OPERATION MANUAL

YT182 – YT222

YARD TRACTOR

DOCUMENT > TD2303-08EN
EDITION > 01-2019

TERBERG BENSCHOP
Manufacturer of special vehicles

Introduction

This manual contains important information about the correct and safe use and maintenance of the Terberg Yard tractor. The manual MUST be read thoroughly before using the tractor. The instructions, warnings and messages on the stickers, both on the tractor and in the manual, must be observed at all times. The tractor will meet all your requirements if the advice and instructions provided in this manual are observed.

This manual is not intended to be a comprehensive technical guide, nor is it intended to make the reader an all-round motor mechanic. Its purpose is to inform you how to operate and service your tractor so problems can be avoided.
The better you know your tractor, the better the service you can expect from it.

Because of the wide range of engines and transmissions available, a separate engine and transmission booklet has been prepared, and has been provided at the back of the driver instructions. Please read this carefully.

Terberg shall not be liable for any external equipment that does not form part of the supply contract.

All information markings and symbols on the tractor conform to general operator standards to the best of our knowledge. However, customers should review this document based on their own working requirements and standards.

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This operation manual is originally written in English. This English version is therefore an original manual.

Vehicle information

The following information can be found on the tractor. Fill in all data before using the tractor for the first time.

First date of use: .....

Tractor model:.....

Chassis number:.....

Year of manufacture: .....

Engine: .....

Transmission: .....

Transfer case:.....

Front axle:.....

Rear axle: .....

Fifth wheel type:.....

Tyres:.....

Abbreviations and phrases

AdBlue	Diesel exhaust fluid. Also known as DEF or Urea.
DIM	Driver information Module
ETRTO	European Tyre and Rim Trading Organisation.
Regeneration	Exhaust cleaning process to burn exhaust particulates using a high temperature. This process can start automatically or manually.
SCR	Selective Catalytic Reduction

Contents

1 Safety

1.1 General

Throughout this manual you will find warnings and cautions such as pictured below.

DANGER

Indicates a potentially imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Throughout this manual you will see notes. Notes will be used to show special procedures or point out important facts. Notes will also designate important information regarding this manual and its use.

1.2 Instructions for safe use

To ensure safe operation of the tractor, read this manual carefully before driving the machine. The tractors carry a number of stickers warning users of possible hazards. The instructions, warnings and messages on the stickers and in the manual must be observed at all times.

Drivers must inspect the tractor visually before commencing work, and check the instrument panel immediately after starting and regularly while driving. Instruments must display their normal values. A number of plates showing information about maximum permissible axle and trailer loads are located inside the cab.

Every driver using this tractor must be suitably trained and qualified in the use of the equipment and must be fully acquainted with local site regulations and procedures. Depending on the equipment of the vehicle and the nature of the work, the training should cover all equipment and all tasks that have to be carried out by the driver.

All drivers must be suitably equipped with full safety clothing and footwear.
The minimum clothing requirements depend on local site regulations.
Terberg Benschop recommends wearing at least safety clothing that enhances driver visibility and safety shoes with steel toe caps and soles.

1.2.1 Permissible loads

Recommendations for maximum permissible axle and trailer loads are located inside the cab.

The maximum permissible axle loads on level ground are displayed on the data plate shown.

AXLE LOAD: Maximum permissible axle load.

TURNTABLE LOAD: Maximum permissible load on the fifth wheel.

Some models are also approved for use on public roads. In that case the maximum legal axle loads are also shown in the first column next to G.V.W., G.C.W. etc.

G.V.W.: (Gross Vehicle Weight)
Total weight of the tractor.

G.C.W.: (Gross Combination Weight)
Total weight of tractor and trailer.

1.3 Safety regulations & Warnings

(See also the "WARNING STICKERS" section)

NOTICE

Read this manual carefully before using the tractor and always follow the safety and maintenance instructions in it.

Before driving off:

- Never use a faulty tractor.
- Always apply the parking brake before leaving the cab.
- Keep doors and windows closed during use to minimise the noise level inside the cab.
- The air conditioning will only operate properly if all cab windows and doors are closed.
- Keep the cab floor clean to prevent slipping, tripping and falling.
- Use the sun visor to prevent blinding by sunlight.
- Ensure that a clear field of vision is maintained at all times.
- Wear the seat belt provided at all times during operation.
- Always connect the trailer's brake hoses and lighting cables before driving off. This also includes connections to a gooseneck if applicable.
- Check visually that the tyres on the tractor and trailer are inflated correctly.
- Check that the safety bolt in the rear cab support is tight before using the tractor.

While driving:

- Ensure that maximum permissible loads are not exceeded.
- Keep trailer height to a minimum, but high enough to provide sufficient clearance under the trailer and the load.
- Ensure there is adequate ventilation, especially while working in enclosed spaces.

While driving on ramps:

- Ensure that ramps offer sufficient traction before driving onto them.
- While driving on ramps, always keep the fifth wheel as low as feasible, select the correct gear, and be aware of restrictions imposed by the maximum permissible loads. Ramp speed should never exceed a fast walking pace. Drive steadily on ramps. Do not stop on ramps. If you have to stop, move off again slowly and steadily.
- Parking the tractor with a loaded trailer is prohibited on ramps.

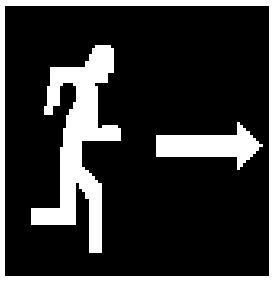
Other warnings:

- The tractor must not be used for carrying passengers, either in the cab or on the trailer, other than on the passenger seat (optional).
- Always use two points of contact when walking/working on the tractor to eliminate the risk of slipping or falling.
- In the event of steering pump failure, the tractor will remain steerable but the steering will be noticeably heavier.
- If the engine has to be kept running during maintenance, keep clear of all rotating parts.
- Keep clear of the fifth wheel lifting system at all times.
- Always close and secure the protection plates and (lift-) covers before driving.
- Lift covers should remain easily accessible.
- Do not place flammable materials near the exhaust system.

- Keep away from any hot components (e.g. the exhaust system).
- Do not lean out of the windows unless it is essential. If you have to, do so with great care because of passing vehicles and other moving or stationary objects.
- All leaks must be reported and fluids be disposed of in accordance with local environmental requirements.
- All oil-related products are flammable and must be kept away from hot components.
- Keep body parts and loose articles away from operating controls.
- Be aware that a high-pressure water jet can pass through rubber seals. Do not aim the high-pressure water jet at the cover sealing the electronics.
- The parking brake must not be applied while the tractor is moving. However, the parking brake may be used as an emergency brake if the vehicle's service brakes fail.
- The terminal tractor must maintained by trained personnel in accordance with the manufacturer's instructions

1.3.1 Emergency procedures

Emergency exit from the cab:
In case of emergency you must be prepared to exit the tractor in the safest possible manner. Drivers must be familiar with the methods of exiting their particular cab.
Doors must never be locked during operation. It must be possible to enter or exit the cab quickly in case of emergency.



The possible exit points are:

1. Via the side door.
2. Via the side window.
3. Via the roof hatch (optional).

Emergency steering
In the event of a loss of engine power, stop the tractor unit as soon as is safely practical. Loss of power will result in the steering becoming heavier, but the steering function will remain unaffected, however.

Tyre failure
In the event of tyre failure, the driver should brace himself with both hands on the steering wheel and bring the tractor to a rapid halt.

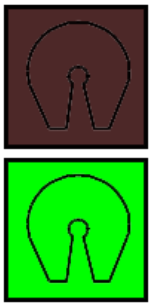
Fire
In the event of smoke or fire the tractor must be brought to an immediate halt and the engine and ignition turned off.
Exit the tractor as quickly as possible.
If safe to do so, isolate the main switch.
All drivers must be familiar with procedures in the event of fire, in accordance with site requirements.

1.4 Operation of a Terberg tractor–trailer combination

⚠ CAUTION

It's very important that the king pin is firmly in place in the fifth wheel lock. This needs to be checked with a primary pull and push test (drive up and brake), to physically ensure the trailer is correctly coupled to the tractor!

When a trailer is coupled to a Terberg tractor ensure that the king pin is firmly in place in the fifth wheel lock.



It's very important that a primary pull and push test (drive up and brake) is done, to physically ensure the trailer is correctly coupled to the tractor.

If fitted, the green fifth wheel indicator light in the cabin, can be used as a secondary indicator that a coupling was successful.
However, the light should never be used as a single indicator only, but is complementary to the pull and push test.

During operation of the Terberg tractor-trailer combination on a flat, horizontal surface, the trailer should be kept in a horizontal position.
This to ensure that load distribution is optimal, and stresses in the combination are kept to a minimum.

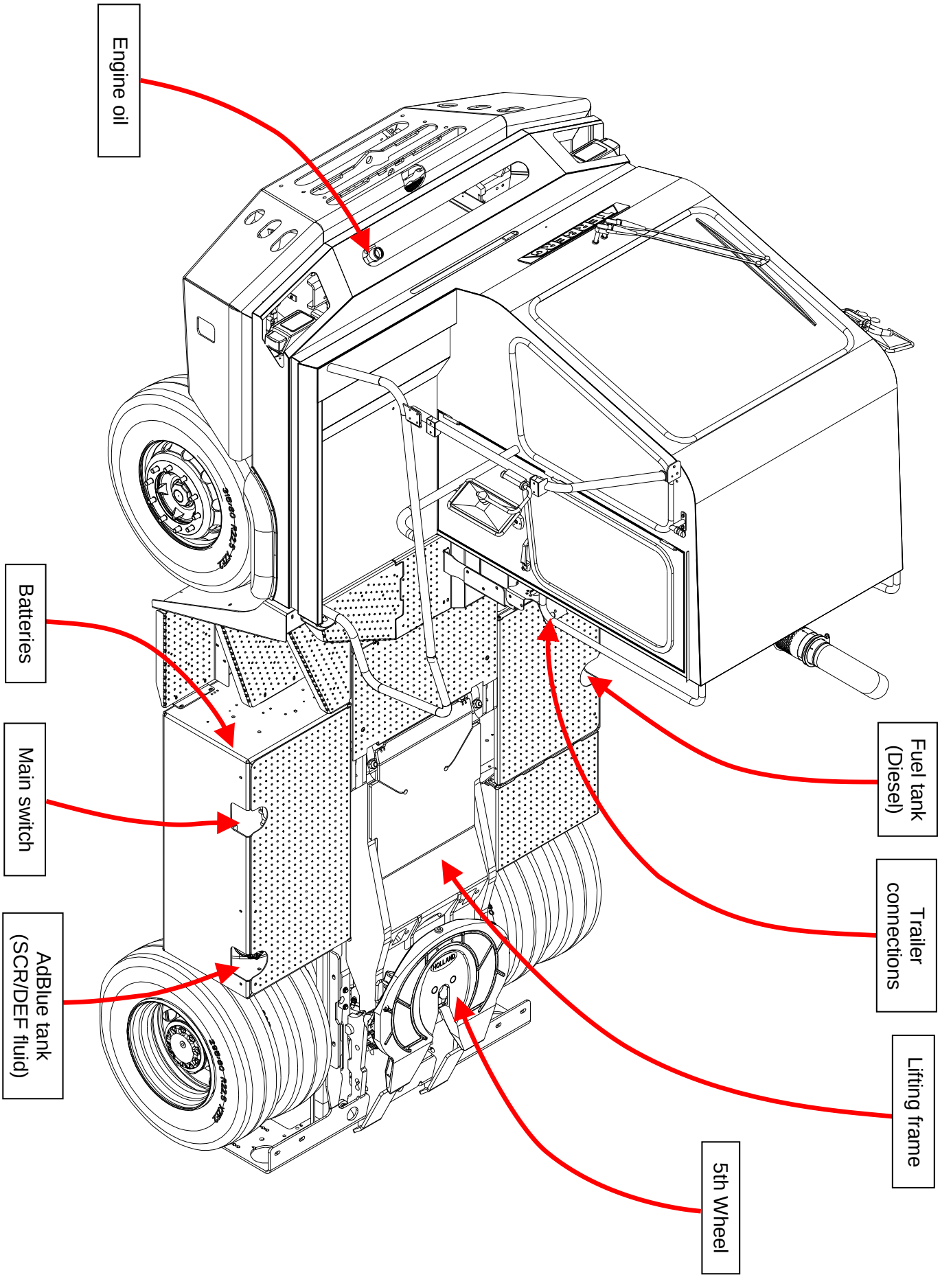
If the tractor is equipped with a hydraulic elevating fifth wheel, the lifting frame must be raised sufficiently to ensure the trailer is at least parallel (as shown in picture).

When driving on uneven ground, obstacles, ramps etc. the trailer can be raised to keep it sufficiently clear from the ground. Always keep it lowest possible (parallel to the surface it drives on), which ensures best stability.

A horizontal trailer makes loading/unloading also easier. During loading/unloading of the trailer, it is for the Terberg tractor not necessary to lower the trailer legs to the ground. It is a local operational decision wherever this is required or not.

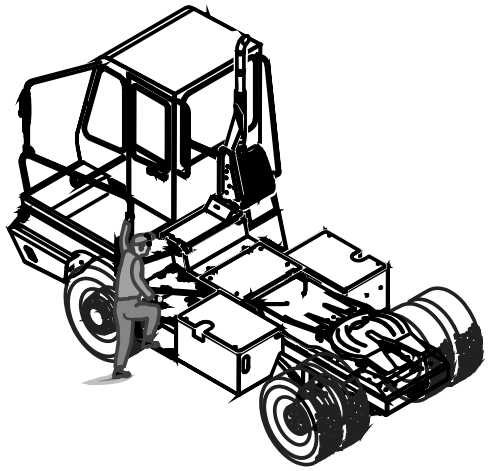
If trailer brakes are available, they **MUST** be connected. This ensures an optimum braking with shortest brake distances and avoids possible jack-knifing.

2 General lay-out of the tractor



3 Cabin

3.1 Entering and leaving the tractor



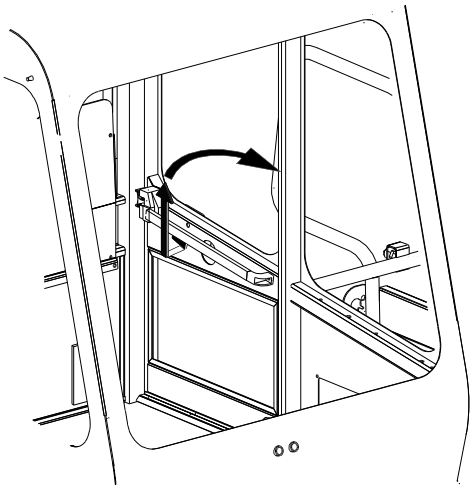
To ensure maximum safety, always take extra care when entering the tractor. Use the handrails provided and always ensure that at least two points of contact are maintained. Only the steps and handrails provided should be used for access.

WARNING

Take extra care when entering the tractor to avoid personal injury.

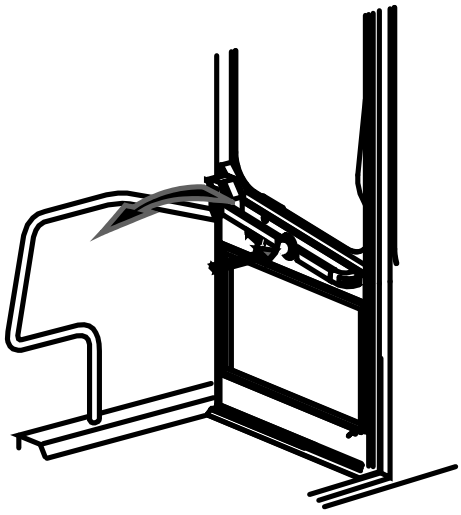
Be careful at all times as the steps and decking might be slippery.

