 0-10 km/h reverse 850H: 0-10 km/h |
| Type | Stepless hydrostatic transmission with speed control Permanent 8-wheel drive with transfer case, cardan joint and lockable front and rear differentials. Bogie boxes in high-tensile steel with chains in oil bath |

Brakes

| | |
|------|---|
| Type | Hydrostatic 8-wheel brake and hydraulic automatic parking brake |
|------|---|

Wheel equipment

| | |
|------|--|
| 8 WD | 25×12.5-10 8-ply Alternatively 27×13.5-12 8-ply |
|------|--|

Chassis

| | |
|----------------|------------------------------------|
| Type | Articulated centre joint |
| Steering angle | ±40° |
| Steering | Orbitrol power steering (850 only) |

Hydraulic system

| | |
|-----------------------|--|
| Type | Gear pump Options: Power-regulated variable hydraulic pump |
| Pump capacity | Max. 35 litres/min (gear pump), max. 70 litres/min (variable pump) |
| Operating pressure | 190 bar |
| Filtration efficiency | 20 µm |
| Tank volume | 35 litres |

Electrical system

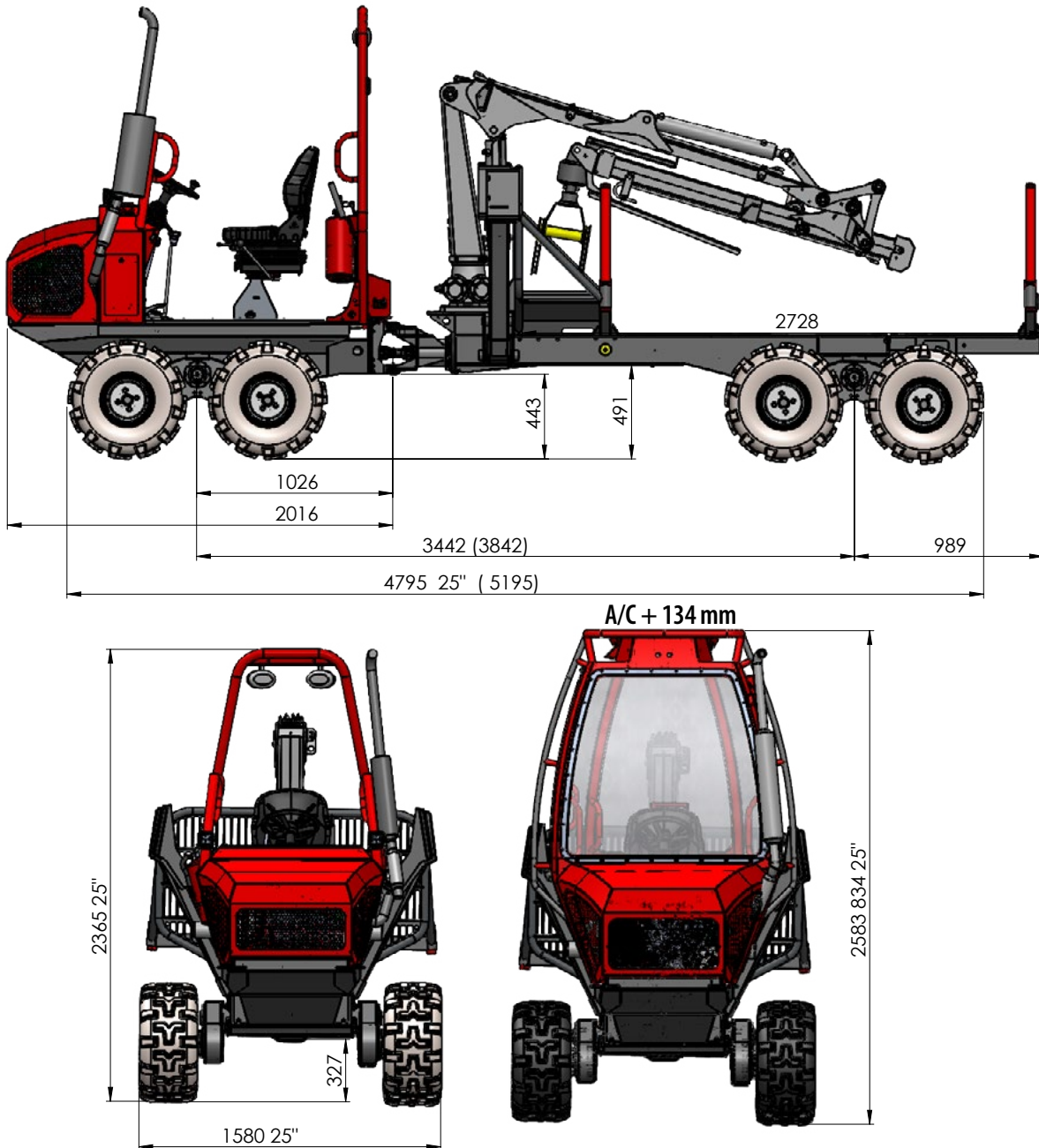
| | |
|------------------|-------|
| Type | 12 V |
| Battery capacity | 72 Ah |
| Generator | 60 A |

