

OPERATION MANUAL



YTxx3

Yard Tractor



Document: TD2886-05EN
Date: 2023-02

MANUFACTURER OF SPECIAL VEHICLES

Change history

Version	Description	Chapter
05	Changed: Permissible loads	2.7
	Changed: Display Symbol overview	4.4
04	Added: option Tyre Pressure Monitoring (TPMS)	7.13
	Added: Fifth wheel height calibration	7.7.1
	Changed: Coolant level	7.5
	Changed: Couple & Uncouple a trailer	6.8.2
03	Added: Additional options	2.9
02	Changed: Exhaust particle filter	4.4

Contents

1	Introduction.....	8
1.1	How to use this document	8
1.2	Abbreviations and phrases	9
1.3	General lay-out of the tractor	10
2	Safety	11
2.1	General.....	11
2.2	Warning messages.....	11
2.3	Graphical symbols	12
2.4	Instructions for safe use.....	12
2.5	Safety and warning stickers.....	13
2.5.1	Safety stickers in the cabin	13
2.6	Stickers on the vehicle.....	14
2.7	Permissible loads	19
2.7.1	Permissible loads on ramps.....	20
2.8	Safety regulations & warnings	20
2.8.1	Before driving off	20
2.8.2	While driving	20
2.8.3	While driving on ramps	21
2.8.4	Other warnings	21
2.8.5	Emergency procedures	22
2.8.6	Jack-knifing.....	22
2.9	Additional safety measures (optional).....	23
3	Cabin and operating components	24
3.1	Enter and leave the tractor	24
3.1.1	Open and close the door	25
3.1.2	Release the door from the storm anchor	26
3.2	Seats	27
3.2.1	Driver's seat - ISRI.....	27
3.2.2	Steering wheel adjustment (optional)	30
3.2.3	Passenger seat (optional).....	30
3.3	Seat belt	31
3.3.1	Usage	31
3.3.2	Releasing.....	31
3.4	Radio (optional)	32
3.5	Airconditioning and airflow	33
3.5.1	Variants	33
3.5.2	Controls	33
3.5.3	Operation tips	35
3.5.4	Air blower (optional).....	35
3.6	Instruments and controls	37
3.7	Parking brake lever.....	37
3.7.1	Operation.....	38
3.7.1	Parking brake test (optional).....	38
3.7.2	Trailer brake lever (optional).....	38
3.7.3	Driver operating console.....	40

3.7.4	Combined turn indicator, main/dipped beam, flash, horn and wipers stalk.....	41
3.7.5	Fifth wheel controls	42
3.7.6	Ignition key switch (optional)	43
3.7.7	Terberg Connect® (optional).....	44
3.7.8	Remote mirror control (optional).....	45
3.8	Switches.....	45
3.8.1	Rear wiper - speed 1 & 2 (optional).....	45
3.8.2	Rear wiper - interval (optional)	45
3.8.3	Rear fog light (optional).....	45
3.8.4	Work light (optional)	46
3.8.5	Vehicle lighting	46
3.8.6	Rotating beacon	46
3.8.7	Start regeneration	46
3.8.8	Stop or prevent regeneration.....	46
3.8.9	Hazard warning lights.....	47
3.8.10	Mirror heating (optional)	47
3.8.11	Rear window heating (optional).....	47
3.8.12	Electric window (optional)	47
3.8.13	Reverse warning buzzer (optional).....	48
3.8.14	Rear axle differential lock (optional)	48
3.8.15	Air suspension pressure release (optional)	49
3.8.16	Fifth wheel height override (optional)	50
3.8.17	Fifth wheel unlock	50
3.8.18	Additional hydraulics (optional)	51
3.8.19	Additional hydraulics (optional)	51
3.8.20	Additional horn (optional)	51
3.9	Additional warning lights outside the DIM.....	51
3.9.1	Trailer stand-by (optional)	51
3.9.2	Trailer steer angle too large (optional)	51
3.9.3	Trailer down (optional)	51
3.9.4	Trailer at ride height (optional)	52
3.9.5	Exhaust system error (optional)	52
3.9.6	Hydraulic system warning (optional)	52
3.9.7	Trailer length (optional)	52
3.9.8	Trailer system (optional).....	52
3.9.9	Central greasing system (optional).....	53
4	Driver Information Module (DIM) description	54
4.1	Dashboard symbol list.....	54
4.2	Operating components.....	54
4.3	Operation of the DIM.....	56
4.3.1	Initialisation and Start screen	56
4.3.2	Screen navigation icons	56
4.3.3	Display settings.....	57
4.3.4	Specific view selection function.....	58
4.3.5	Specific view screens.....	59
4.3.6	Important error messages	59

4.3.7	Other important vehicle information	61
4.3.8	Icons and screens for important features	61
4.3.9	Illumination	62
4.3.10	Menu structure.....	62
4.3.11	Password-protected pages.....	62
4.3.12	Start-up page: engine oil level	62
4.4	Display Symbol overview.....	63
5	Digital tachograph (optional)	67
5.1	Start of shift	67
5.2	End of shift.....	67
5.3	Possible activities	67
6	Driving the vehicle	68
6.1	Drive instructions	68
6.2	Drive safe and durable.....	68
6.3	Drive economic.....	68
6.4	Before driving	69
6.5	Starting the engine	69
6.6	Stopping the engine.....	70
6.7	Shifting and gear changes	70
6.7.1	Shifting from neutral (N) to drive (D) or reverse (R).....	70
6.7.2	Shifting from drive or reverse (D or R) to neutral (N)	70
6.7.3	Shifting from drive (D) to reverse (R) and vice versa.....	70
6.8	Tractor-trailer (un)coupling	71
6.8.1	Use of the fifth wheel lifting system	71
6.8.2	Couple a trailer	72
6.8.3	Perform Push-Pull test.....	72
6.8.4	Uncouple a trailer	73
7	Periodic checks and maintenance	75
7.1	The driver's responsibility	75
7.2	Fuel (diesel oil)	75
7.3	Engine oil level	76
7.4	Transmission oil level	76
7.5	Coolant level.....	76
7.6	Hydraulic level	77
7.7	Fifth wheel	77
7.7.1	Fifth wheel height calibration	78
7.8	Air tanks and air dryer.....	80
7.9	Instruments and lighting.....	81
7.10	Driver's seat and mirrors.....	81
7.11	Windscreen washers	81
7.12	Wheels and tyres.....	81
7.13	Tyre Pressure Monitoring System display, TPMS (optional).....	81
7.13.1	Activation.....	82
7.13.2	Operation.....	82
7.13.3	Settings	82
7.14	Tyre pressure and wheel load	83

8	Repair and maintenance	85
8.1	Towing or pushing.....	85
8.2	Cabin tilting	86
8.2.1	Before tilting	86
8.2.2	Operating components.....	87
8.2.3	To tilt the cabin with the hydraulic hand pump	88
8.2.4	To return the cabin to its normal position	88
8.2.5	To turn the cabin backward.....	90
8.2.6	To tilt the cabin halfway.....	90
8.2.7	To tilt and to lower the cabin electrically (optional).....	91
8.3	Tractor cleaning	92
8.3.1	High pressure washing.....	92
8.3.2	Cabin washing.....	93
8.3.3	Washing upholstery.....	94
8.3.4	Remove stains	94
8.3.5	Maintenance of steel rims	94
8.4	Changing wiper blades.....	95
8.5	Paintwork damage	95
8.5.1	Touch up small paint damage	95
8.5.2	Underlying metal damaged:	96
8.6	Electrical equipment.....	96
8.6.1	Batteries.....	97
8.6.2	Fuses, relays and converter	98
8.6.3	Fuses	98
8.6.4	Relays and converter	99
8.7	Headlamp.....	100
8.7.1	Light bulb replacement.....	100

1 Introduction

1.1 How to use this document

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 tractor will operate safely if the warnings, notices and instructions provided in this manual are observed.