3.1.1 Opening and closing the door



Terberg recommends that the door be closed at all times to ensure safe operation.

To open:
Push in the door handle and open the door using the door handle and handrails provided until it locks in place.



To close:
Push in the door safety lock and close the door using the handrails provided until it locks in place.

WARNING

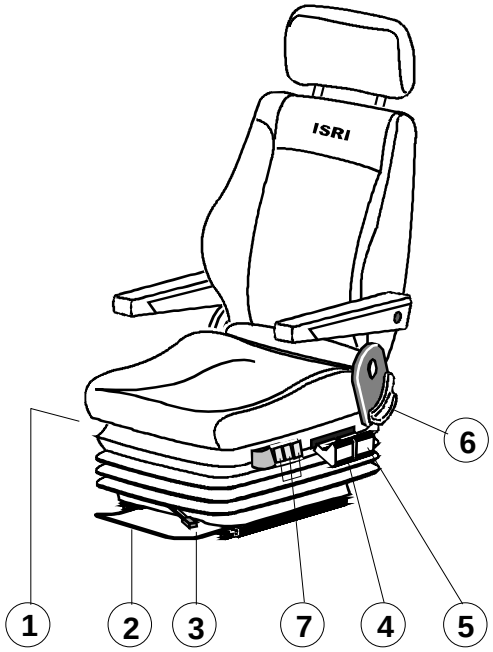
Keep all body parts clear of the door.

3.2 Driver's seat

Correct adjustment of the seat is important for operation, safety and comfort. The seat should always be adjusted to suit the driver's personal requirements and the seat belt should always be used. Adjust the seat to the correct position before driving.

3.2.1 ISRI Seat 6000/6500

Seat controls:



1 - Height adjustment
Pull the lever: the seat rises.
Push the lever: the seat lowers.
Release the lever when the desired height has been achieved.

2 - Horizontal adjustment
Pull the lever and move the seat forwards/back.
Release the lever to lock the seat.

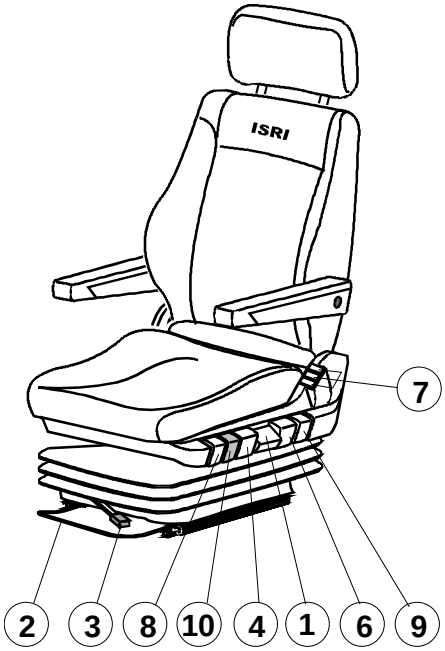
3 - Horizontal suspension
Push the lever to the right to release the horizontal suspension, and to the left to lock it.

4 - Seat cushion front angle adjustment
Pull the lever and adjust the angle by loading/unloading the front and rear seat cushion area.

5 - Seat cushion rear angle adjustment
Pull the lever and adjust the angle by loading/unloading the rear and front seat cushion area.

6 - Backrest adjustment
Pull the lever and adjust the backrest position while a load is applied to the backrest.

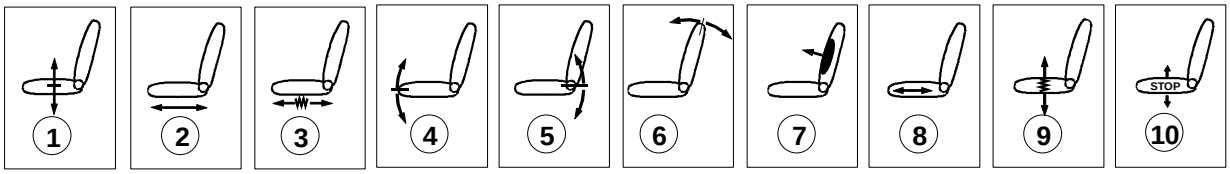
7 - Lumbar adjustment
Air adjustment:
Press the button to vent and bleed the corresponding air chamber to give the optimum backrest contour.



8 - Seat cushion adjustment
Pull the lever and move the seat cushion forwards/back.

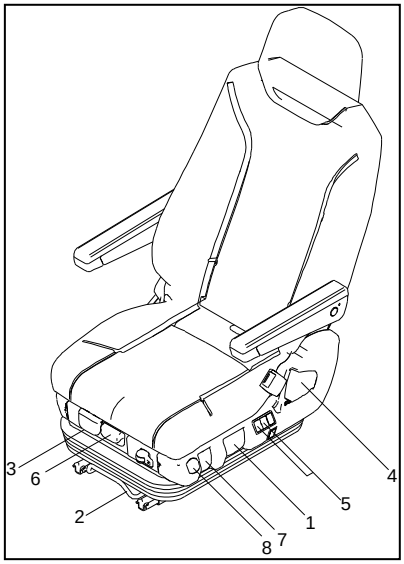
9 - Damper adjustment
The damper can be adjusted to change the seat's suspension characteristics to suit the road surface and the driver.
Lever up: maximum damping.
Lever down: minimum damping.

10 - Lowering
Pull the lever: the seat lowers and stays down.
Push the lever: the seat rises to its previous position.



3.2.2 ISRI SEAT 6860

Seat controls:



1 - Height adjustment
Pull the lever to raise the seat.
Push the lever to lower the seat.

2 - Horizontal adjustment
Pull the lever and move the seat backwards or forwards.
Release the lever to lock the horizontal position.

3 - Seat tilt adjustment
Pull the lever and tilt the seat by putting pressure on the cushion or the backrest
Release the lever to lock the tilt angle.

4 - Backrest adjustment
Pull the lever and adjust the angle of the backrest.
Maintain pressure on the backrest to prevent sudden movement.
Release the lever to lock the angle of the backrest.

5 - Lumbar adjustment (upper/lower)
Use the buttons to pressurise or bleed the air chambers to provide optimal back comfort.

6 - Seat cushion adjustment
Pull the lever and move the seat cushion backwards or forwards.
Release the lever to lock the horizontal position.

7 - Damper adjustment
The seat damping force can be adjusted to provide appropriate comfort for different road conditions.
Pull the lever to increase the damping force.
Push the lever to decrease the damping.

8 - Activate suspension
It can be useful to depressurise the seat suspension without losing the preferred height setting.
Push the lever to lower the seat permanently
Pull the lever to pressurise/re-pressurise the seat suspension

X - Seat heating (optional)
When installed, this switch can be used to activate/deactivate the seat heating.
0 = seat heating deactivated
1 = seat heating activated

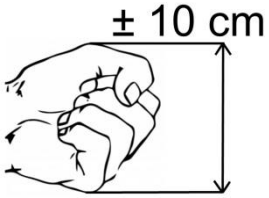
WARNING

Do not adjust the seat while the vehicle is moving, only when the tractor is stationary and the parking brake has been applied. Always wear the seat belt provided.

3.2.3 Seat adjustment

(1) Seat height adjustment: The upper legs must be almost horizontal with the feet flat on the floor (the knees a little higher than the hips). Your upper legs must be completely supported by the seat. The distance between the floor and the lower part of the upper legs for a person of an average height of 1.78 m should be about 44 cm.

(2) Seat length adjustment: The seat length should be adjusted in such way that there is a gap of 10 cm (about the thickness of a fist) between the seat and the back of the knees.



(3) Seat distance adjustment: Press the throttle pedal gently and then adjust the seat distance to a preferred/desired position. **Note:** The legs must not be fully stretched when the accelerator or brake pedals are fully depressed.

(4) Adjusting the backrest/steering wheel: Press your shoulder against the backrest and hold your arm fully stretched on the steering wheel at 12 o'clock'. Adjust the backrest to the preferred positions and maintain good visibility. When this adjustment is finished your shoulder must still be against the backrest and your arm must be fully stretched at 12 o'clock' on the steering wheel. The backrest angle must be between 95 and 115 degrees. If this is not the case, repeat step 3 so that you get an angle of between 95 and 115 degrees.

Steering wheel adjustment (optional)
Adjusting the steering wheel is done with the lever on the left side of the steering column.
Pull the lever up to adjust the height of the steering wheel.
Push the lever down to adjust the angle of the steering wheel.

(5) Adjusting the lumbar cushions (ISRI): Use the 2 buttons highlighted here to pump the 2 lumbar support cushions until your lower back is gently supported.

(6) Adjusting the shock absorber (ISRI): Use the button highlighted here to adjust the seat damping force to provide appropriate comfort for different road conditions. Pull the lever to increase the damping force and push it to decrease the damping.

3.3 Passenger seat (optional)

A passenger seat can be installed in the cab.

Before using the passenger seat:

- Make sure the vehicle is at a complete standstill and apply the parking brake.

WARNING

Always wear the seat belt provided.

3.4 Seat belt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The driver's seat can be equipped with a two-point or a three-point seat belt (optional). The passenger seat (optional) is equipped with a two-point seat belt. The seat belt is a component which, together with the seat and cab structure, forms a safety system that has been developed to provide the best protection. Always wear the seat belt while driving.

Fit the seat belt as follows:
Pull the belt carefully over the shoulder and/or hips. Check that it is not tangled or twisted. Secure it by sliding the tongue into the buckle. A click indicates that the belt is locked. Check the lock by giving it a short tug. Tighten the belt somewhat by allowing it to retract until the belt is aligned along the drivers' body.
For maximum protection, avoid wearing the seat belt over voluminous clothing.


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To release the seat belt, grasp the belt and press the red button on the buckle. Guide the belt with your hand and allow it to retract fully.

The belt will lock when:
- it is pulled out quickly
- the vehicle is decelerating
- the vehicle is cornering

The belt is intended for one person. It must not be drawn over any sharp edges.
Occasionally check the attachments and fittings as well as the condition of the belt itself.
Clean the belt with water. If detergent is absolutely necessary, use only a detergent that will not affect the belt material.

WARNING

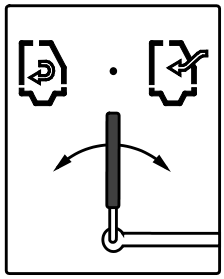
Always wear the seat belt while driving to ensure maximum protection. The seat belt should be replaced after a collision or an accident, even if it has no visible damage or noticeable defects. Do not modify, repair or dismantle the seat belt, the seat or the attachments.

3.5 Cab heater – Standard

3.5.1 Heater blower control

Air flow is adjusted by turning the blower switch, which is infinitely variable. Turning it clockwise will increase the blower speed, and turning it anti-clockwise reduces the blower speed.
With the switch in the maximum anti-clockwise position (noticeable click) the blower is switched off.

3.5.2 Circulation control

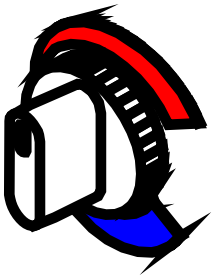


This knop controls the source of the air flow, and has two positions:

= Fresh air. Air is taken from outside the cab. This is the most common position and should be used in humid and rainy weather.

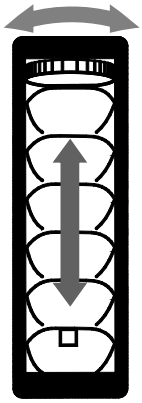
= Recycled air. Air is taken from inside the cab and is recirculated. This position should be used to provide rapid heating or cooling of the cab and to prevent unwanted dust entering the cab. Using this position for longer periods of time, is not recommended.

3.5.3 Heating control



This knob is the temperature control. Turning it anti-clockwise (towards **blue**) reduces the temperature, and turning it clockwise (towards **red**) increases the temperature.
Avoid high temperatures in the cab as this can lead to loss of concentration.

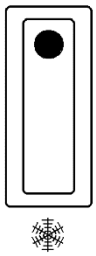
3.5.4 Cab heater vents



The direction of the air flow can be controlled by the air outlets to the left and right of the heater controls. The air outlets can be turned and the flaps can be adjusted to different angles.
By closing the outlets more air flow is directed to the defroster outlets, which are directed at the windows. This can be used to increase demisting or to get an indirect air flow.

3.5.5 Air conditioning (optional)

Press the switch located on the heater panel to turn the air conditioning on. The air conditioning operates only when the engine is running and the blower is switched on.



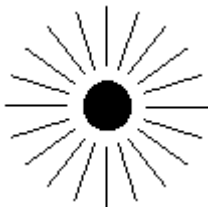
The air conditioning will switch off automatically in the event of a system failure. If the air conditioning does not operate correctly (low cooling capacity), this could be the result of a fault in the system.

For optimum use of the air conditioning:
Keep doors and windows closed at all times.

NOTICE

Make sure that staff is properly trained to do maintenance on the air conditioning system.

Hot climate



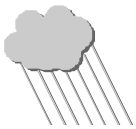
1. Turn on the air conditioning.
2. Turn the heating control to **blue**.
3. Turn the circulation control to the **recycle** position for the first 5 - 10 minutes to assure rapid cooling.
4. Turn the blower control to maximum speed.

When the desired cab temperature has been reached, increase the fresh air content by turning the air circulation control towards the **fresh** position. Adjust the heating control and the blower speed as required.

Moderate climate

1. Turn the air conditioning off and turn the heating control to **blue**.
2. Turn the circulation control to the **fresh** position.
3. Adjust the blower as required.

High humidity and demisting



Although the ambient temperature could be in the comfort zone, air humidity might reach unacceptable levels. The air conditioning system can also be used as a dehumidifier.

1. Turn the air conditioning on.
2. Turn the circulation control to the **fresh** position.
3. Turn the blower control to medium speed.
4. Adjust the heating control as required.

Cold climate

1. Turn the air conditioning off.
2. Turn the heating control to **red.**
3. Turn the circulation control to the **recycle** position for 5 - 10 minutes to ensure rapid heating.
4. Turn the blower control to maximum speed.

When the desired cab temperature has been reached, increase the fresh air content by turning the air circulation control towards the **fresh** position. Adjust the heating control and the blower speed as required.

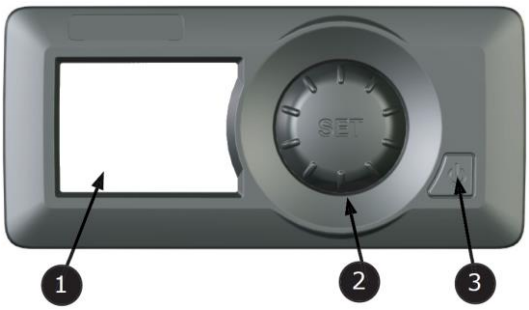
3.6 Cab heater – Electronic Climate Control (optional)

Controls

1. LCD Display: During normal operation, the desired temperature, blower speed, mode, fresh/recycle air and airflow direction are displayed.

2. SET Knob: During normal operation, the knob is used for selecting and changing various parameters.

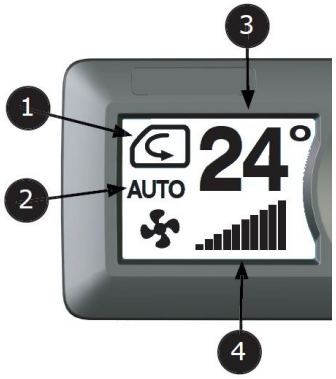
3. Power Button: Press the button to activate/deactivate the ECC module.