Cab

| | |
|------|---------------|
| Type | ISO-2867:2011 |
|------|---------------|

4.2 DIMENSIONS AND WEIGHT

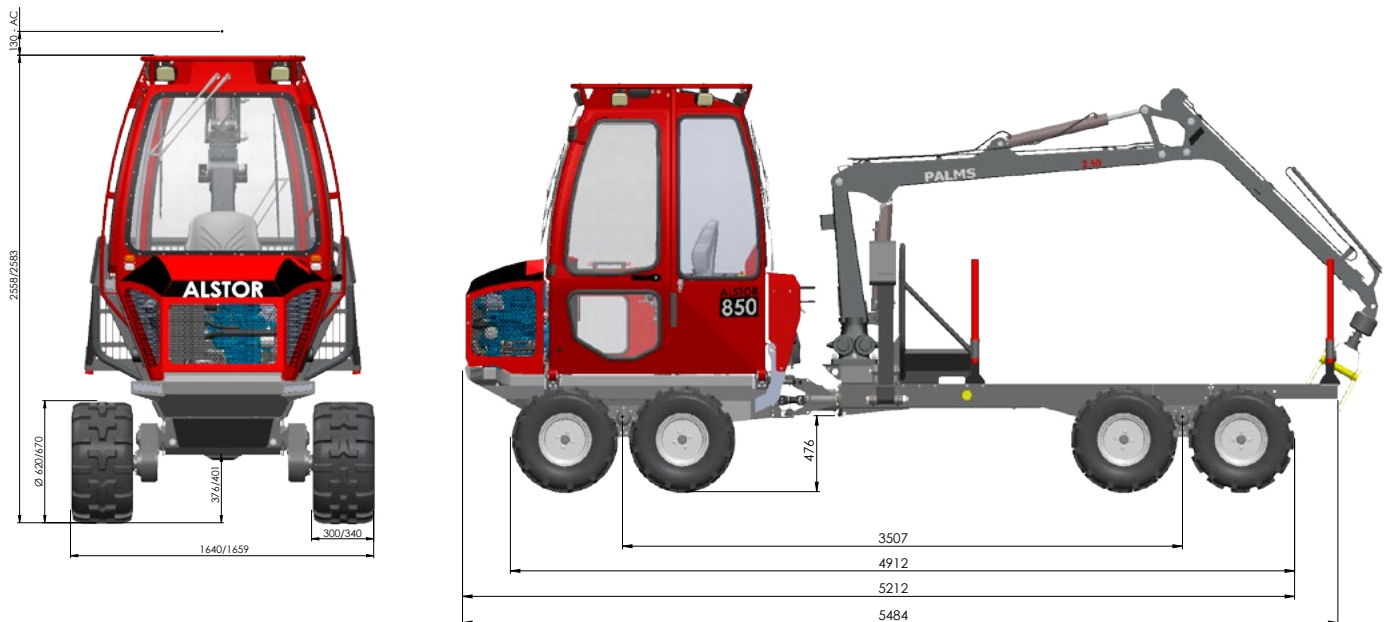
Models 822 and 834



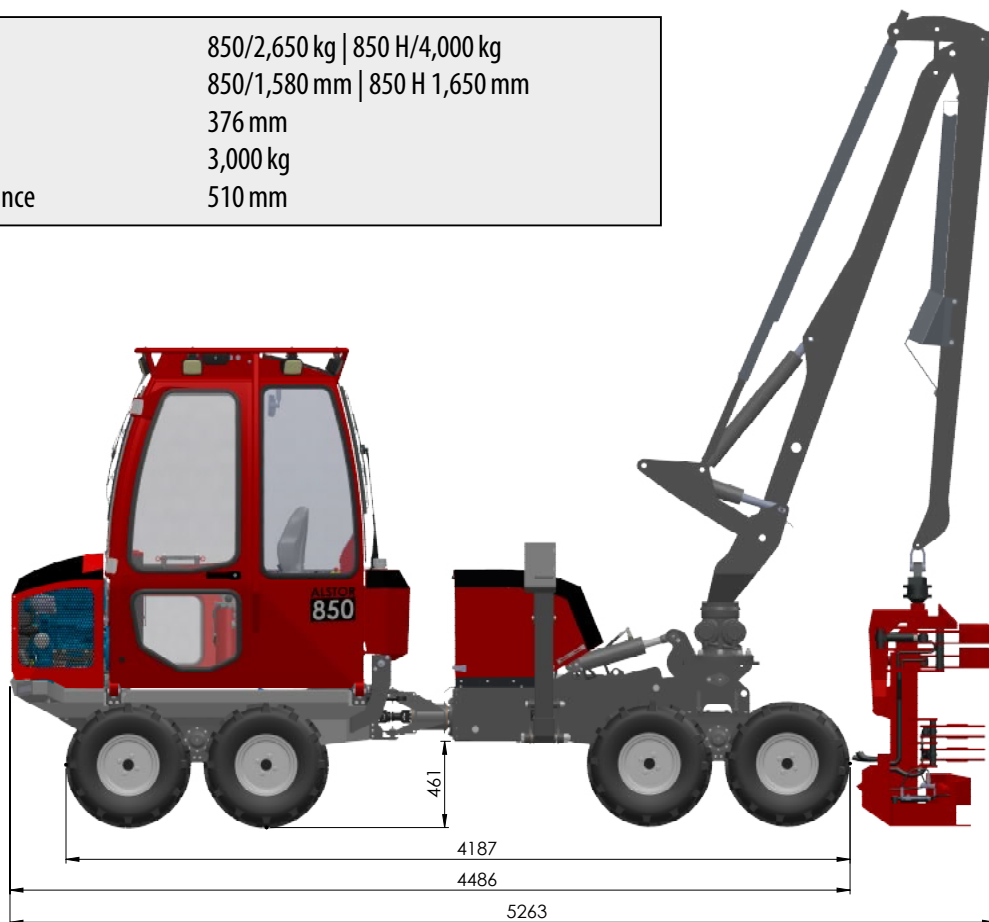
| | |
|-----------------------|-----------------------------|
| Kerb weight | 822/1,900 kg 834/2,300 kg |
| Width | 1,580 mm |
| Ground clearance | 327 mm |
| Load capacity | 3,000 kg |
| Obstruction clearance | 510 mm |

4.2 DIMENSIONS AND WEIGHT

Models 850 and 850 H



| | |
|-----------------------|-------------------------------|
| Kerb weight | 850/2,650 kg 850 H/4,000 kg |
| Width | 850/1,580 mm 850 H 1,650 mm |
| Ground clearance | 376 mm |
| Load capacity | 3,000 kg |
| Obstruction clearance | 510 mm |



EC – Declaration of Conformity with EC Machinery Directive 2006/42/EC**Manufacturer:****ALSTOR AB**

Åkarevägen 4
SE-455 97 Dingle
Sweden

Tel.: +46 (0) 524-407 45
info@alstor.se
www.alstor.se

Hereby declares that:

Machine type/Product: **Forest machine/Forwarder Alstor 8x8**
Series-Drawing/Model-Type: (0929) P001 -

Complies with all the applicable provisions of the directives:

2006/42/EC Machine Directive
2014/30/EU EMC Directive

In support of this declaration the following standards have been applied:

EN ISO 12100:2010
EN ISO 11850:2011/A1:2016
EN ISO 60204-1:2006



Kristian Laurell
CEO and authorised to compile the technical documentation

ALSTOR **8x8**

| | | | |
|-------------------------|-------------------------|------------------------|---------------|
| Manufacturer: Alstor AB | Åkarevägen 4 | SE-455 97 Dingle | Sweden |
| Tel.: +46,524-407 45 | Mobile: +46,705-861,805 | E-mail: info@alstor.se | www.alstor.se |