This manual is not intended to be a technical guide, nor is it intended to make the reader an all-round tractor 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 performance you can expect from it.

Because of the wide range of engines and transmissions available, a separate engine and transmission booklet is 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.

MANUFACTURER

Visitor address:

Terberg Bens chop B.V.
Oranje Nassaustraat 10
NL-3405XK BENSCHOP
The Netherlands.

Phone: +31 348 459 211

E-mail: info@terbergbens chop.nl

Postal address:

P.O. Box 2
NL-3405ZG BENSCHOP
The Netherlands.

Internet address:

www.terbergbens chop.nl

Terberg Bens chop B.V. reserves the right to make changes without prior notice.

These are the original instructions. The English language is binding. Request your language if it is missing.

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:

VIN: XLW.....

Year of manufacture:

Engine:

Transmission:

Front axle:

Rear axle:

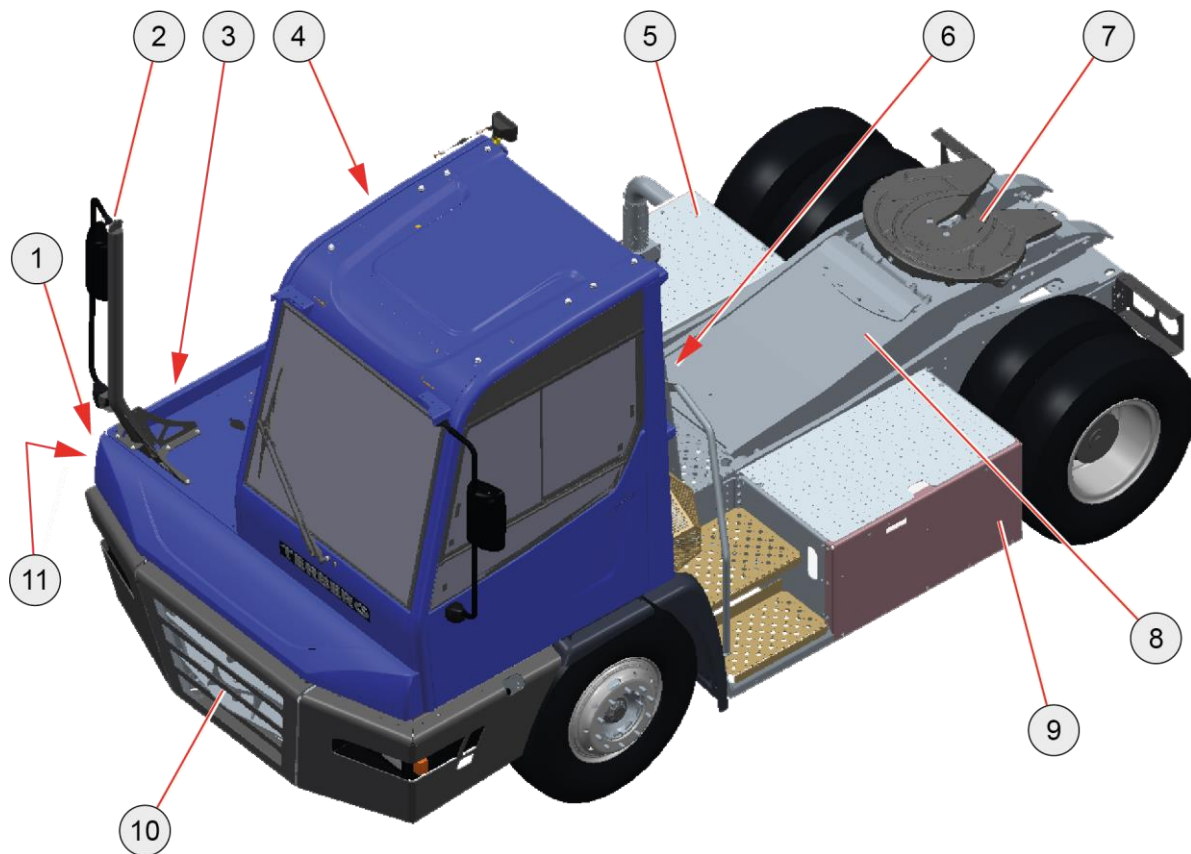
Fifth wheel type:

Tyres:

1.2 Abbreviations and phrases

AdBlue:	Known as Diesel Exhaust Fluid (DEF), Urea or (in the USA): AIR1.
DIM:	Driver Information Module (part of the dashboard).
YTxx3:	Yard Tractor Central Controller 3 rd gen. Primary controller in the new electrical architecture.
ETRTO:	European Tyre and Rim Technical Organization.
GVW:	Gross Vehicle Weight.
GCW:	Gross Combination Weight.
VIN:	Vehicle Identification Number.
Terberg Connect:	A telematics solution for transferring data from vehicle to server.
SCR:	Selective Catalytic Reduction.

1.3 General lay-out of the tractor



Pos.:	Description:
1	Main switch.
2	Rear view mirror.
3	Batteries.
4	Cabin entrance.
5	Fuel tank.
6	Trailer connections.
7	Fifth wheel.
8	Lifting frame.
9	AdBlue tank.
10	Draw bar pin.
11	Cabin tilting system.

2 Safety

2.1 General

Important
Read this document carefully before use
Keep for future reference

2.2 Warning messages

DANGER



Indicates a potentially and imminently hazardous situation which, if not avoided, will result in death or serious injury.
 All DANGER notifications will be indicated with this RED symbol.

WARNING



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
 All WARNING notifications will be indicated with this ORANGE symbol.

CAUTION




Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
 All CAUTION notifications will be indicated with this YELLOW symbol.

NOTICE



Notices will be used to show special procedures or point out important facts. Notices will also designate important information regarding this manual and its use.
 All NOTICE notifications will be indicated with this BLUE symbol.