Main screen

When the module is off, the display backlight will be off and the temperature inside the cab will appear on the screen.

When the controller is turned on, the main screen will appear:
1. Air mix control
2. Mode
3. Desired temperature
4. Blower speed



A ⚠ symbol will be displayed if there is a fault in the system. If this symbol appears, refer to the service manual for further information.

Blower speed settings

Press the SET knob until the blower icon appears, then turn the knob clockwise to increase the blower speed and anticlockwise to decrease the blower speed.
The blower speed cannot be adjusted in defrost mode.

Climate control mode settings
Press the SET Knob until the climate control mode icon appears, then rotate the SET Button until the required control mode is displayed.

AUTO: The controller takes over and constantly analyses the temperature sensors to achieve and maintain the desired temperature.

Cool: The interior temperature is regulated by the A/C compressor. The heater valve will remain closed when cool mode is activated.

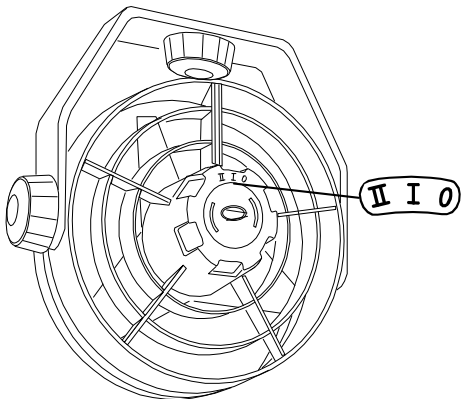
Heat: The interior temperature is regulated by the electronic heater valve. The A/C compressor will remain off when heat mode is activated.

Demist/defrost: When defrost mode is activated, the A/C compressor is turned on, the blower is at full speed and the heater valve is fully opened.

Air mix control
Press the SET knob until the air circulation mode icon appears, then turn the knob clockwise for re-circulated air ( ) or anticlockwise for fresh air ( ).

Display settings
To adjust settings, press the SET knob until the display settings screen appears and the setting that needs to be changed is flashing. Turn the knob to adjust the setting.

3.7 Air blower (optional)



Air flow is adjusted by turning the switch. This switch has three air flow positions, numbered 0 to 2.
0 = blower off
I = blower runs at lowest speed
II = blower runs at highest speed

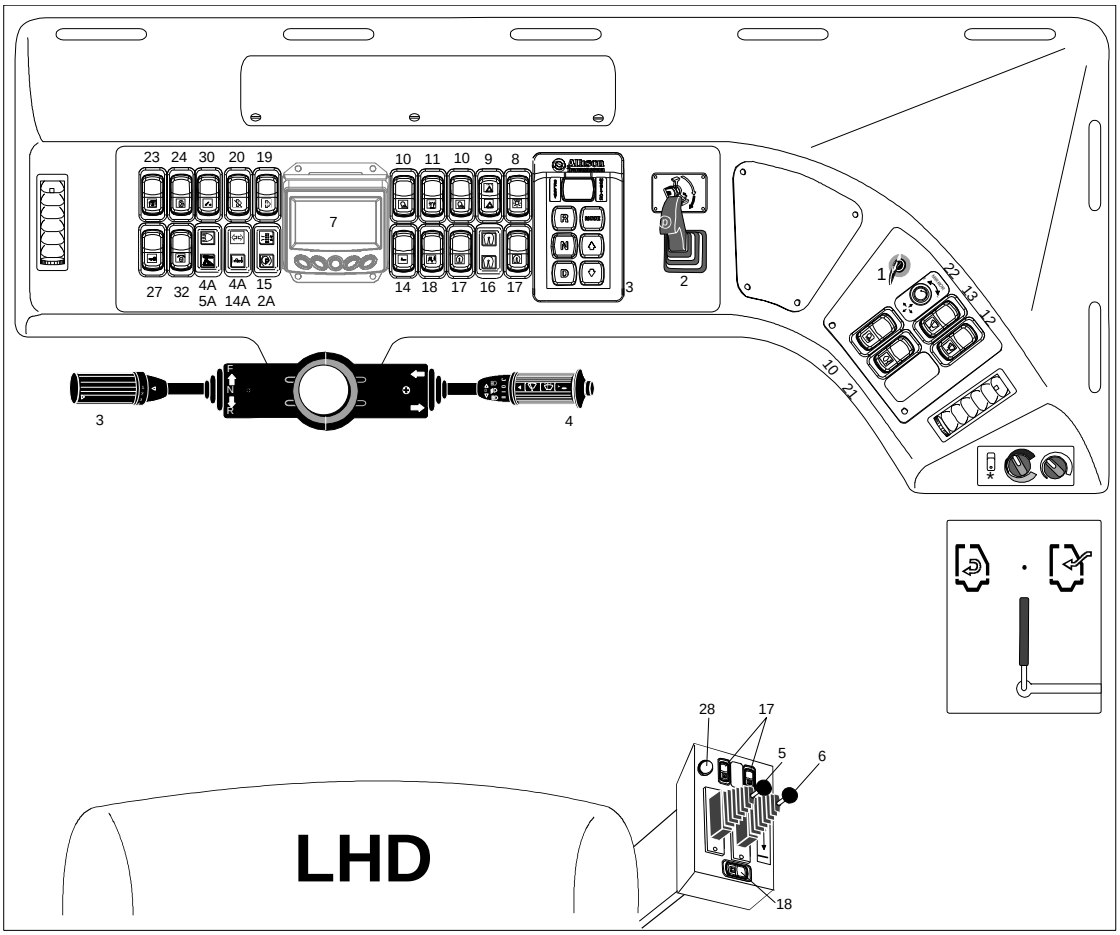
3.8 Radio (optional)

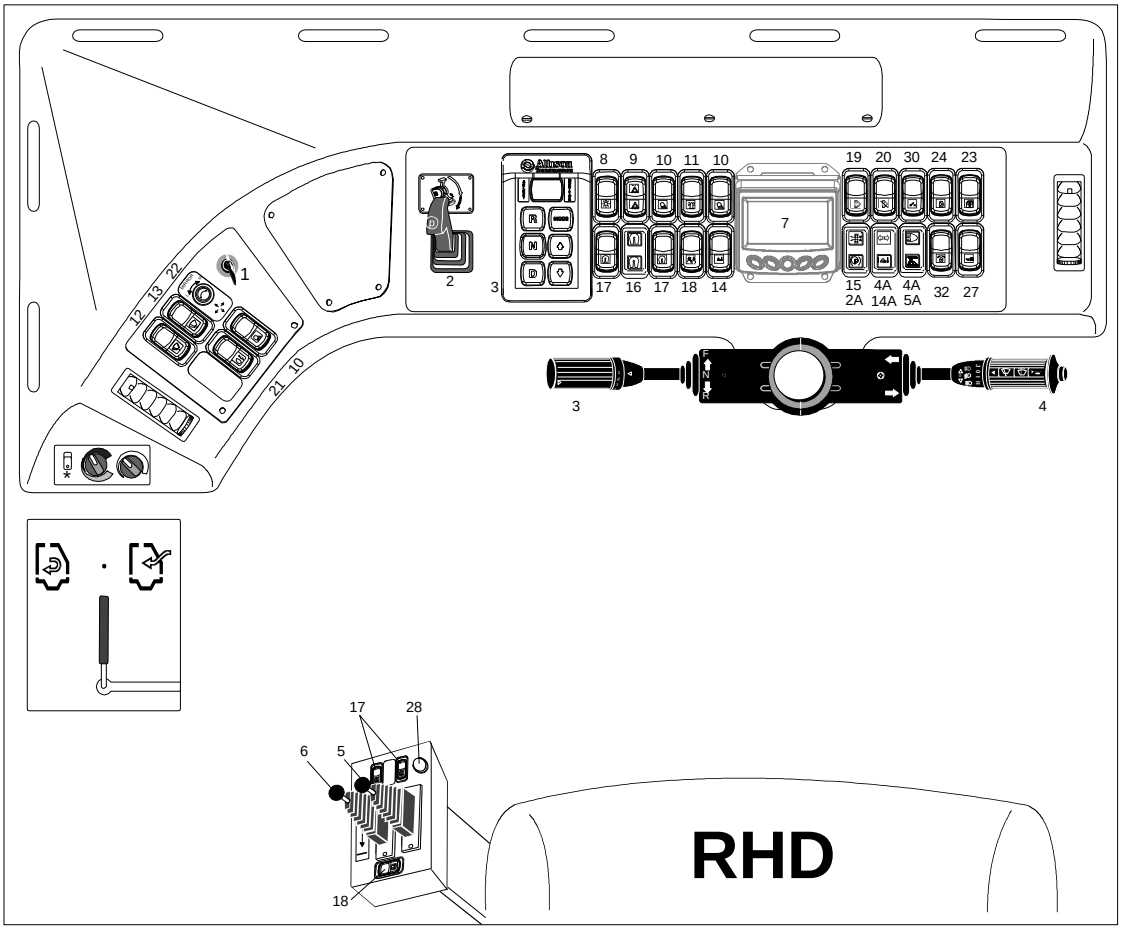
Check that the radio is working correctly and is tuned to the correct frequency/channel for the site. For more detailed information, see the radio manufacturer's operating manual.

WARNING

DO NOT have the radio volume too high – this will expose the user to excessive noise and may lead to loss of hearing over a period of time.

4 Dashboard instruments



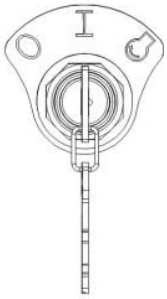


Dashboard and instruments

1 Ignition key
2 Parking brake
3 Gear lever (see Transmission manual)
4 Lever for direction indicators, main/dipped beam
main beam flash, horn, front wiper, washer, wiper interval
5 Fifth wheel levelling control
6 Additional hydraulic system option
7 Instrument cluster
8 Light switch
9 Hazard warning lights switch
10 Work light switch
11 Rotating beacon switch
12 Rear wiper interval switch
13 Rear wiper switch
14 Differential lock switch
15 Air filter indicator light
16 Fifth wheel indicator light
17 Fifth wheel unlock buttons
18 Air suspension pressure release switch
19 Regeneration START switch (optional)
20 Regeneration STOP switch (optional)
21 Rear fog lamp switch(optional)
22 Electric outside mirror switch (optional)
23 Electric window switch(optional)
24 Heated outside mirror switch(optional)
25 Rear window heating(optional)
26 Heated seat switch (optional)
27 Reversing warning buzzer switch (optional)
28 Single button fifth wheel unlock (optional)
29 Central greasing indicator light (optional)
30 Fifth wheel height override (general purpose) switch
31 Water in fuel warning light (optional)
32 Lock/unlock switch (optional)

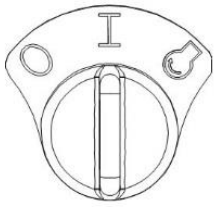
4.1 Main instruments

4.1.1 Ignition key (1)



The ignition key has 3 positions:
0= Off
1= Drive (ignition on) + pre-heating (if fitted)
2= Start

An ignition switch can be installed instead of an ignition key. This has the same positions and functionality as the ignition key, the only difference being that the switch cannot be removed.



The transmission must be in neutral and the parking brake engaged. Some engines will not start if the transmission is not in neutral.
The starter switch is not fitted with a restart inhibitor. After the key is turned to position 1, the pre-heater (if fitted) is switched on and warning light illuminates. The engine may not be started while the warning light is illuminated. When the warning light extinguishes the engine can be started and the key returns automatically to the **Drive** position.
When the key is turned to the **Drive** position, the battery charging and parking brake warning lights illuminate.

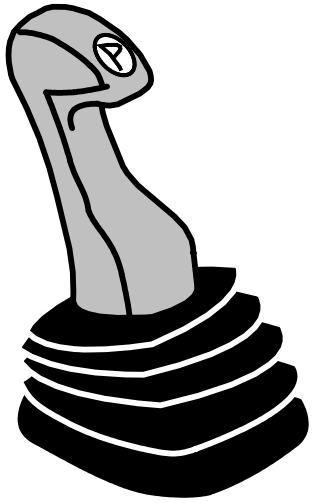
WARNING

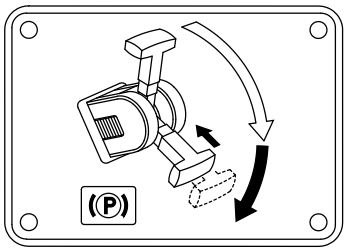
Do not attempt to drive the tractor when any of the above warning lights is still illuminated.

Release the parking brake before driving off.

Do not turn or push the ignition switch to position 0 while driving, as this will apply the parking brakes automatically, resulting in sudden heavy braking.

4.1.2 Parking brake (2)





If the parking brake control is in the upper position (tractor brakes not applied), the parking brake can be engaged gradually.
If the control is in the lower position, then the parking brake is applied, warning light is illuminated and remains illuminated until the parking brake is released.
When the parking brake is applied, the trailer brakes will usually be applied as well, but this is not the case for the standard tractor. An ECE trailer brake valve can be ordered as an optional extra. When this brake valve is fitted, the trailer brakes will be applied automatically when the tractor parking brake is applied. The trailer brakes are operated by compressed air, but air leakage could result in them being released. It is therefore advisable to check that the braking capacity of a tractor when coupled to a trailer is sufficient to prevent both the tractor and trailer from rolling when parked for a prolonged period. This can be checked by moving the parking brake to the extreme lower position, i.e. slightly to the rear of the cam. The trailer brakes will now no longer be applied. If the combination remains stationary, the tractor's braking capacity is sufficient.

Do not drive the tractor when the warning light (parking brake applied) is illuminated.
To release the parking brake, pull the control lever up and move it to the upper position.

WARNING

Always apply the parking brake before leaving the cab.

Do not park a tractor with a heavy trailer on a ramp.

The parking brake must not be applied while the tractor is in motion. The parking brake may be used to stop the vehicle in case of emergency, however (only to be applied in the event of failure of the normal brakes).

WARNING

Do not apply the parking brake while the tractor is in motion as this is dangerous.

USA-style brake system (optional)

A yellow and red button can be mounted in the cabin as an alternative set-up for the parking brake. These buttons replace the regular controls for only the pneumatic parking brake.

Yellow button: to apply the brakes of the tractor.

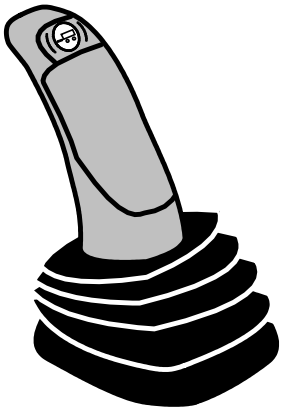
Red button: to apply the brakes of the trailer.

For both buttons applies: “push” to release and “pull” to apply the brakes.

With both buttons pushed in, the parking brakes of both the tractor and the trailer may be actuated by pulling out the yellow button (parking brake) as the red button for the trailer pops out automatically.

4.1.3 Trailer brake valve (optional)(2A)

If the trailer brake control is in the upper position (the trailer brakes are not applied), the trailer brakes can be applied gradually by moving the lever downwards.



4.1.4 Gear lever (3)

See the (automatic) transmission manual for instructions.