2.3 Graphical symbols

DAMAGE	
	<p>In this manual you will see DAMAGE notices. Notices will be used to show special procedures or point out important facts. DAMAGES will also designate important information regarding this manual and its use.</p> <p>All NOTICE notifications will be indicated with this ORANGE symbol.</p>

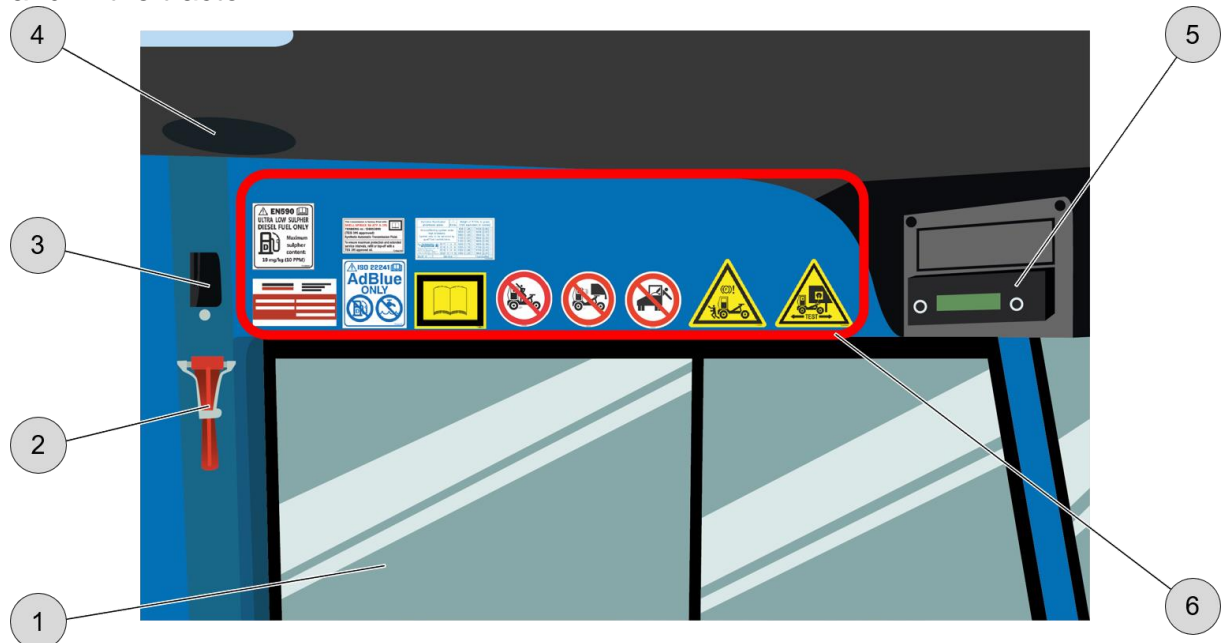
2.4 Instructions for safe use

- To ensure safe operation of the tractor, read this manual carefully before driving the tractor. The instructions, warnings, messages and notices on the stickers and in the manual must always be observed.
- Yard tractors are designed for the frequent moving of loads using trailers. The yard tractor is intended primarily for moving trailers using a fifth wheel system that is movable in vertical sense.
- 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 data plates showing information about maximum permissible axle and trailer loads are located inside the cabin.
- 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 tractor and the nature of the work, the training should cover all equipment and all tasks that must be done by the driver.
- Terberg Benschop recommends that the driver wears at least safety clothing that enhances driver visibility and safety shoes with reinforced toe caps and soles.
- The minimum clothing requirements depend on local site regulations.

2.5 Safety and warning stickers

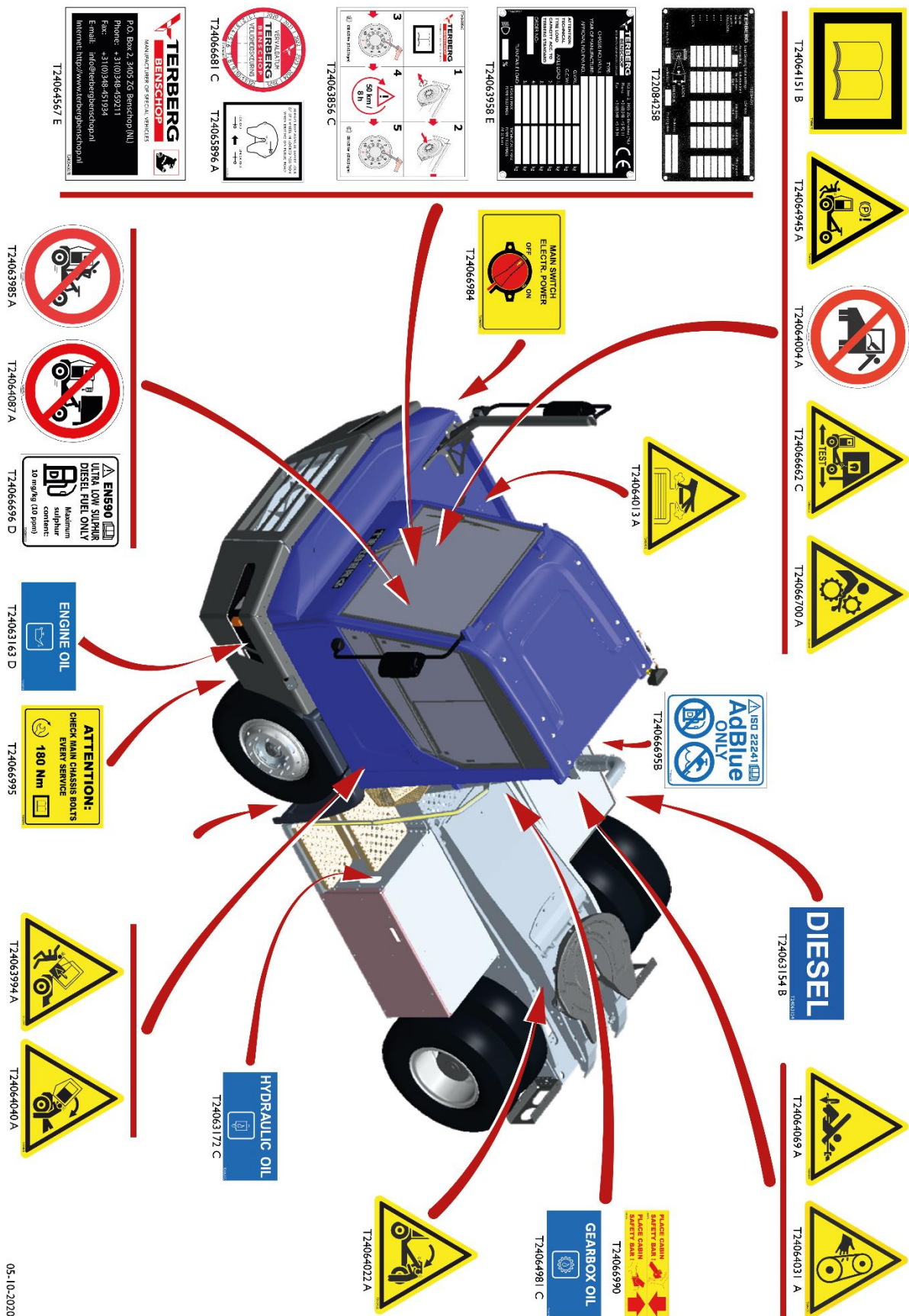
2.5.1 Safety stickers in the cabin

Always refer to the safety adhesives inside the cabin and on all the other locations on and in the tractor.



Pos.	Type	Description
1	Side window	Side window of the tractor, slide to open and can also be used as an emergency exit.
2	Safety hammer	Safety hammer to smash in the window as an option to escape the tractor in case of emergency.
3	Coat hanger	Hanger clip to store a coat.
4	Speaker	Audio speaker for the tractor's radio system.
5	Radio	
6	Sticker location	Sticker location inside the cabin to point out safety to the driver.

2.6 Stickers on the vehicle



05-10-2020

Standing on a moving tractor is prohibited. (T24063985)

Persons must not ride on the tractor.

**Leaning out of the cabin while driving is prohibited (T24064004)**

Leaning out of the cabin is prohibited while driving.

**Do not drive tractor and trailer with disconnected brake hoses. (T24064087)**

Driving the tractor with disconnected brake hoses and lighting cables is prohibited.

**Beware of the door that may swing open during tilting of the cabin (T24063994) (Optional side door)**

If the side door is not properly locked it can swing open when the cabin is tilted and hit and seriously injure a person.

**Never open the radiator cap when the radiator is hot (T24064013)**

Opening the cap on the radiator or the expansion tank is dangerous when the engine is hot as coolant can escape at high pressure and temperature.

**Do not stand under the hydraulic lift frame (T24064022)**

Beware of the lift frame and keep out of its working zone.



Beware of rotating belts (T24064031)

Rotating V-belts are dangerous. Keep clear of rotating V-belts and pulleys.



Take care when tilting the cabin (T24064040)

If the cabin is tilted, check that it is locked before carrying out any maintenance work. Keep clear of the cabin while it is tilting.



Beware of rotating propeller shaft (T24064069)

Keep clear of rotating propeller shafts and ensure that clothing is not hanging loose.



Apply the parking brake before leaving the cabin (T24064945)

Always apply the parking brake before leaving the cabin.



Carry out a pull and push test before attempting to move (T24066662)

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.



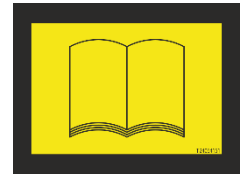
This tractor is equipped with a 3½" fifth wheel (T24064096) (optional)

This tractor is equipped with a fifth wheel with a 3½ " coupling. Only trailers equipped with a 3½ " king pin may be coupled.



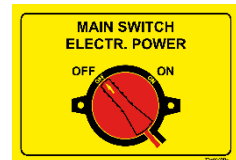
Read the operation manual (T24064151)

Read this manual carefully before using the tractor.



Main electrical power switch (T24063302)

Use the main switch to turn on the battery power (by turning it clockwise) or off (by turning it anticlockwise).



Check torque chassis bolts (T24066995)

Check the chassis bolts torque (180 Nm), as described in the Maintenance manual, Chapter 18.



AdBlue only (T24066695)

Use only AdBlue according to the ISO 22241 specification in the AdBlue tank.



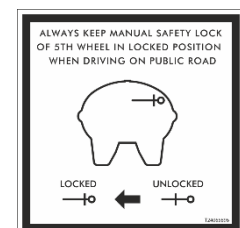
Ultra-Low sulphur Diesel Fuel only (T24066696)

Only use ultra-low sulphur diesel fuel in accordance with standard EN590. The maximum sulphur content must not exceed 10 ppm.



Fifth wheel manual safety lock (T24065896) (optional)

If the tractor is prepared for driving on public roads the fifth wheel is equipped with a manual safety lock. Always keep the fifth wheel manual safety lock in locked position when driving on public roads.



Engine oil (T24063163)

Level check point or filling point for engine oil.



Gearbox oil (T24064981)

Level check point or filling point for transmission oil.



Hydraulic oil (T24063172)

Level check point or filling point for hydraulic oil.



Coolant (T24066822)

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.



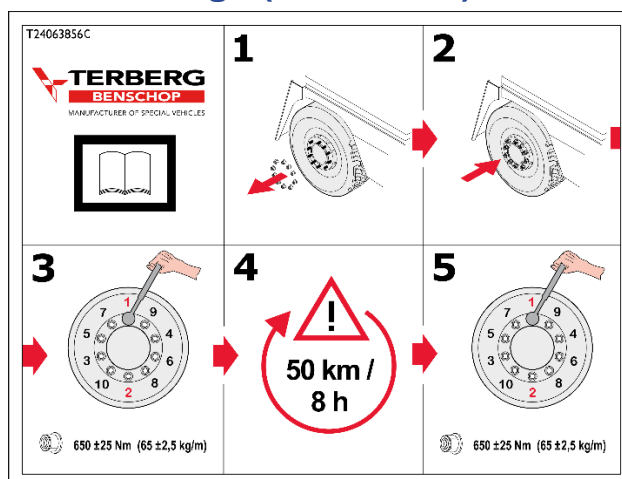
Place safety bar (T24066990)

After tilting the cabin, place the safety bar immediately as shown on both stickers.



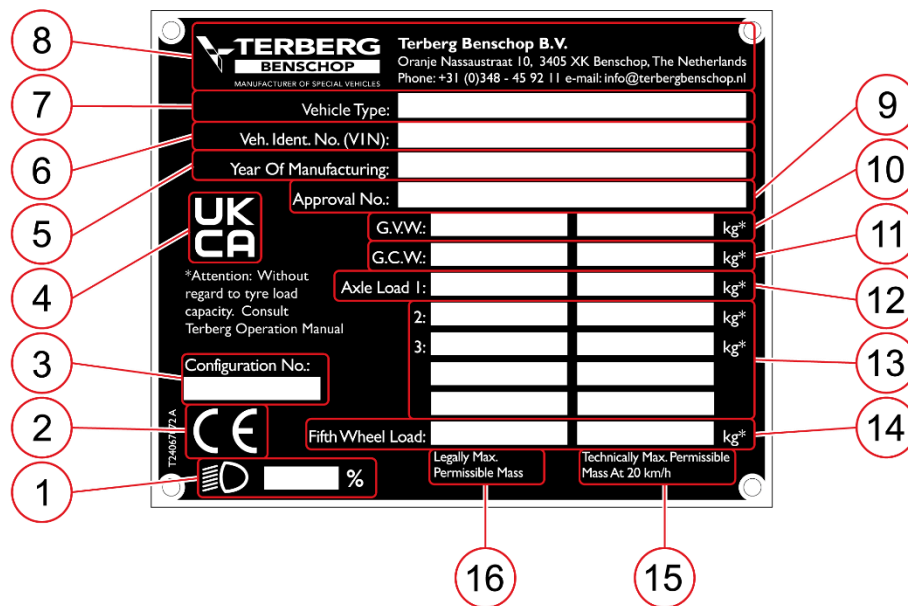
Retighten the wheel nuts after a wheel change (T24063856)

After a wheel change or new tractor delivery, it is mandatory to tighten the wheel nuts in the correct order after a maximum of 50 kilometres or after 8 hours of operation/driving, whichever occurs first.



2.7 Permissible loads

Inside the cabin the vehicle data plate is located with technical information, such as maximum **axle** loads.



Pos.	Type	Description
1	Headlamp inclination	Percentage of inclination of the headlamps.
2	CE marking	
3	Configuration number	Terberg internal unique vehicle ID number.
4	UKCA marking	
5	Year of manufacture	Year of build / manufacture.
6	VIN number	Vehicle Identification Number.
7	Type	Vehicle type.
8	Manufacturer	Name and address of the manufacturer.
9	Approval no.	Number of type approval for technical compliance.
10	GVW	Gross Vehicle Weight: Max. permitted total weight of vehicle at 20 km/h.
11	GCW	Gross Combination Weight: the maximum permitted weight of the combination of tractor + trailer(s).
12	Axle load 1	Maximum load on the front axle.
13	Other axle loads	Maximum load on other axles.
14	Turntable load	Maximum load on the fifth wheel.
15	Technical maximum mass	The maximum mass that is technically allowed, in this case at a maximum speed of 20 km/h.
16	Legally maximum permitted mass	Legally maximum permitted mass.