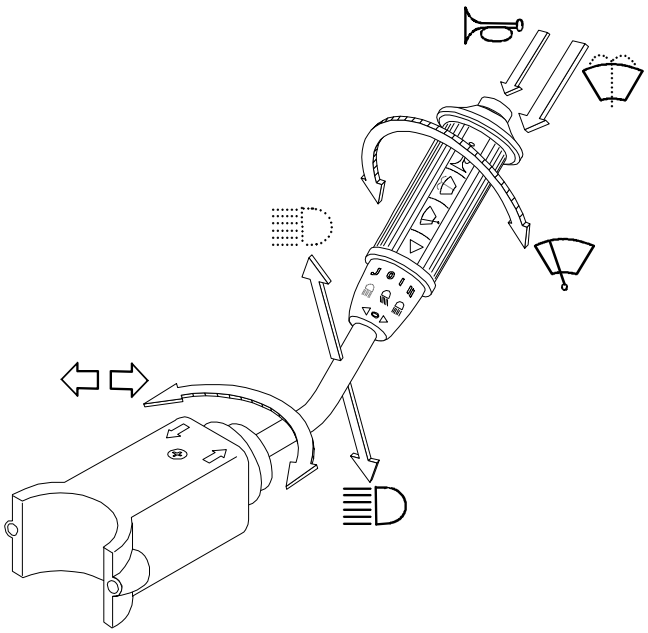
Always maintain the engine at a comfortable operating speed by selecting the correct gear for the driving conditions. When maximum engine performance is required, ensure the engine is operating as close as possible to its maximum (governed) speed under load.

WARNING

Shifting from forward (1,2,3,D) to reverse and reverse to forward or shifting out of neutral position is only allowed when the tractor is standing completely still and the engine is running idle.

4.1.5 Combined direction indicator, main/dipped beam, horn, wipers (4)

All of the above functions are operated by the lever on the steering column.



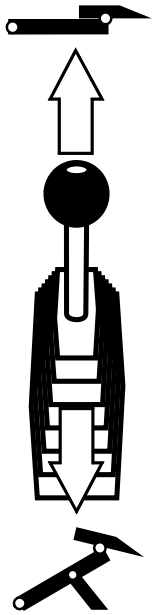
Direction indicators:
Moving the lever forwards operates the right-hand direction indicators, moving it back operates the left-hand direction indicators.

Main beam/dipped beam, main beam flash:
To change from dipped to main beam, press the lever downwards. The lever is also used for flashing the head lamps by pulling it towards the steering wheel.

Horn:
The horn is operated by pressing the button on the lever.
Use the horn only to alert other road users.

Front wiper, washer, wiper interval switch:
Turning the lever activates the front windscreen wiper.
J = Interval
0 = Off
I = Speed 1
II = Speed 2 (optional)
Pressing the ring at the end of the handle operates the windscreen washer(s).

4.1.6 Fifth wheel levelling control (5)



The lifting system is connected to the tractor's hydraulic system. The fifth wheel can be adjusted to any desired height using control lever **5**.

- Move the lever forward to lower the fifth wheel.
- Move the lever back to raise the fifth wheel.

⚠ WARNING

- **It is important to keep the fifth wheel as low as possible when driving on steep hills, to prevent loss of vehicle stability.**
- **Servicing the fifth wheel or the lifting system may only be carried out if goosenecks or trailers are not attached and when the lift frame has been properly supported.**
- **Keep clear of the underside of trailers or lifting systems during coupling.**

4.1.7 Additional hydraulic system option (6)

If the tractor is equipped with an additional hydraulic system, control lever **6** should be used.

Terberg shall not be liable for any external equipment, other than that included as part of the supply contract.

4.2 Driver information module (7)

The Driver Information Module (DIM) is used to monitor the vehicle, to perform diagnostics and to control various vehicle functions.

There are 5 buttons at the bottom of the display. Use them to control the DIM.

Switch on/off
The DIM is connected to the vehicle's power supply and therefore does not have to be switched on or off manually. Turn the ignition key to position 1 to activate the DIM.

⚠ CAUTION

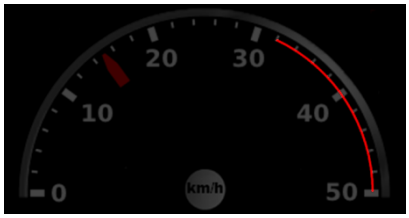
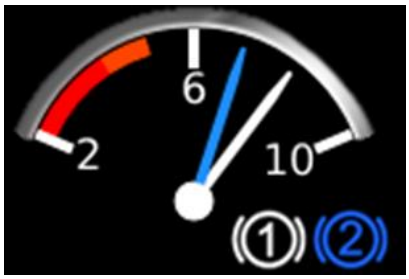
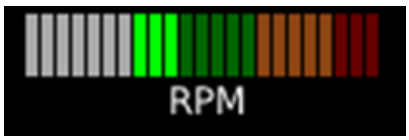
Only use the DIM menu when the vehicle is stopped and the parking brake has been applied.

Main Page: Instrument Panel
After start-up the first page, the Instrument Panel page, appears on the DIM.

Exit to Instrument Panel
Press the EXIT button to leave the active page and jump directly to the instrument panel.

4.2.1 Information on the Instrument Panel

Current vehicle information is shown on the instrument panel by means of gauges, telltales and analogue values.

	The large gauge in the middle of the instrument panel is the speedometer. (OPTIONAL) If a Speed limiter is active, a red mark will show the current limit on the rim of the gauge
	The small gauge on the left is the fuel gauge, which indicates the fuel level. (OPTIONAL) If the vehicle is equipped with a urea tank, the fuel level gauge will also monitor the level in the tank. Fuel level is indicated by a white needle. Urea level is indicated by a blue needle.
	The small gauge on the right shows the air pressure in brake circuits 1 and 2. Brake circuit 1 (front) is indicated by a white needle. Brake circuit 2 (rear) is indicated by a blue needle.
	The character and digit in the middle of the tachometer indicate the status of the transmission. The left character indicates the direction F, N or R. The left digit indicates the current gear.
	The bar in the middle of the display gives a indication of the engine speed. To optimize the fuel rate it is recommended to keep the engine speed in the green zone.

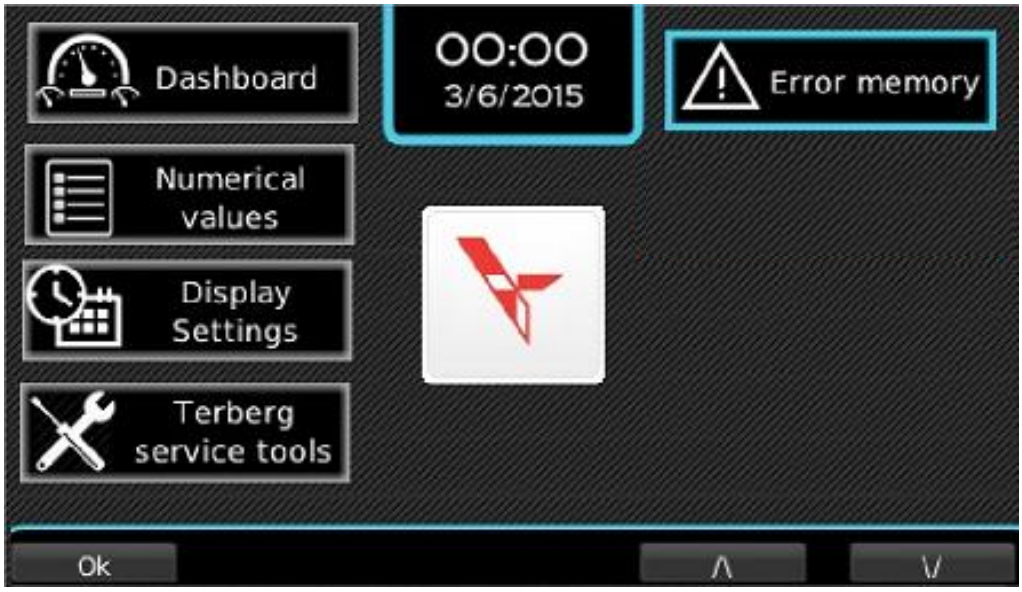
4.2.2 Additional information

Use any of the 5 buttons to open the additional information bar.

If the information bar is active it is possible to go to the different information screens, by using the button under the icon.

Button 1: Main menu

Press button 1 (book icon) to go to the main menu:



Use button 4 and 5 to move the selected menu (red box) to one of the listed pages, for example ‘Instrument Panel’, and press button 1 – OK to select the page.

In the main menu the next submenus are available:

1. Dashboard (Instrument panel)
2. Numerical values
3. Display settings
4. Terberg Service Tools (Only for authorized personnel)
5. Error memory

Button 2: Engine information

Press button 2 (engine icon) to request Engine information:

- Engine oil pressure in bar
- Engine coolant temperature in °C
- Engine speed in rpm

Button 3: Transmission information

Press button 3 (gear icon) to request Transmission information:

- Transmission convertor out oil temperature in °C

Button 4: Brake System information

Press button 4 (brake icon) to request Brake System information:

- Brake circuit 1 (front) pressure in bar
- Brake circuit 2 (rear) pressure in bar

Button 5: Vehicle information

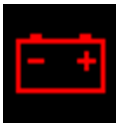
Press button 5 (vehicle icon) to request Vehicle information:

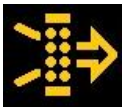
- Engine running hours

4.2.3 Warning lights

These lights can light up on the Driver Information Module (DIM). Some lights are related to optional functions and will only be displayed if these functions are installed on the vehicle.

	RED	Engine oil pressure low/high	If the light illuminates when the engine is running it indicates that the oil pressure is too low. STOP the engine immediately and check the oil level. Top up if necessary.
	RED	Engine oil level low/high	If this light illuminates the engine oil level is too high or too low. STOP the engine immediately and do a check on the oil level.
	YELLOW	Engine fault (code) active	A problem or a potential problem has been detected. Have it checked or repaired. Refer to the fault code in the engine service manual or refer to authorised service personnel.
	YELLOW	Engine coolant temperature is too high	Stop the vehicle and engine as soon as possible to prevent damage.
	YELLOW	Engine torque limited because of AdBlue system failure (OPTIONAL)	Stop the vehicle and engine as soon as possible to prevent damage.
	YELLOW	Fault in exhaust system (OPTIONAL)	The fault must be resolved by authorised service personnel.
	RED	Stop engine	Stop the vehicle and engine as soon as possible to prevent further damage.

	YELLOW	Transmission fault (code) active	A problem or a potential problem has been detected. Have it checked or repaired. Refer to the fault code in the transmission manual.
	RED	Alternator not running	This warning light shows when the engine is not running. The light should extinguish when the engine is running. If the light comes on while the engine is running, there could be a fault in the alternator circuit. Have the vehicle checked by authorised service
	RED	Urea level low indication	The tell-tale will be illuminated when the urea level is below 10%.
	RED	Fuel level low indication	Together with the buzzer, the tell-tale flashes when the fuel level gets below 10%. The buzzer can be suppressed by pressing the middle button of the display for 2 seconds.Together with the buzzer, the tell-tale will illuminate continuously when the fuel level gets below 5%. The buzzer cannot be suppressed in this situation.
	RED	Air pressure circuit 1 (front) low	Stop the vehicle immediately and do not drive off.
	RED	Air pressure circuit 2 (rear) low	Stop the vehicle immediately and do not drive off.
	GREEN	5th wheel locked	If the fifth wheel is unlocked, no message is displayed
	RED	5th wheel unlocked	Not locked properly. Do not drive with a trailer!

	RED	5th wheel height limitation override switch is activated	Do not use the override switch for longer than is absolutely necessary. Do not drive with an excessively high trailer.
	GREEN	Engine brake active	
	YELLOW	Coolant level low	Top up coolant
	WHITE	Wait to start	Do not start the engine until this light switches off. The intake air is preheated.
	YELLOW	Water in fuel detected	Stop the vehicle as soon as possible and drain the water separator. · Shut off the engine. · Place a container under the water separator · Open the drain valve manually until fluid drains out of the drain tube. · Drain the filter sump until clear fuel is visible.
	YELLOW	Air-filter is contaminated	Do replace the air-filter element as soon as possible.
	YELLOW	Regeneration start switch	This switch can be used to start a manual regeneration. When the regeneration is manually started, the SCR system cleaning light is illuminated. Refer to the engine section in the operation manual.
	YELLOW	Regeneration stop switch	This toggle switch inhibits an automatic or stops a manual regeneration. When the regeneration is stopped or inhibited, the SCR system cleaning stop light is illuminated. Refer to the engine section in the operation manual.

	YELLOW	Solid light	Tyre pressure is too low (or too high), if possible have the tyre pressure checked by authorized personnel.
	RED	Blinking light	Tyre pressure is too low, have the tyre pressure increased as quickly as possible by authorized personnel.
	RED	Solid light + buzzer	Tyre pressure in one of the tyres is critical. Stop the vehicle as quickly as possible, in a safe place, and have the tyres checked by authorized personnel. (If there is no tyre failure, check the TPMS system)

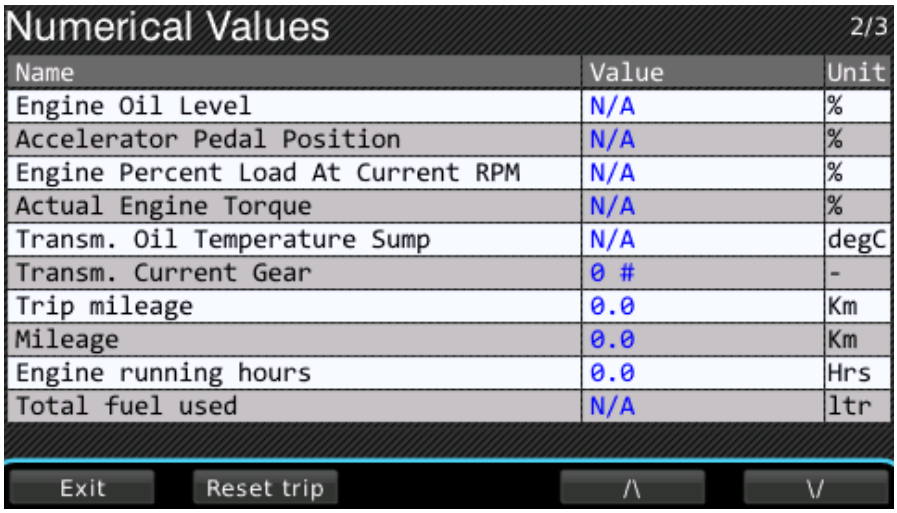
4.2.4 Other pages

Numerical values

The Numerical Values pages display real time data in numerical values. Numerical Values page 1 and page 2 display the more dynamic values. The more static values are shown on the Numerical Values page 3. This real time data can be useful for diagnosing the tractor

Press one of the buttons for the information bar ➔ Press button 1 (Main menu) ➔ Select Numerical values with button 4 or 5 and press Ok (button 1)

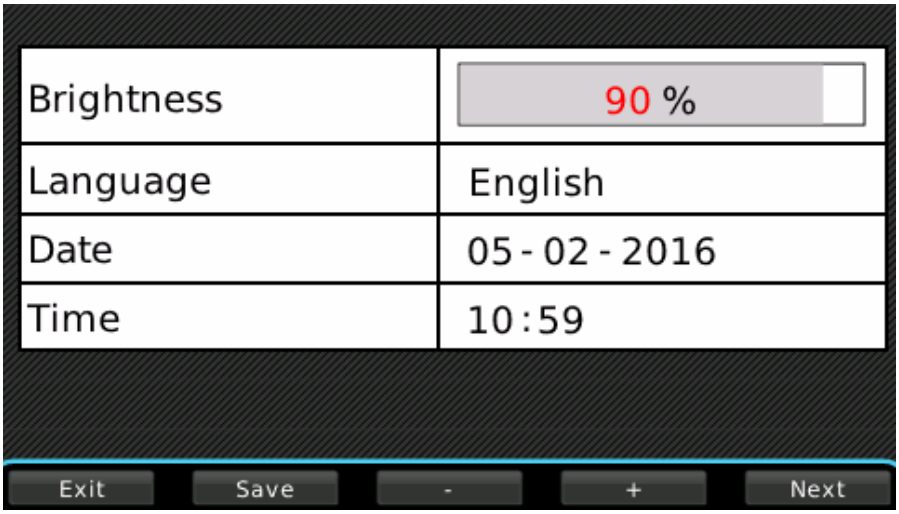
To scroll through the 3 pages of different values, use button 4 and 5.



Press button 2 (Reset Trip) to reset the Trip mileage to '0' on page 2.

Display Settings

Press one of the buttons for the information bar ➔ Press button 1 (Main menu) ➔ Select Display Settings with button 4 or 5 and press Ok (button 1)



Use button 5 to move the selector through the display settings. The activated value will become red. Use button 3 and 4 to change the activated value and use button 2 to save the chosen value. Press button 1 to leave the menu without saving.

The available settings are:

- Brightness Display
- Language English / Deutsch
- Date DD.MM.YYYY
- Time hh.mm

4.3 General switches / indicators

4.3.1 Light switch (8)

The parking lights can be turned on by moving the switch to the first position. The parking lights remain on when the ignition key is in position **0**.

Providing the ignition key is in the **Drive** position, the head lamps can be turned on by moving the switch to the next position. Use lever **4** to switch between main and dipped beams.

4.3.2 Hazard warning lights switch (9)

Pressing the lower part of the switch causes the direction indicators to flash simultaneously.
Hazard warning lights are used when you are forced to stop or park the vehicle where it might present a hazard or hindrance to other traffic.
The hazard warning lights can be used at any time, irrespective of the position of the ignition switch.

4.3.3 Work light switch (10)

The work light is operated by pressing this switch.

4.3.4 Rotating beacon switch (11)

Turn on the rotating beacon by pressing this switch.

4.3.5 Rear wiper interval switch (12)

The rear wiper is set to interval operation by pressing this switch.

4.3.6 Rear Wiper switch (13)

The rear wiper is operated by pressing this switch.

0 = Off
1 = Speed 1
2 = Speed 2 (Optional)

4.3.7 Differential lock switch (14)

The differential lock is used to disable differential operation of the rear wheels. When the differential is locked, the left and right rear wheels are coupled rigidly and large stresses can occur in the half shafts. Improper use can damage the differential.

The differential lock is engaged by pressing the switch. When the differential is locked, the warning light illuminates and stays lit for as long as the differential lock is engaged.

Some versions are equipped with an automatic differential lock without a control switch.

Engaging the differential lock:
Engaging and disengaging the differential lock is allowed only when the vehicle is stationary. Engage the differential lock before driving on surfaces with poor traction or on slippery roads.

Do not use the differential lock:
- On surfaces that provide adequate traction.
- When turning sharply or when the tractor is loaded.
- When the vehicle is fitted with anti-skid equipment (snow chains, etc.).

Disengaging the differential lock:
- Stop the vehicle.
- Release the switch. Do not drive off until **the warning light is extinguished.**
  If the warning light does not extinguish immediately on releasing the switch, select a forward or reverse gear. Drive off **carefully** at low speed until the light extinguishes.

4.3.8 Air filter indicator light (15)

This lamp indicates that the air filter is blocked or obstructed.
Clean or replace the air filter as soon as possible.

4.3.9 Fifth wheel indicator light (16)

This light indicates whether the fifth wheel is locked or unlocked.

GREEN = locked
RED = unlocked or not properly locked. Do not drive with a trailer!

WARNING

The red and green fifth wheel indicator lights are for indication only. Always check that the king pin is correctly locked in place, either by visual inspection or by carrying out a PULL AND PUSH TEST to confirm that correct locking has taken place.

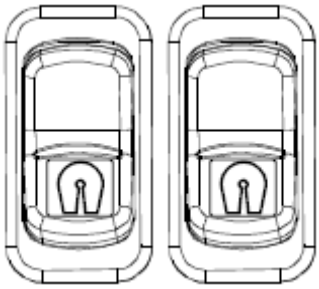
Do not drive with a trailer if the fifth wheel indicator is red.

NOTICE

- **In some vehicles this may differ**
- **If indicator light is not present, see page 34. Displayed in the DIM**

4.3.10 Fifth wheel unlock buttons (17)

To unlock the fifth wheel, the two buttons shown must be depressed simultaneously. These buttons are located on the dashboard or in a location specified by the customer.



NOTICE

- **If only one button is depressed it will not be possible to unlock the fifth wheel.**
- **The locking mechanism must be checked for signs of wear when the vehicle is serviced.**
- **The fifth wheel can only be unlocked when the tractor is almost stationary.**

WARNING

Never unlock the fifth wheel while the vehicle is in motion.

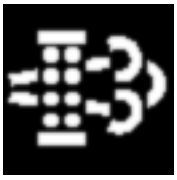
4.3.11 Air suspension pressure release switch (18)

Air can be released from the rear axle air suspension by pressing and holding in switch **18.** When the lifting system is set to its lowest position, releasing air from the air suspension will lower the fifth wheel even further. This may be necessary in the case of a low trailer. When switch **18** is released, the tractor rises again to its original position.

WARNING

Ensure the vehicle is stationary before releasing air from the air suspension. Do not operate switch 26 (air suspension release) while driving.

4.3.12 Regeneration start switch (19)



This switch can be used to start a manual regeneration. When the regeneration is manually started, the SCR system cleaning lamp is illuminated.
Refer to the engine section in the operation manual.

4.3.13 Regeneration stop switch (20)

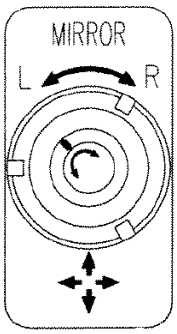
This toggle switch inhibits an automatic or stops a manual regeneration. When the regeneration is stopped or inhibited, the SCR system cleaning stop lamp is illuminated.
Refer to the engine section in the operation manual.

4.4 Optional switches / indicators

4.4.1 Rear fog lamp switch (optional) (21)

The rear fog lamp is switched on by pressing this switch.

4.4.2 Electric outside mirrors (optional) (22)



The button can be moved in 4 directions: forward, back, left and right. The outside mirror moves in the corresponding direction. Turning the button to the left or right selects the respective outside mirror.
Adjust the outside mirrors before driving the vehicle.

WARNING

An object seen in the mirrors might be closer than it seems.

4.4.3 Electric window (23)

Lower the electric window by pressing the switch down. Close the window by pressing the upper part of the switch.
The electric window is equipped with 'comfort control'. If the switch is held down for more than one second, the window will automatically continue lowering until it reaches its end stop.

4.4.4 Heated outside mirror switch (optional) (24)

Heating for the outside mirrors is switched on by pressing switch **24**.

4.4.5 Rear window heating (optional) (25)

Activate the rear window heating by pressing this switch. It can be used to demist and de-ice the rear window.
Activate rear window heating only when demisting/de-icing is necessary. Prolonged operation can damage the system.

4.4.6 Heated seat switch (optional) (26)

Seat heating can be switched on and off using switch **26**.

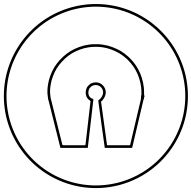
4.4.7 Reversing warning buzzer switch (optional) (27)

The reversing warning buzzer can be switched on and off using switch **27**.

WARNING

Do not switch the buzzer off for longer than is absolutely necessary. Exercise extreme caution when driving the tractor with the buzzer switched off, as other road users will not receive an audible warning. The operator is responsible for the safe use of this vehicle.

4.4.8 Single fifth wheel unlock button (optional) (28)



To unlock the fifth wheel, the button shown must be depressed. This button is located on the dashboard or in a location specified by the customer.

NOTICE

- **The fifth wheel is unlocked when the button is depressed.**
- **The locking mechanism must be checked for signs of wear when the vehicle is serviced.**
- **The fifth wheel can only be unlocked when the tractor is almost stationary.**

4.4.9 Central greasing system lamp (optional) (29)

The central greasing system is indicated on the dashboard by a lamp or a symbol. The type of indication depends on the central greasing system that is installed.
In most cases the lamp shows the status and fault codes of the greasing system by means of flashing codes.

Normally when the ignition is set to the ON position, the lamp flashes to indicate the default duty cycle of the system.

When a greasing cycle is executed, when the cartridge is (almost) empty or when there is an error, this will also be indicated (see the central greasing manual for detailed information).

4.4.10 Fifth wheel height override (general purpose) switch (30)

This switch has a general-purpose function depending on the owner's requirements.
Functions can be as follows:

1) To override the fifth wheel height restriction, press switch **30**.

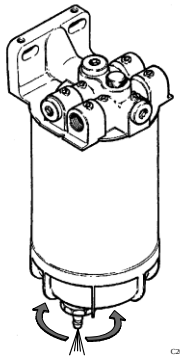
2) To override a customer-specified option.

WARNING

Do not use the override switch for longer than is absolutely necessary. Do not drive with an excessively high trailer.

Water in fuel warning light (optional) (31)
This yellow warning light illuminates if there is a high water level in the
fuel system water separator. Stop the vehicle as soon as possible and drain the water separator.

- Shut off the engine.
- Place a container under the water separator
- Open the drain valve manually until fluid drains out of the drain tube.
- Drain the filter sump until clear fuel is visible.

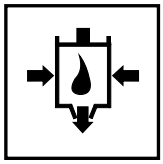


WARNING

Water can contain toxic and carcinogenic substances. Drain the water/fuel mixture into a container and dispose of it in accordance with local environmental regulations.

4.4.11 Hydraulic system warning light (optional) (32)

Yellow warning light **31** illuminates when a fault occurs in the hydraulic system, e.g. high oil temperature.



WARNING

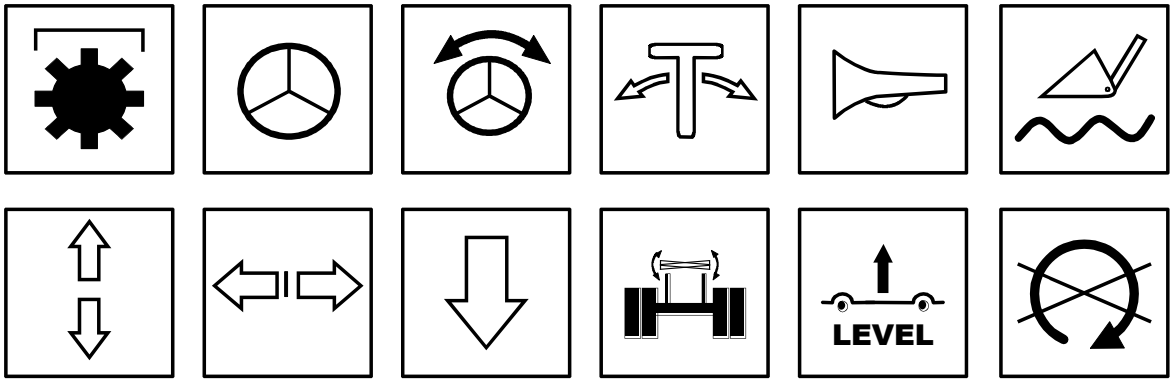
If the warning light illuminates, stop the vehicle as soon as possible. Let the hydraulic system cool down by not using it. The fault must be resolved by authorized service staff when the light remains illuminated.

4.4.12 Lock/unlock switch (optional) (33)

This switch has a general-purpose function, depending on the owner's requirements for locking or unlocking additional couplings.

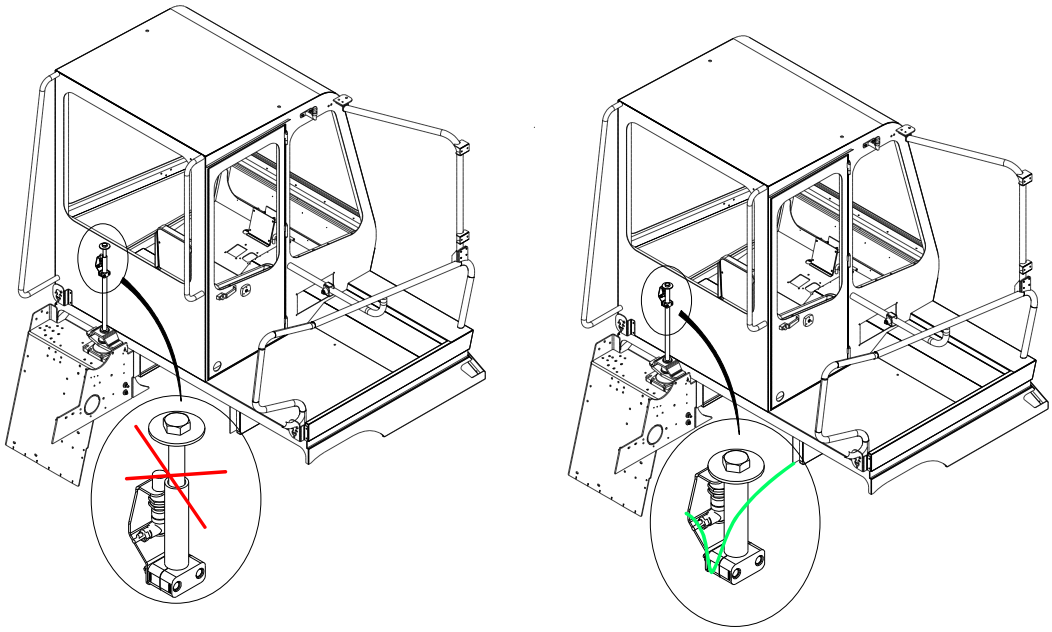
4.4.13 Switch/warning light (optional) (34)

The symbols for switches or warning lights have a general function, depending on the owner's requirements (e.g. additional hydraulics.)



4.4.14 Cab lock open warning light (optional) (35)

It is mandatory to always properly tighten the cab lock bolt (see picture below) before driving the tractor. If this is not done properly, the indicator on the dashboard will light up and a buzzer will sound when the tractor speed exceeds ±1km/h.



WARNING

If the warning light illuminates, and the buzzer sounds, return the tractor to the workshop as soon as possible.
The cab lock bolt must be tightened by authorized service staff when the light illuminates and the buzzer sounds.
The operator is responsible for the safe use of the tractor.

5 Operating the Tractor

5.1 Before driving

Check / do the following before driving off:

- Check the engine oil level.
  The oil level should be between the marks on the dipstick. The oil must be topped up if the level is below the minimum mark, and drained if the level is above the maximum mark. If topping up is required, use the same grade of oil as is already in the engine.
- Check the coolant level in accordance with the instructions given in this manual.
- Check for leakage of the pneumatic braking system.
- Check the DIM for warning lights.

WARNING

Never drive off in a tractor with active warning lights and/or a leakage of the pneumatic braking system!

- Check the wheel mounting and tyre pressure of all wheels.
- Check the fuel level.
  Use fuel which comply with these standards: DIN 51601, EN590 or ASTM-D975 No.2-D.
- Check the AdBlue level.
- Adjust driving position (seating, steering column)
- Adjust the mirrors

5.2 Driving

5.2.1 Starting the engine

Start the engine in the following order:

- Ensure the parking brake is applied.
- Ensure the gear lever is in neutral.
- Turn the ignition key to the **first** position (drive + preheating).
- Wait until this white engine-wait warning light extinguishes.
- Turn the ignition key to the **start** position, to start the engine.
- Do not depress the throttle pedal.
- Release the ignition key after the engine has started.