2.7.1 Permissible loads on ramps

Several factors have influence on the loads the tractor is subjected to, such as:

1. The gradient of the ramp.
2. The fifth wheel height.
3. The fifth wheel load.
4. The wheelbase.
5. The driving direction.
6. The type of roll trailer.
7. Front axle load.
8. Tyre size.

Because of this wide variety of conditions, generic numbers for maximum loads cannot be given, a guideline can be found in the section "Driving on ramps".

2.8 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.

2.8.1 Before driving off

- Check vehicle lighting.
- Never use a faulty tractor.
- Always apply the parking brake before leaving the cabin.
- Keep doors and windows closed during use to minimize the sound level inside the cabin and to minimize the power usage for the heater and air conditioning (especially for EV-vehicles).
- The air conditioning will only operate efficiently if all cabin windows and doors are closed.
- Keep the cabin floor free from loose objects and clean to prevent slipping, tripping and falling.
- Use the (optional) sun visor to prevent blinding by sunlight.
- Ensure that a clear field of vision is always maintained.
- Always wear the seat belt provided during operation.
- Always connect the trailer's brake hoses and lighting cables before driving off with a coupled trailer.
- Check visually that the tyres on the tractor and trailer are not damaged and inflated correctly.

2.8.2 While driving

- Always make sure that you are in driving position; in the driver's seat with the seat belt buckled up.
- Ensure that maximum permissible loads and speeds are not exceeded.

- Keep trailer height to a minimum, but high enough to provide sufficient clearance under the trailer and the load.

2.8.3 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 and be aware of restrictions imposed by the maximum permissible loads.
- Ramp speed should never exceed a fast walking pace.
- Drive steadily on ramps, avoid abrupt braking and acceleration.
- 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.

2.8.4 Other warnings

- The tractor must not be used for carrying passengers, either in the cabin or on the trailer, other than on the passenger seat (optional).
- Always use at least 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 much heavier.
- If possible, always keep both hands on the steering wheel.
- If the engine must stay on 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 must remain easily accessible.
- Do not place flammable materials near the exhaust system.
- Keep away from any hot components (e.g. the exhaust system).
- If you have to lean out of the window, 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.
- The usage of high-pressure cleaning water jets is prohibited on all electronic components, drive-line components, seals, covers, doors, windows, roof or any other area sensible for water intrusion.
- The parking brake must not be applied while the tractor is moving.
- However, the parking brake must be used as an emergency brake if the tractor's service brakes fail.
- The tractor must be maintained by trained personnel in accordance with the manufacturer's instructions.

2.8.5 Emergency procedures

This section describes the procedures for the driver / operator when an emergency situation occurs.

Emergency exit from the cabin

In the event of an emergency you must be prepared to exit the tractor in the safest possible manner.

- Drivers must be familiar with the methods of exiting their cabin.
- Doors must never be locked during operation; it must be possible to enter or exit the cabin quickly in the event of an emergency.

Possible exit points are:

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Via the driver's door. ■ Via the side window. | <ul style="list-style-type: none"> ■ Via the side windows by breaking the glass with the life hammer. ■ Via the roof hatch (optional). |
|--|--|

Emergency steering

In the event of a stopped engine or significant loss of hydraulic power, stop the tractor as soon as possible. Loss of engine power will result in failure of power steering.

Tyre failure

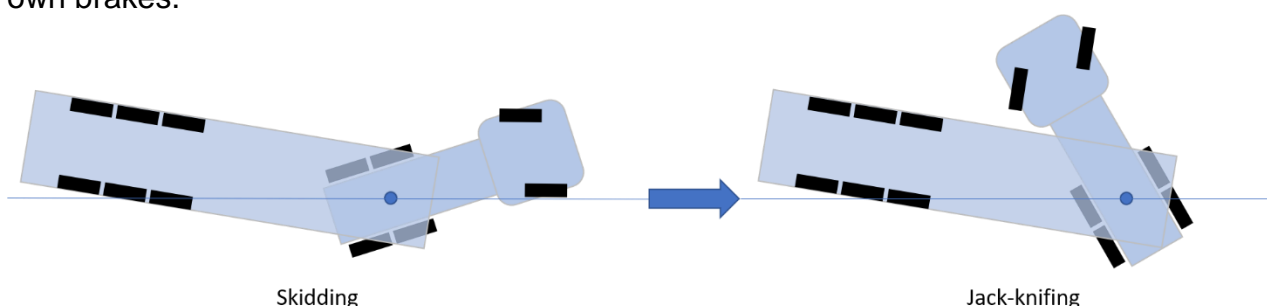
In the event of tyre failure, the driver must brace himself with both hands on the steering wheel. Try to control the tractor and stop immediately.

Fire

In the event of smoke or fire the tractor must be stopped immediately. Apply the parking brake, turn the ignition off and exit the tractor as soon as possible. All drivers must be familiar with procedures and site requirements in the event of fire.

2.8.6 Jack-knifing

Jack-knifing is the description of a trailer that "overtakes" the tractor in an uncontrolled manner. In most jack-knifing situations, the trailer and the tractor unit form a very sharp angle, which makes control of the vehicle assembly impossible. Jack-knifing is very dangerous and should always be prevented by driving carefully and always connect the air hoses of the tractor to the trailer so that the trailer has its own brakes.

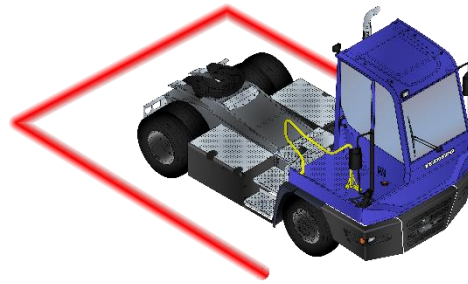


- Skidding means that a trailer starts to move sideways and the driver moves the tractor into that direction to prevent Jack-knifing.
- Jack-knifing means that the driver has not been able to correct a trailer that started to move sideways. The trailer takes over the direction, the driver cannot correct for the total movement nor direction of the vehicle combination.

2.9 Additional safety measures (optional)

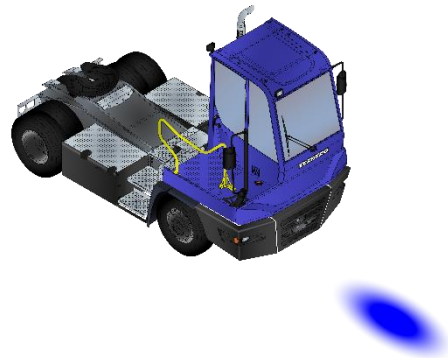
Pedestrian zone lighting (optional)

Red lines are projected to mark the prohibited area around the vehicle. This light operates whenever the ignition is in the ON position.



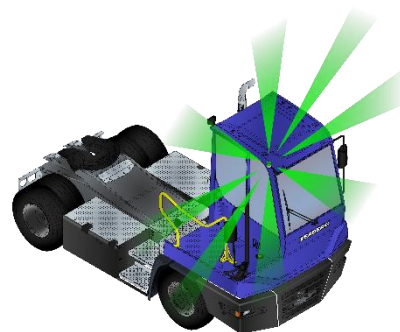
Pedestrian notification lighting (optional)

A blue spot is projected on the ground to notify pedestrians and other vehicles of movement of the tractor. This light operates whenever the ignition is in the ON position.



Seat belt notification light (optional)

A green light mounted on top of the cabin is illuminated whenever the ignition is in the ON position and the driver's seatbelt is fastened.



Reverse activated hazard lights (optional)

When the vehicle is shifted into reverse gear the hazard lights will automatically be activated.

3 Cabin and operating components

The cabin is the workplace of the driver and contains many switches and other devices to operate the tractor properly.

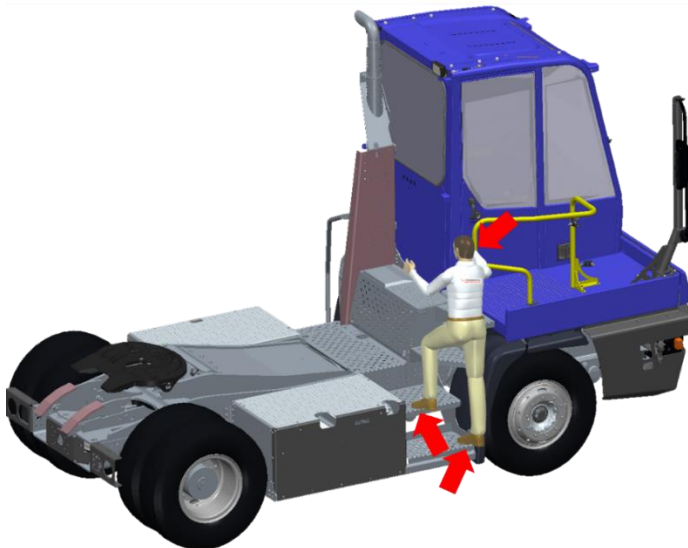
DANGER



Carefully read the following chapters before driving or operating the tractor.

3.1 Enter and leave the tractor

To ensure maximum safety, always take additional care when entering or leaving the tractor. Use the hand rail to ensure that at least two points of contact are always maintained. Only the hands rail and steps that are provided should be used to enter or leave the tractor.



A seat is provided in the cabin for one driver. When driving and operating the tractor, the driver should be on the seat with both hands on the steering wheel or the controls and wear the safety seat belt.

Passenger seat (optional):

The cabin can be equipped with a fold-down seat including a seat belt.

WARNING

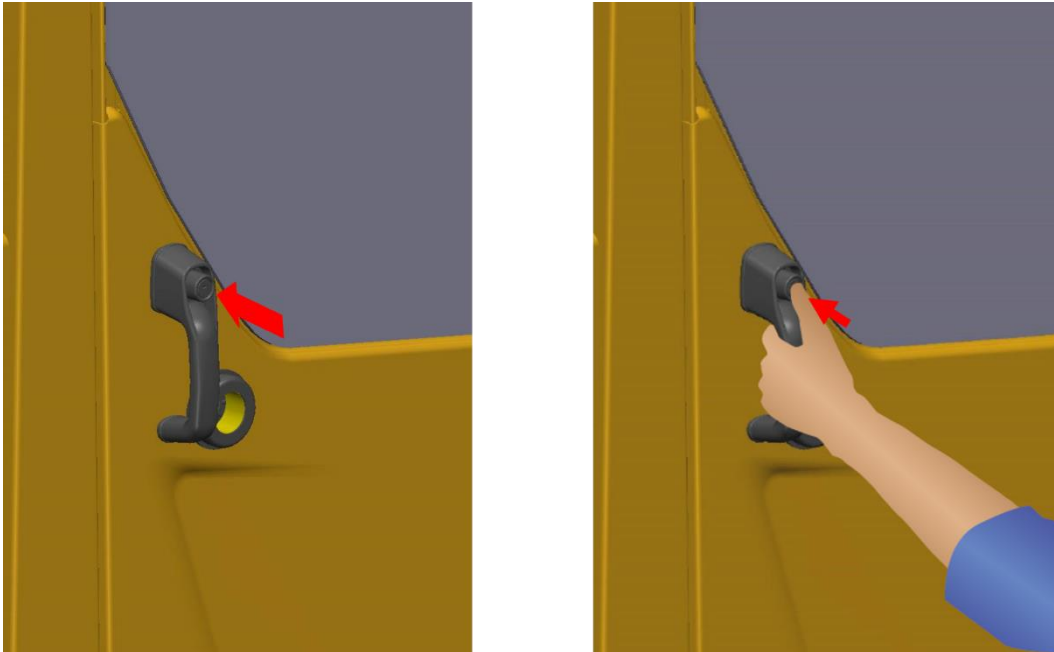


- Take additional care when entering the tractor to avoid personal injury.
- Be careful when the steps and decking are slippery.
- Use at least two and where possible three points of contact when walking/working on the tractor to eliminate the risk of slipping or falling.

3.1.1 Open and close the door

To increase safety at work, Terberg recommends the door to be closed at all times during operation.

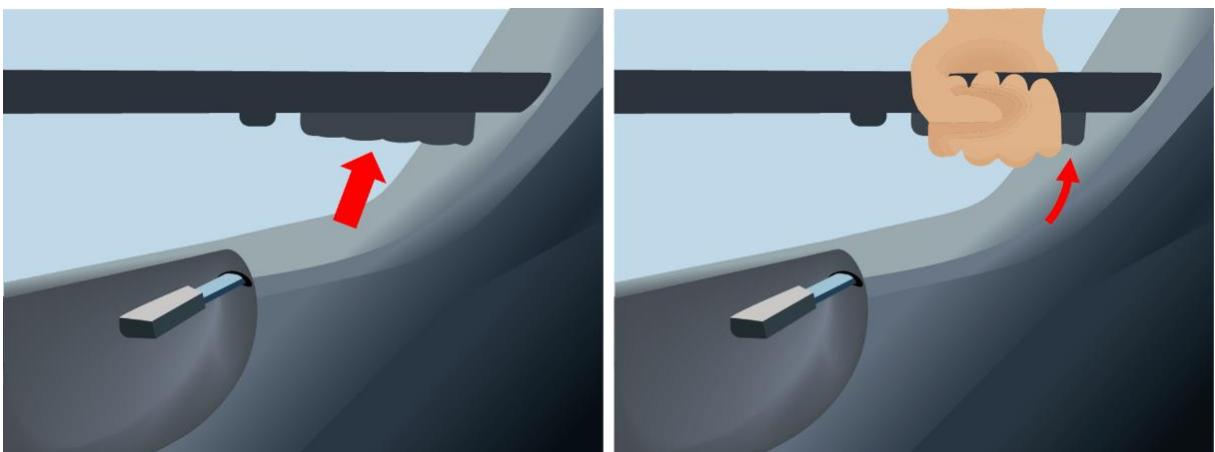
3.1.1.1 To open and close the door from the outside