NOTICE

If the engine is cold, keep the engine speed below 1500 rpm until normal operating temperature is achieved.

5.2.2 Stopping the engine

Stop the engine in the following order:

- Stop the vehicle.
- Select neutral and apply the parking brake.
- Turn the ignition key to the **"0"** position.

NOTICE

It is advisable to allow a hot engine to idle for at least one minute before turning it off (this allows the turbocharger to cool down).

5.2.3 Shifting/changing gears

NOTICE

In this manual the general procedure for shifting/changing gears is described. Refer to the gearbox section in this manual for detailed instructions.

Shifting from neutral (N) to drive (D) or reverse (R)

- Apply the brakes of the tractor by pushing the brake pedal.
- Release the parking brake.
- Do not press the throttle pedal, the engine must be running idle.
- Shift the gearbox in drive or reverse with the gear-lever.
- If the chosen gear is indicated on the DIM, the tractor is ready for driving off.
- Gently release the brakes as the tractor tends to drive off.
- Press the throttle pedal for (further) acceleration.

Shifting from drive or reverse (D or R) to neutral (N)

- Apply the brakes of the tractor by pushing the brake pedal.
- Ensure the tractor is standing completely still.
- Do not press the throttle pedal, the engine must be running idle.
- Shift the gearbox from drive or reverse to neutral with the gear-lever.
- If the N is indicated on the DIM, the gearbox is in neutral. Keep applying the brakes or apply the parking brake.

Shifting from drive (D) to reverse (R) and vice versa

- Apply the brakes of the tractor by pushing the brake pedal.
- Ensure the tractor is standing completely still.
- Do not press the throttle pedal, the engine must be running idle.
- Shift the gearbox in drive or reverse with the gear-lever.
- If the chosen gear is indicated on the DIM, the tractor is ready for driving off.
- Gently release the brakes as the tractor tends to drive off.
- Press the throttle pedal for (further) acceleration.

WARNING

To avoid unexpected vehicle movement, always apply the brakes of the tractor, keep the throttle released and the engine at idle, before changing gear.

5.2.4 Driving instructions

Safe and durable driving

To ensure safe and durable operation of the tractor, Terberg provides the following driving instructions which the driver must read before driving the vehicle.

- Always wear the seatbelt when driving the tractor.
- Make a check, after starting and regularly while driving, that the instruments display their normal values.
- Brake as smooth as possible to avoid excessive wear of the brake components.
- Always connect the air-lines to prevent jack-knifing under heavy braking
- Always connect the electrical connections for vehicle lightning on the trailer.
- For stability of the combination keep trailer height to a minimum, but high enough to provide sufficient ground clearance
- Keep the cornering speed low when driving with high loads.
- When the engine is still cold, use only low revs and a low engine load.

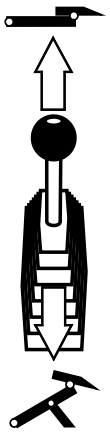
- Try not to turn when the front wheels are obstructed by a curb or other object. The power steering and tyres can be damaged.
- Use the differential lock only when driving straight ahead on slippery roads.
- Let the engine idle for at least 1 minute before turning the engine off. This avoids heat stress in the engine.
- Always apply the parking brake when parking the tractor.

Economic driving
High fuel costs and concern for the environment mean that the tractor should be driven as economically as possible. Driving the vehicle correctly can have a significant effect on fuel consumption and operational life.

Observing the instructions below will ensure that your vehicle is used economically:
- Check that the correct gear is selected before starting to drive. If in doubt, select the lower gear.
- Shift the gear lever to neutral when the vehicle is stationary.
- Try to keep engine speed as low as possible.
- Ensure tyre pressures are correct.
- Do not drive at excessive speed.
- Do not allow the engine to idle unnecessarily.
- Never leave the tractor for prolonged periods with the engine running.

5.3 Tractor-trailer (un)coupling

5.3.1 Using the lifting system of the 5th wheel



The tractor has a lifting system for its 5th wheel, due to ergonomic reasons for the driver. The system is able to lift trailers of different heights, so the driver doesn't have to manually retract the supporting legs of the trailer.

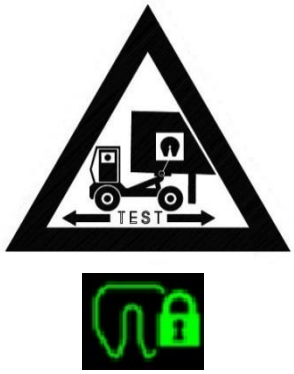
The lifting system is part of the tractor's hydraulic system. The fifth wheel can be adjusted to any desired height using control lever **5** on the steering column.
- Move the lever forward to lower the fifth wheel.
- Move the lever back to raise the fifth wheel.

The fifth wheel must be raised sufficiently to ensure the trailer is at least parallel with the surface (as shown in picture). This to ensure that load distribution is optimal, and stresses in the combination are kept to a minimum.

When driving on uneven ground, obstacles, ramps etc. the trailer can be raised to keep it sufficiently clear from the ground. Always keep it lowest possible (parallel to the surface it drives on), which ensures best stability.

A horizontal trailer makes loading/unloading also easier. During loading/unloading of the trailer, it is for the Terberg tractor not necessary to lower the trailer legs to the ground. It is a local operational decision wherever this is required or not.

5.3.2 Coupling a trailer



- Bring the upper surface of the fifth wheel to the same height as the lower side of the trailer's wear plate.
- Reverse the tractor carefully until the fifth wheel locks.
  The fifth wheel locks automatically when the king pin locates in the fifth wheel.
- Check that the green warning light is illuminated. If this is not the case, correct coupling has not been achieved. Try to connect again until the green warning light is illuminated.
- Connect air lines and electrical connections from the trailer to the vehicle as required.

WARNING

Check the king pin size before connecting the trailer to the fifth wheel. Using a king pin that is not of the correct size could result in the trailer becoming detached.

The driver must ensure that the king pin is correctly locked in place, either by visual inspection or by carrying out a pull and push test to confirm that correct locking has taken place. The vehicle must not be used until all the above conditions are checked.

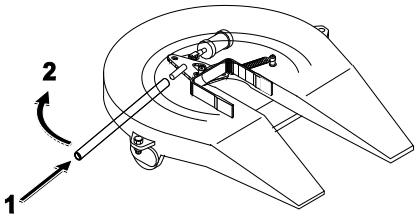
5.3.3 Uncoupling a trailer

- Find a suitable parking place and stop.
- Lower the fifth wheel until the trailer front supports are on the ground.
- Disconnect air lines and electrical connections between the trailer and the vehicle.
- Depress fifth wheel unlock buttons **17** simultaneously to unlock the fifth wheel, then drive the tractor forward.

NOTICE

Check that there is no load on the fifth wheel and ensure that the fifth wheel locking mechanism is not under tension.

When unlocking with the buttons is not possible, you can unlock the fifth wheel by hand. Use the cabin lift bar to unlock the fifth wheel by hand.



Procedure:

1. Put the cabin lift bar on the little bar which is welded on the cam plate under the fifth wheel.
2. Pull the cabin lift bar forwards. The fifth wheel unlocks

WARNING

Before uncoupling the trailer from the fifth wheel, ensure that the trailer is secured with the trailer brake or with chocks under the tyres.

Before uncoupling the trailer from the fifth wheel, ensure that the trailer connections (airlines and electrical connections) between trailer and vehicle are disconnected.

6 Daily maintenance

The driver's responsibility
Daily maintenance requires the driver to take a few minutes each day to check a number of important items to ensure proper operation of the tractor. These few minutes are intended both for the driver's safety and for safety of fellow road users. It is also a way of checking that all the operating systems are in good condition before starting the day's work. If topping up a system is necessary, use only the approved liquids.

⚠ CAUTION

The maintenance in this manual is for a daily operation only. For a more comprehensive service refer to the Terberg maintenance manual.

When working on heights, the necessary access equipment must be provided to ensure that the maintenance tasks can be carried out safely.

6.1 Fuel

6.1.1 Diesel

Use fuel which comply with these standards: DIN 51601, EN590 or ASTM-D975 No.2-D. See the engine manufacturer's maintenance and operation manual for specific fuel recommendations and specifications. Use special winter fuels for quick starting in winter.

6.1.2 Natural gas

For all natural gas engines the methane number based on SAE 922359 and the higher or lower heating value (as appropriate**) must** equal or exceed those shown in the table below.

Standard: CES 14624	ISL G
Minimum Methane number	75
Minimum Lower Heating value	37448,6 kJ/kg (16100 BTU/lbm)

NOTICE

It is extremely important that fuel is kept clean and free from dirt or water, to prevent damage to the fuel system and the engine.

See separate section in this operation manual for fuelling instructions of natural gas

6.2 Engine / Transmission oil level

Withdraw the dipstick from its holder and wipe it with a clean, lint-free cloth. Replace the dipstick in the holder, wait a moment, withdraw the dipstick again and check the oil level. This should be between the marks on the dipstick. If necessary, top up with oil through the filler hole. Always top up with the same brand and type of oil already present in the engine or transmission.
Refer to the transmission section of the operation manual for a detailed procedure for checking the transmission oil level. For more detailed information, check the Terberg maintenance manual.

6.3 Coolant level

Check that the coolant level is between the minimum and maximum marks on the expansion tank. If topping up is necessary, fill the system with the same type of coolant as already used in the expansion tank.
Never fill the system with water alone. A high performance coolant which offers adequate protection against corrosion, cavitation and freezing must be used.
For more detailed information about coolant, check the Terberg maintenance manual.

WARNING

Never open a hot cooling system as hot coolant can cause severe burns.

6.3.1 Coolant

In the Terberg maintenance manual you can find the correct type of coolant for your tractor.

CAUTION

Make sure to use the correct coolant for your tractor.

Do not mix different types of coolant, this can result in engine damage.

WARNING

Glycol is toxic. Hands must ALWAYS be washed after handling glycol.

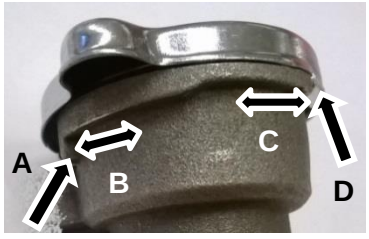
Dispose of glycol in the proper manner.

WARNING

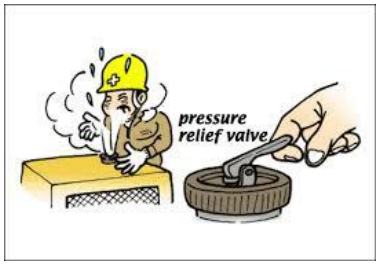
When working on the cooling system, care must be taken particularly if the engine is at operating temperature, as the coolant may be hot enough to scald.

Always allow the system to cool down before removing the expansion tank cap.
Do not remove an expansion tank cap from a hot cooling system.

The coolant system is fitted with double cap-lock stops preventing the removal of the radiator cap in a single counterclockwise motion. The radiator cap locks onto the expansion tank with a quarter turn and it must be pushed down before it can be turned on (A) or off (D).



A = fully closed end stop
B = fully closed area
C = pressure relief area
D = pressure relief end stop



If you must remove the expansion tank cap from a hot system, always let the system cool down as long as possible to prevent local boiling of the coolant inside the coolant system!
Wear protective gloves, clothing and eyewear and remove the cap as follows:

1. Ensure the engine is not running.
2. If a pressure cap with pressure release (push button or lever) is installed firstly always carefully release the full system's pressure with the cap still in the fully closed end stop position (A).
3. To prevent the pressure inside from erupting, slowly rotate the pressure cap from the fully closed end stop (A), via (B) to the release area (C). Any remaining system pressure needs to be fully released **before** removing the expansion tank cap (D).

Warning! If you don't, this could cause the scalding hot coolant to spill over you or someone standing nearby.

NOTICE

If you need to replace a pressure cap, use only a cap with the correct recommended pressure. If a cap with a lower pressure rating is fitted, it will lower the boiling point of the coolant.

Alternatively, a higher rated cap will increase the boiling point.

6.4 Hydraulic level

Before checking the oil level, check the hydraulic oil hoses, connections and cylinders for leaks. The oil level must be halfway up the sight glass when the lifting system is in its lowest position. If the oil level is too low, top it up with the same type of oil that is already present in the system. Add oil through the breather filter on the top of the hydraulic tank. Unscrew the breather filter cover anti clockwise and remove the breather filter. Add oil into the hydraulic reservoir. Replace the breather filter and screw the breather filter cover clockwise hand tight. The oil level check must be carried out with the engine switched off, to eliminate the risk of air being drawn into the hydraulic system.

NOTICE

Make sure that the lifting system is in its lowest position when you check the oil level.

Use the same type of hydraulic oil as already used in the hydraulic system. See the Terberg maintenance manual for more detailed information.

6.5 Fifth wheel

Check that the fifth wheel is well greased to eliminate wear.
Keep the fifth wheel sensors clean. They must be clean and in good condition to ensure correct operation.
If necessary clean the sensors with a lint-free cloth.

WARNING

Stay away of an operating fifth wheel. Body parts could become trapped in the fifth wheel or between the fifth wheel and the tractor chassis.

6.6 Air tanks and air dryer

An air dryer extracts water from the vehicle's air circuits. Do change the air dryer in accordance with the Terberg maintenance manual.

Each air tank has a drain valve at the bottom to let out any water that may have accumulated in the tank. The drain valve can be manual or automatic. Do open the manual valve weekly. The automatic valves are triggered every time the brake is applied. Do a check of both types of valves in accordance with the Terberg maintenance manual.

WARNING

Water in the air circuits will shorter the lifetime of the air circuit components!

6.7 Instruments and lighting

Check all lights and instruments before driving.

6.8 Driver's seat and mirrors

Adjust the seat and mirrors to the correct positions before driving.

6.9 Windscreen washers

Check the fluid level and top up if required. The reservoir is located in the cab. In the summer, add screen cleaner to the water reservoir to keep the windscreen free of greasy deposits and insects. In winter, use water mixed with special screen wash anti-freeze.

6.10 Wheels and tyres

Check the condition and pressure of the wheels and tyres every week. Check that all wheel bolts are tightened.
Remove foreign objects (e.g. stones) from the tyre treads.

WARNING

Damaged tyres, tyres with insufficient tread, tyres subjected to excessive loads or tyres that are not correctly inflated can fail. This is extremely hazardous and should be avoided at all costs.

NOTICE

Terberg provides tyres to meet each customer's specifications. It is the customer's responsibility to ensure that tyres meet the working requirements of their individual needs.

6.10.1 Tyre pressure and wheel load

Every tyre displays information concerning its permissible load (load index) and speed (speed rating). The load index (e.g. **152/147**) is a code for the maximum permissible load at the speed indicated by the speed rating (e.g. letter **K**). The first number in the load index indicates the index for single mounting, the second for dual mounting.

The tyre pressure should normally be 8 - 10 bar at nominal carrying capacity, depending on the tyre specification and load condition. The pressure for the tyre's load index is shown on the tyre sidewall.

Speed rating (on tyre sidewall): F= 80km/h, G=90 km/h, J=100 km/h, K=110 km/h, L=120 km/h, M=130 km/h).

⚠ CAUTION

According to the ETRTO Standards Manual: "In any case, it is recommends to avoid the maximum permissible load capacity if the resulting inflation pressure is higher than 1000 kPa (10 bar). In that case, either the load shall be reduced accordingly or the tyre and rim manufacturers shall be consulted."

NOTICE

According to the ETRTO Standards Manual: "The load carrying capacity of tyres in dual fitments is twice the load carrying capacity in single up to 40 km/h. Bonus loads will not be permitted for speeds of 40 km/h and above if the wheel axles are rigidly fixed to the body of the vehicle."

The relationship between load index and the maximum permissible tyre load is shown in the table below.

Load index and load per tyre in kg
(The tyre pressure for the load index is shown on the tyre sidewall)

Load index	Load kg	Load index	Load kg	Load index	Load kg
140	2500	**160**	4500	**180**	8000
141	2575	**161**	4625	**181**	8250
142	2650	**162**	4750	**182**	8500
143	2725	**163**	4875	**183**	8750
144	2800	**164**	5000	**184**	9000
145	2900	**165**	5150	**185**	9250
146	3000	**166**	5300	**186**	9500
147	3075	**167**	5450	**187**	9750
148	3150	**168**	5600	**188**	10000
149	3250	**169**	5800	**189**	10300
150	3350	**170**	6000	**190**	10600
151	3450	**171**	6150	**191**	10900
152	3550	**172**	6300	**192**	11200
153	3650	**173**	6500	**193**	11500
154	3750	**174**	6700	**194**	11800
155	3875	**175**	6900	**195**	12150
156	4000	**176**	7100	**196**	12500
157	4125	**177**	7300	**197**	12850
158	4250	**178**	7500	**198**	13200
159	4375	**179**	7750	**199**	13600

For speeds lower than those indicated by the speed rating, the carrying capacity can be multiplied by factor D*, shown in the table below.

The tyre pressure must also be multiplied by factor L* to compensate for the higher carrying capacity, also shown in the following table.

When the wheel load exceeds the nominal rating, the tyre pressure must be increased by factor **L*** in accordance with the following table

ONLY VALID FOR **Speed rating*: F - G - J - K - L - M**		
Vehicle speed	Carrying capacity	Air pressure
	D*	L*
50	1.12	1.08
40	1.15	1.10
30	1.25	1.13
25	1.35	1.17
20	1.50	1.21
15	1.65	1.25
10	1.80	1.30
5	2.10	1.40
0	2.50	1.40

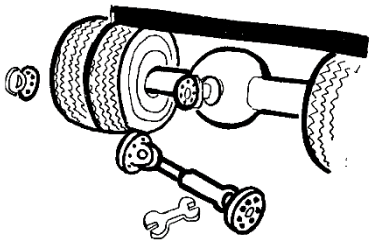
D* = carrying capacity multiplication factor.
L* = tyre pressure multiplication factor.

7 Repair and maintenance

CAUTION

The maintenance in this manual is for a daily operation only. For a more comprehensive service refer to the Terberg maintenance manual.

7.1 Towing or pushing



If you need to tow or push a tractor, always use a tow bar.

Refer to the transmission section of the operation manual for more details on towing or pushing.

If there is a problem in the drive train, make sure to take appropriate measures to prevent additional damage.

NOTICE

If you need to tow a tractor, always use a tow bar!

Make sure to lock the steering axle in the straight-ahead position.

7.2 Cab tilting

The cab tilt bar is stored in the cab.

Before tilting the cab ensure that:

- The safety bolt has been removed from the rear cab support.
- Unlock all extra locking devices which prevent the cab to tilt.(optional)
- The cab door is properly closed.
- The engine is turned off.
- The parking brake is applied.
- The gear lever is in neutral.
- There are no persons or loose objects in the cab that could cause damage.
- The windscreen washer reservoir is properly closed

Some models are equipped with an additional steel strut to support the cab when it has been tilted. This red strut is located next to the driver's seat.

WARNING

If the safety bolt is not inserted in the rear cab support, the cab may be liable to tilt during driving. This could result in serious injury to the driver. Always check that the safety bolt in the rear cab support is secure.

If the extra locking devices are not properly locked, the construction may be liable to tilt during maintenance or repairing. This could result in serious injury to persons or equipment. Always check that the extra locking devices are locked properly.

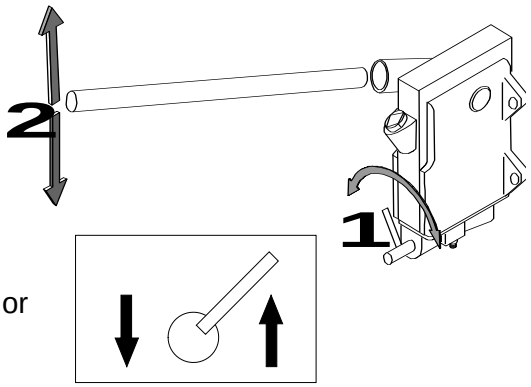
Ensure that the cab is fully tilted before carrying out any work under the cab (the cab must be tilted beyond its balance position).

Under no circumstances should any maintenance be carried out under the cab unless it is beyond its balance position and the locking bar is correctly secured. If work is to be carried out beneath the cab for prolonged periods, it is advisable to fit a secondary manual bar.

NOTICE

If the pressure in the cab tilting system fails to increase after pumping, this is probably caused by air in the system.

7.2.1 Cab tilting with hydraulic pump



Tilting the cab up

- Move the lever on the hydraulic pump to the up position, about 1/4 turn clockwise to the stop (arrow up).
- Pump the cab upwards until it has reached its maximum **tilt** position.
- Secure the extra locking bar with a 6 mm retaining pin or bolt**.**

Returning the cab to its normal position

- Carefully remove the 6 mm retaining pin from the **lock** position and insert it in the **storage** position approximately 15 cm (6 inches) down the locking bar.
- Turn the lever on the hydraulic pump to the **down** position, about 1/4 turn anti-clockwise to the stop (arrow down).
- Carry out a final check to ensure that no loose objects have been left under the cab.
- Pump the cab down to its lowest position.
- **Keep pumping until pump resistance is felt!**
- Refit and secure the safety lock bolt.
- Return the cab tilt bar to the **storage** position.
- The lever on the hydraulic pump must be in the **down** position (arrow down) when driving.

7.2.2 Electric cab tilting (optional)

The electric cab tilting system is identified by the electrical box with 2 pushbuttons beneath the cab on the driver's side.

NOTICE

The electric pump tilt system works only when the electrical main switch is set to the ON position.

Tilting the cab up

- Push the **UP** button to tilt the cab. The cab will rise automatically.
- Pump the cab until it has reached its maximum **tilt** position.
- Secure the extra locking bar with a 6 mm retaining pin or bolt**.**

⚠ WARNING

Ensure the cab is fully tilted before carrying out any work under it (the cab must be tilted beyond its balance position). An additional locking bar can be fitted as an optional extra, and must be secured with a 6 mm retaining pin or bolt.

Returning the cab to its normal position

- Carefully remove the 6 mm retaining pin from the **lock** position and insert it in the **storage** position approximately 15 cm (6 inches) down the locking bar.
- Carry out a final check to ensure that no loose objects have been left under the cab.
- Push the **DOWN** button to lower the cab to its lowest position.
- **Keep pushing the DOWN button until pump resistance is audible!**
- Refit and secure the safety lock bolt.

WARNING

Stay away of the cab when the cab is tilted to its lowest position.

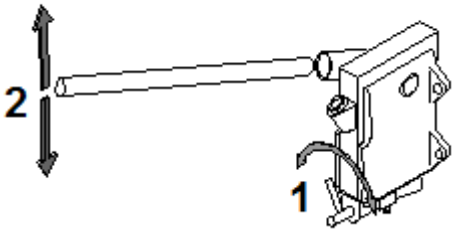
The electrical pushbutton for cab tilting must be accessed via the chassis to eliminate any injury.

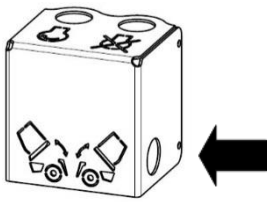
7.2.3 Electric/hydraulic cab tilting (optional)

The electric/hydraulic cab tilting system can be distinguished by the manual hydraulic pump and the electrical box with 1 pushbutton on the vehicle.

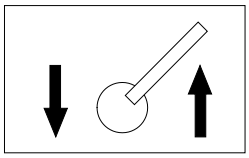
NOTICE

The electric pump tilt system works only when the electrical main switch is set to the ON position.





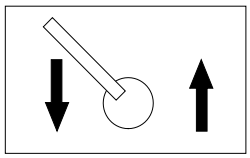
Tilting the cab up



- Move the lever on the hydraulic pump to the **up** position, about 1/4 turn clockwise to the stop (arrow up).
- The system can be operated electrically by pressing the pushbutton (**2**). The cab will rise automatically. The system can still be operated manually by pumping the cab with the manual hydraulic pump (**2**).
- Pump the cab until it has reached its maximum **up** position.
- Secure the cab with the locking bar with a 6 mm retaining pin or bolt**.**

Returning the cab to its normal position

- Carefully remove the 6 mm retaining pin from the **lock** position and insert it in the **storage** position approximately 15 cm (6 inches) down the locking bar.



- Move the pump lever on the hydraulic pump to the **down** position, about 1/4 turn anti-clockwise to the stop (arrow down).
- Carry out a final check to ensure that no loose objects have been left under the cab.
- Pump the cab down or push the pushbutton to lower the cab to its lowest position.
- **Keep pumping until resistance is felt or keep pushing the pushbutton until pump resistance is audible!**
- Refit and secure the safety lock bolt.
- Return the cab tilt bar to the **storage** position.
- The lever on the hydraulic pump must be in the **down** position (arrow down) when driving.

WARNING

Make sure that all staff is kept well clear of the cab during the lowering procedure.

The electrical pushbutton for cab lowering must be accessed via the chassis to eliminate the danger of injury.

7.2.4 Maintenance of cab tilting system

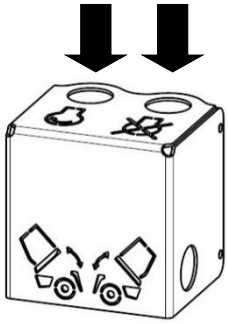
Cab tilt pump
Check the oil level at every lubrication service. Always check the oil level with the cab down. It should be possible to see the oil level in the filling hole. When the oil level is too low, top it up with the same type of hydraulic oil as already used in the system.

Bleeding the tilt system
Move the hydraulic valve to the open position (down position).
Remove the combined filler/level plug and pump the lever, which will automatically bleed the air from the hydraulic system.
Refit the combined filler/level plug.

7.3 Starting and stopping the engine from under the cab (optional)

A start/stop box can be fitted under the vehicle cab as an optional extra.
It can be used to start or stop the engine when the cab is in the tilted position.

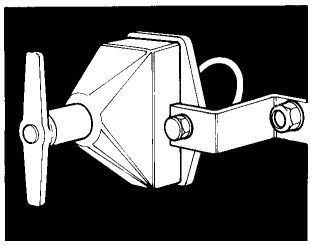
Procedure:
- Ensure the transmission is in neutral.
- Ensure the parking brake is applied.
- Leave the ignition on.
- The engine can be started using the **START** button.
- The engine can be stopped using the **STOP** button.



7.4 Electrical equipment

Set the main switch to the OFF position when you do any maintenance on the electrical system of the vehicle. If you remove the batteries, make sure to disconnect the negative terminal first.

7.4.1 Main switch



The main switch is located near the batteries. You can use it to connect or disconnect the power supply.
When the tractor is not in operation, do set the main switch to the OFF position.

The engine will only start when the main switch is set to the ON position. Do not set the main switch to the OFF position when the engine is running!

CAUTION

If you set the main switch to the OFF position, the electrical system will still contain energy for approximately 5 minutes!

Wait 5 minutes to make sure that the equipment is de-energized completely before you do any maintenance on the electrical system of the tractor!

7.4.2 Emergency stop (optional)

An emergency stop switch can be mounted on the vehicle to stop the engine and to disconnect all electronics at once. This red switch can be installed on different positions (for instance inside the cab and/or under the step on either side of the vehicle).

The switch has a spring-loaded cover and is locked in the ON position. As soon as the cover is opened the switch can be set to the OFF position manually.

If one of the switches is set to the OFF position the engine is stopped and all the electronics are disconnected at once.

When there is an emergency and it is important to disconnect all the electronics, do the procedure as follows:

1. Open the cover of one of the emergency switches manually.
2. Set the switch to the OFF position manually (anti-clockwise rotation).
3. The engine will stop and all the electronics will be disconnected.

Make sure that the situation is safe before you set the switch to the ON position again. Do close the cover manually.

WARNING

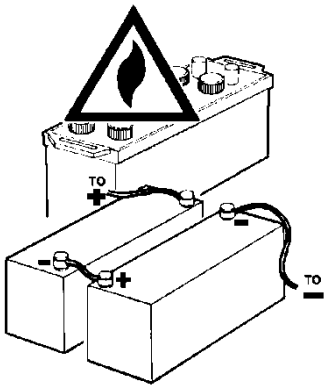
Do open the cover in case of an emergency only! As soon as the switch is set to the OFF position all the electronics are disconnected and the engine is stopped.

When any of the switches is activated all fault codes that are stored, will be erased.

Any ongoing cleaning processes of the exhaust system will be stopped. This can cause future service issues.

Make sure that the situation is safe before you set the switch to the ON position again.

7.4.3 Batteries



Check the condition of battery terminals and clamps. They should be greased and free from deposits. Clean the top of the battery casing if necessary.
Grease clamps with acid-free petroleum jelly (Vaseline).

Disconnect batteries before using a charger.
If starting with an auxiliary battery, take care to connect the positive (+) terminal of the battery to the positive (+) terminal of the starter and the negative (-) terminal of the battery to the negative (-) terminal of the starter.
The negative lead should always be disconnected first and connected last, e.g. when changing a battery. This avoids the risk of short circuits.

WARNING

- **Explosive gases can be released from a battery during charging.**
- **Do not expose cell vents to an open flame (risk of explosion).**
- **Remove all the screw caps from batteries before charging.**
- **Charge batteries in a well-ventilated area.**
- **Batteries contain sulphuric acid. In the event of contact with the skin or eyes, wash with copious amounts of water.**
- **Danger: electrical voltage.**

7.4.4 Fuses

When changing a fuse or circuit breaker, always replace it with one with the correct rating.

WARNING

Never fit a fuse with a higher rating.

If a fuse blows repeatedly, establish the cause before fitting a new fuse.

Any faults should be identified and rectified before resetting automatic (thermal) fuses.

The tractor is fitted with a printed circuit board (PCB) with fuses. The functions and ratings of the fuses are shown below. The fuses on the PCB are numbered accordingly:

Fuses on the printed circuit board

1	5 A	pre-heating intake air, relay parking brake
2	5 A	limiting lifting/lowering liftboom, fan (fresh air), sensor reverse MT
3	5 A	fifth wheel unlocking, indicator lights fifth wheel/liftboom
4	5 A	solenoid engine stop
5	5 A	supply 15+, control lights combi instrument
6	5 A	differential lock, gear shift blocking F/R
7	15 A	air-conditioning, heater
8	10 A	supply relay D+ /start inhibitor, 30+ master instrument
9	10 A	rotation warning light, working lights, air suspension
10	10 A	windscreen wipers/washers, horn switch
11	5 A	parking light right (10A optional)
12	5 A	parking light left, instrument illumination (10A optional)
13	5 A	hazard warning lights
14	5 A	dipped beam right
15	5 A	horn relay, supply switch lighting, direction indicators
16	5 A	full beams left
17	5 A	full beams right
18	5 A	dipped beams left
19	10 A	reversing light(s)/buzzer
20	5 A	brake lights
21	5 A	optional
22	5 A	optional
23	5 A	optional
24	5 A	optional

Fuses on the extra connection panel :

25	10 A	supply (30+) connector 625 (extra equipment)
26	10 A	supply (15+) connector 625 (extra equipment)
27 and higher see wiring diagram		
41	10 A	Supply (D+)

7.5 Headlamp

7.5.1 Lamp changing

Never touch a new lamp glass with your bare hands as grease, oil and other impurities can vaporise due to heat from the lamp and can damage the reflector.