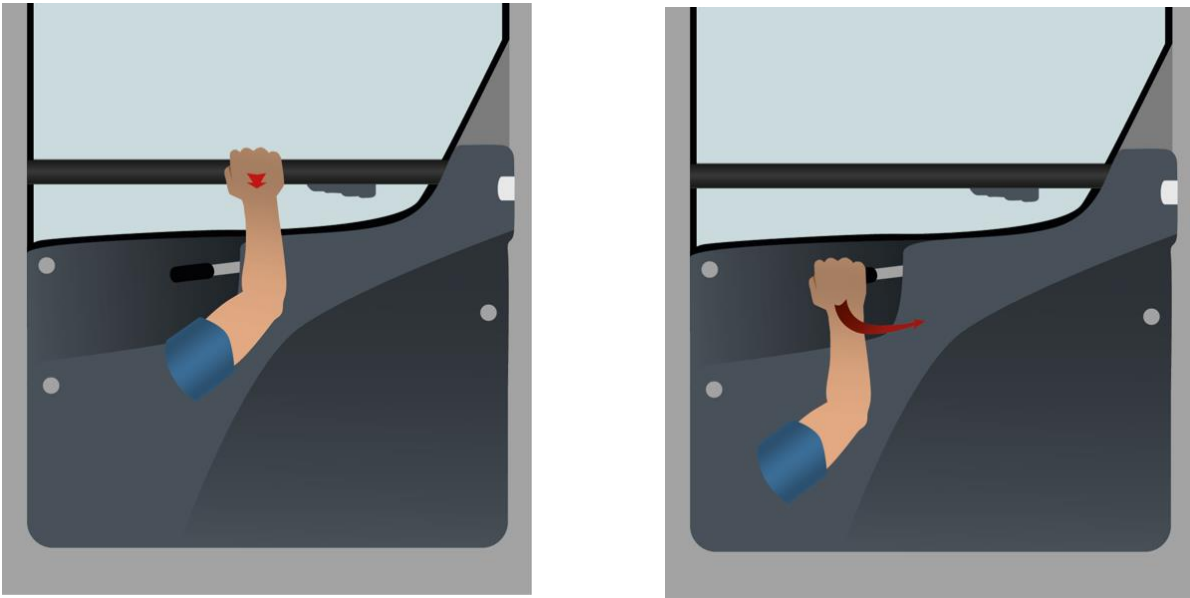
Open: Hold the door handle and press the knob with your thumb, then pull the handle towards you, the door will open.

Close: Hold the handle and firmly push the door until it is closed.

3.1.1.2 To open and close the door from the inside



Open: Squeeze the handle and open the door to leave the tractor.



Close: pull the horizontal bar to close the door.

3.1.2 Release the door from the storm anchor

Release: pull the lever inside the door and the door will become loose from the storm anchor.

WARNING



- Keep all objects and body parts clear of the door. Be careful of your hands and body parts while closing or opening the door.
- Do not open the door while the tractor is moving.
- Be careful not to bump your head while entering the cabin.

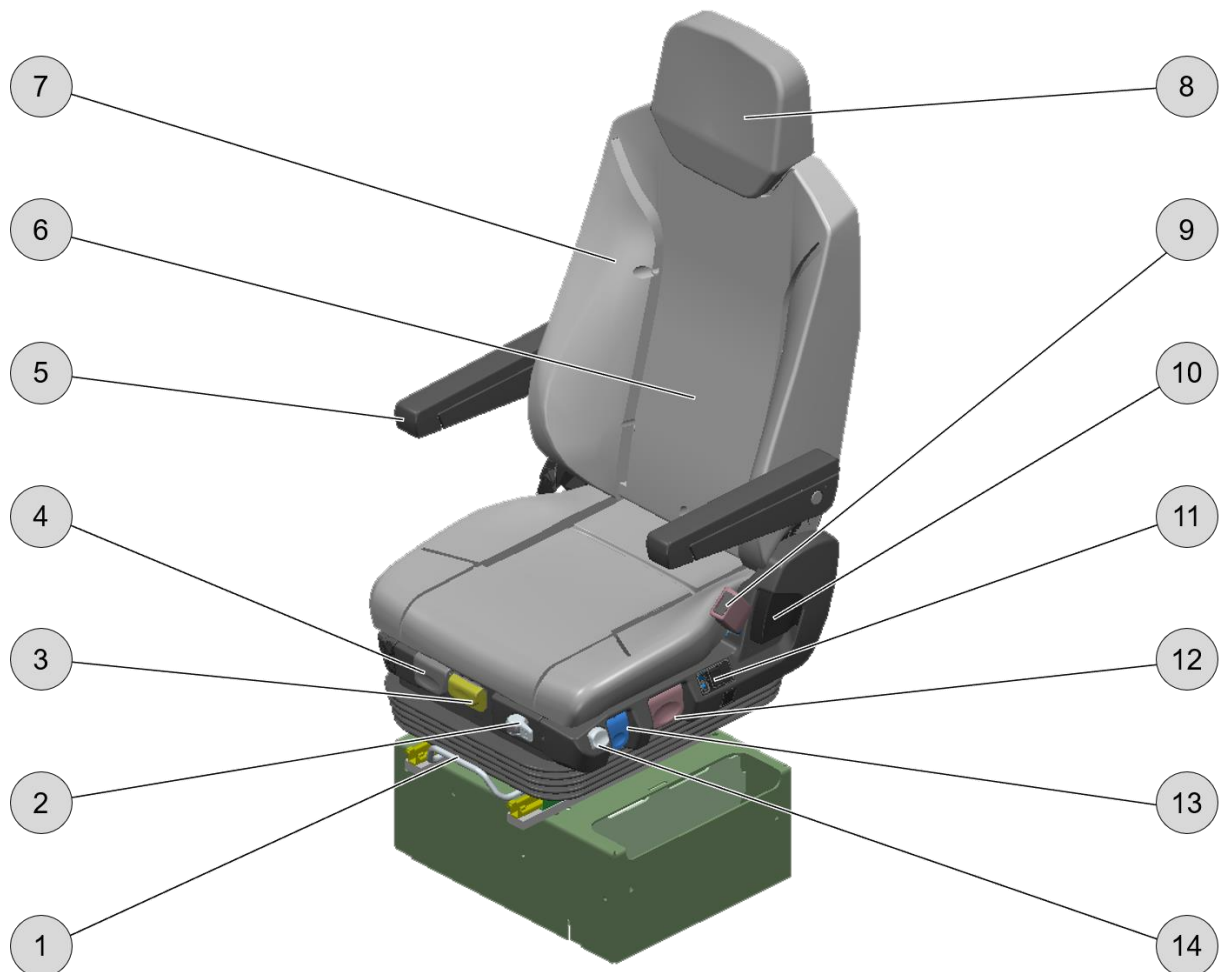
3.2 Seats

3.2.1 Driver's seat - ISRI

Correct adjustment of the driver's seat is important for operation, safety and comfort. The seat should be adjusted to the driver's personal requirements before driving off.

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

3.2.1.1 Seat controls ISRI 6860



Pos.	Type:	Description:
1	Handle	Lift and move the entire seat forwards and backwards. Release to lock in position.
2	Horizontal suspension	Lever to the: Right: suspension released. Left: suspension locked.
3	Seat cushion adjustment	Pull the lever and move the seat cushion forward and backward. Release the lever to lock the seat horizontal movement.
4	Tilt adjustment	Pull lever and adjust the tilt by applying or releasing weight on the front of the seat cushion area.
5	Arm rest	Armrest fixed to the seat and can be reclined.
6	Back rest	Adjustable back rest.
7	Side support	
8	Head rest	Adjustable headrest.
9	Buckle	Buckle to insert the safety seat belt.
10	Reclining	Control to move the backrest forward and backward.
11	Lumbar support	Switches that control the air pressure for lumbar support.
12	Height adjustment	Lever that controls the height of the seat.
13	Shock absorber	Dampens the air suspended seat, adjustable to driver specific comfort demands.
14	Lower seat	Switch that releases the air suspension and lowers the seat for easy exit and entrance.