7.5.2 Head lamp alignment

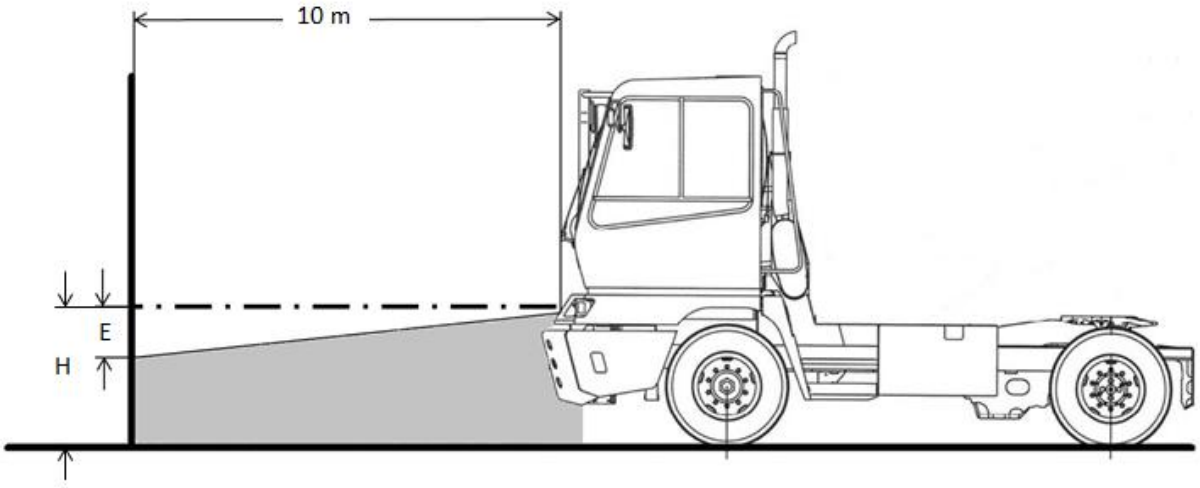
After replacement of the head lamps, any work carried out to the tractor's suspension or when bulbs have been changed, it's recommended to check the head lamp settings. The data plate inside the cab shows the correct inclination of the lighting cut-off line for an unladen tractor.
The alignment can be checked in 2 ways:

1. The most accurate method is by means of a workshop beam setter.
2. By some measurements, as follows:

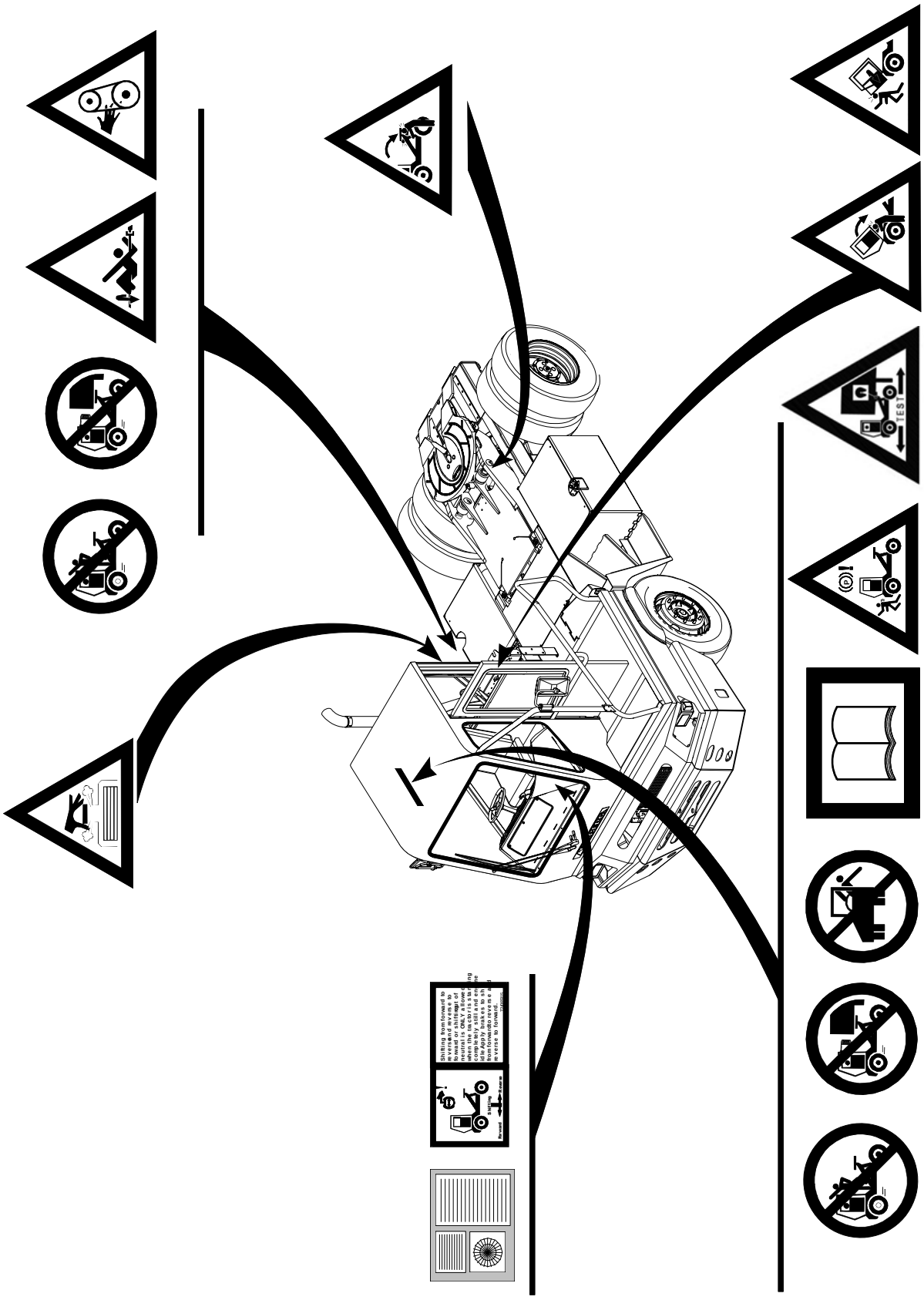
- Check that the tyres are inflated as specified and position the unladen tractor on a level surface in front of a light-coloured wall at a distance of 10 m.
- Switch on the dipped beams. Measure the vertical distance of the centre of the lamp units to the ground (=H) and mark this height on the wall.
- Check the data plate located inside the cab for the correct inclination of the lighting cut-off line (e.g. 1.5%).
- Measure the distance in cm the cut-off line inclines on the wall (=E).
- If necessary adjust the head lamps and repeat the procedure.

The percentage as stated on the data plate multiplied by 10 is the distance E.

For instance:
Inclination on the data plate = 1.5% → E = 1.5 x 10 = 15 cm



8 Warning stickers



Riding on the machine is forbidden (24063985)
Persons must not ride on the machine.

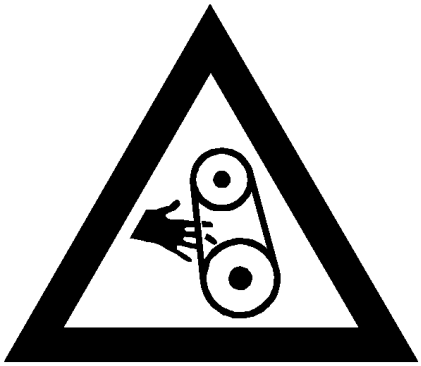
Beware of the door falling open when tilting the cab (24063994) (Optional side door)
Before tilting the cab, check that the door is securely locked. If it is not, there is risk of injury caused by the door falling open.

Leaning out of the cab while driving is prohibited (24064004)
Leaning out of the cab is prohibited while driving, as it is dangerous and severe injury could occur.

Take care when opening the radiator cap (24064013)
Opening the cap on the radiator or the expansion tank can be dangerous when the engine is hot and may cause burns. Allow the engine to cool down before removing a cap.

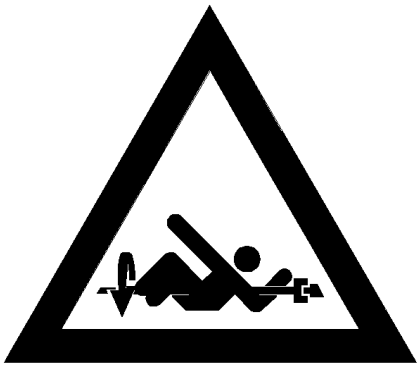
Do not stand under the lifting frame (24064022)
Standing under the lifting frame can be dangerous as the lifting frame and the fifth wheel could drop suddenly. Always take the necessary precautions to prevent the lifting frame from dropping.

Beware of rotating V-belt (24064031)
Rotating V-belts are dangerous. Keep clear of rotating V-belts and pulleys. Touching these parts can cause severe injury.



Take care when tilting the cab (24064040)
If the cab is tilted, check that it is locked before carrying out any maintenance work. Stay clear of the cab while it is returning to its normal position as it could drop suddenly.

Beware of rotating prop shaft (24064069)
Keep clear of rotating prop shafts and ensure that no clothing is hanging loose. Touching rotating prop shafts can cause severe injury.

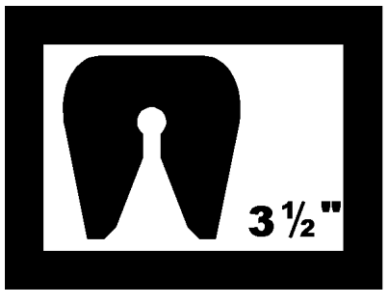


Driving without the brake hoses connected is prohibited (24064087)
Driving the tractor with unconnected brake hoses and lighting cables is prohibited.

Apply the parking brake before leaving the cab (24064945)
Always apply the parking brake before leaving the cab.

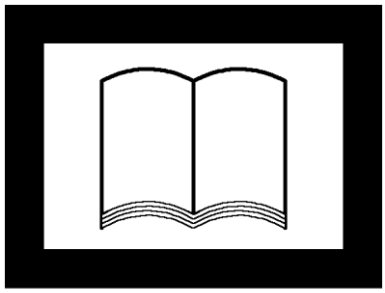
Carry out a pull and push test before attempting to move (24066662)
The red and green fifth wheel indicator lights are for indication only.
A pull and push test must be carried out before attempting to move any trailer.

Note: this tractor is equipped with a 3½" fifth wheel (24064096) (Optional)
This tractor is equipped with a fifth wheel with a 3½ " coupling.
Only trailers equipped with a 3½ " king pin may be coupled.



Always keep manual safety lock of 5th wheel in locked position when driving on public road. (24065896) (Optional)
If the vehicle is prepared for driving on public roads the 5th wheel is equipped with a manual safety lock. Always keep the manual safety lock of the 5th wheel in locked position when driving on public road.

Attention: read the driver's instruction manual first (24064151)
Read this manual carefully before using the tractor.

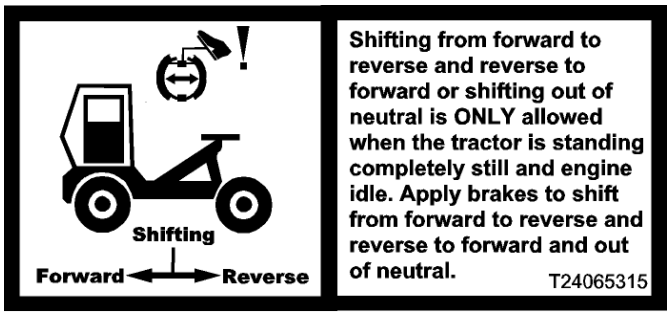


AdBlue (24066695).
Use the correct AdBlue according to the ISO 22241 specification for the engine.

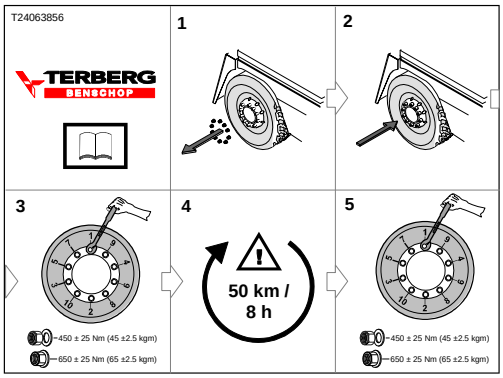
Diesel fuel (24066696).
Only use ultra low sulphur diesel fuel in accordance with standard EN590. The maximum sulpher content should 10 ppm.

Apply brakes to shift from forward to reverse and reverse to forward and out of neutral.(T24065315)

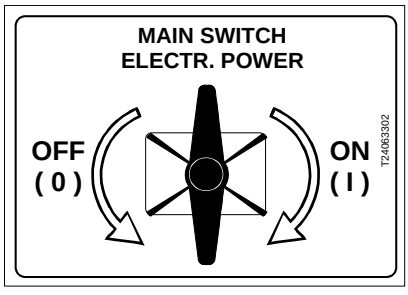
Shifting form forward to reverse and reverse to forward or shifting out of neutral is ONLY allowed when the tractor is standing completely still and engine idle. Apply brakes to shift from forward to reverse, reverse to forward and out of neutral.



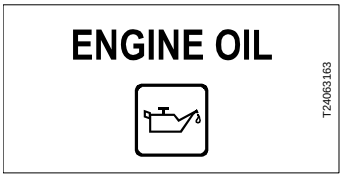
Retighten the wheel nuts after tyre change (T24063856)
After a tyre change or new vehicle delivery it is absolutely necessary to tighten the wheel nuts in the correct order after maximum 50 kilometers or 8 hours of operation.



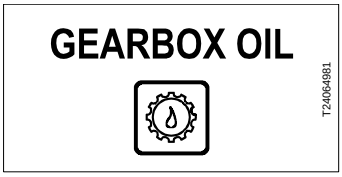
Main electrical power switch (T24063302)
Use the main switch to switch battery current on (by turning it clockwise) or off (by turning it anticlockwise).



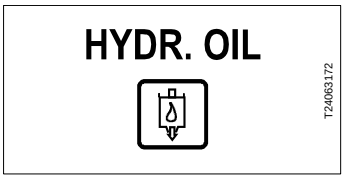
Engine oil (T24063163)
Level check point or filling point for engine oil.



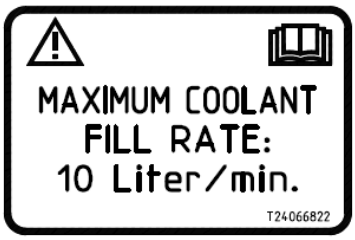
Gearbox oil (24064981)
Level check point or filling point for transmission oil.



Hydraulic oil (24063172)
Level check point or filling point for hydraulic oil.



Coolant
When coolant is changed or refilled, it is important that no air is trapped in the cooling system. Make sure that coolant is filled at a maximum rate of 10 liter/minute.



Warning: flammable substances (24066784)
Be careful as the tractor contains liquids, fuels etc. which are highly flammable.

Parking the tractor inside is prohibited overnight (24066785)
Do not park the tractor inside overnight as calamities can occur.

Do not use fire or a source of ignition near the LNG tank or other components of the natural gas system (24066790).

Warning: maximum operating pressure 16 bar
The maximum delivery and operating pressure of the LNG fuel station is 16 bar.

Do not step on this surface (24066843)
It is not safe to walk or stand on the surface the sticker is placed. It can either be slippery or not strong enough to stand on.

Hot surface. Do not touch! (T24066858)