Please Note that certain features shown below are optional and depend on the chosen seat variant.

3.2.1.2 Seat adjustments

The following descriptions give information about the seat adjustment controls (ISRI seat).

Seat height adjustment

The upper legs must be almost horizontal with the feet flat on the floor. Your upper legs must be properly supported by the seat.



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.



Seat distance adjustment

Press the throttle pedal gently and then adjust the seat distance to a preferred/desired position.



NOTICE



The legs must not be fully stretched when the accelerator or brake pedals are fully depressed.

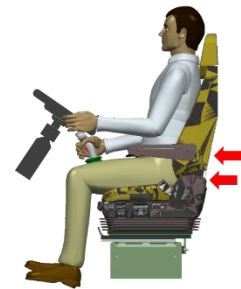
Adjust the back rest / Steering wheel

Press your shoulder against the back rest and hold your arm fully stretched on the steering wheel at 12 o'clock. Adjust the back rest to the preferred positions and maintain good visibility. When this adjustment is finished your shoulder must still be against the back rest and your arm must be fully stretched at 12 o'clock on the steering wheel. The back-rest 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.



Adjust the lumbar cushions (ISRI)

Use the 2 buttons highlighted here to inflate / deflate the 2 lumbar support cushions until your lower back is gently supported.



Adjust 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.



3.2.2 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.

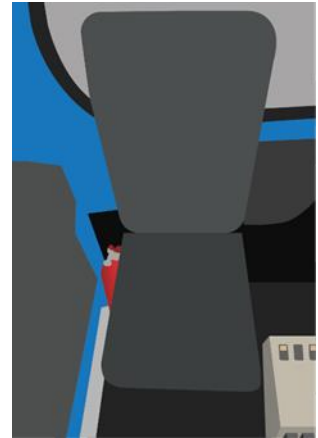
3.2.3 Passenger seat (optional)

As an option, a passenger seat can be installed in the cabin.

To enable the passenger seat, it must be retracted downwards from the vertical position.



Follow the procedures below to use the passenger seat.



Before using the passenger seat:

- Make sure the tractor is at a complete standstill with applied parking brake.
- Let the passenger enter the cabin and use the seat belt provided.
- Close the door.

3.3 Seat belt

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

3.3.1 Usage

Pull the belt carefully over the shoulder and/or hips. Check that it is not tangled or twisted. Secure it by sliding the metal 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 body.

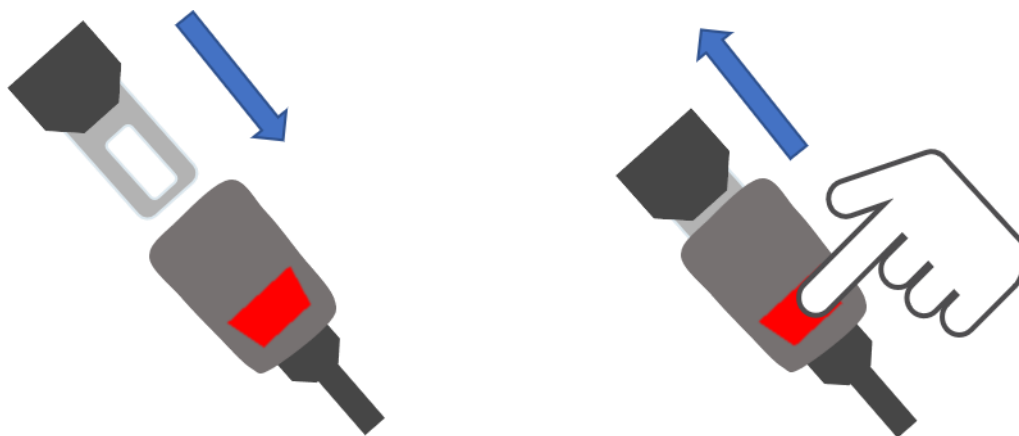
For maximum protection, avoid wearing the seat belt over voluminous clothing.



3.3.2 Releasing

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

The belt will lock when the belt is stressed / pulled quickly.



Fasten and unfasten the seat belt.

NOTICE



- The belt is intended for one person only.
- Do not draw the belt over 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 necessary, use only a detergent that will not affect the belt material.

WARNING



- **Always wear the seat belt while seated 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.**

The cabin complies to the requirements for roll-over protection structure. In case of a roll-over, the driver must remain at his seat. Only the seat belt will hold the driver at the seat during roll-over.

In case of a collision (when the tractor is stationary or driving) the seat belt will hold the driver at the seat.

3.4 Radio (optional)

Check that the radio is working correctly and is tuned to the correct frequency/channel for the site, before driving off. Never adjust the radio while driving. For more detailed information, see the radio manufacturer's operating manual.



WARNING

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

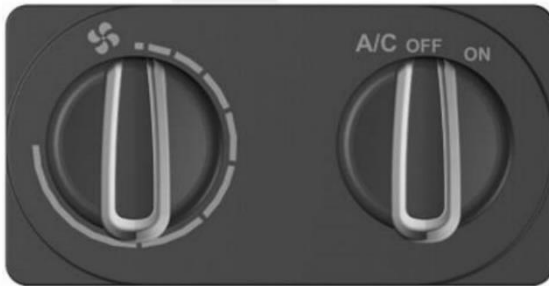
3.5 Airconditioning and airflow

3.5.1 Variants

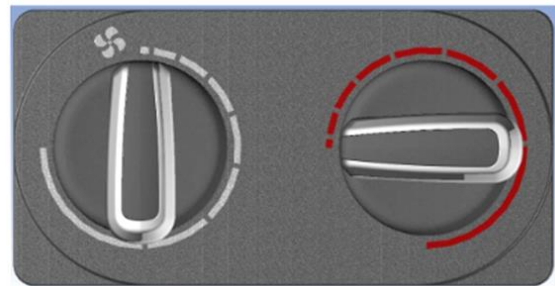
The variety of equipment level can be:

- Air Conditioning only.
- Heating only.
- Heating + Air Conditioning.
- Electronic Climate Control.

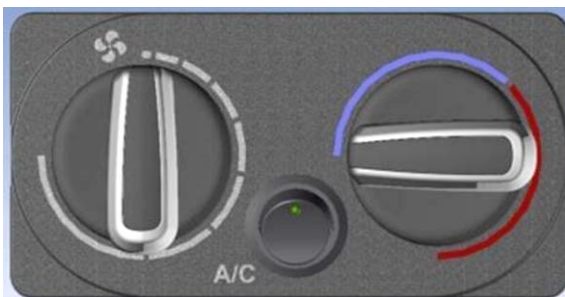
Air conditioning only



Heater only



Air conditioning and heater



Electronic Climate Control ECC (Option)

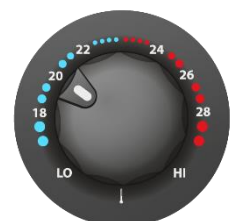


3.5.2 Controls

Temperature

Rotate the dial to control the interior temperature:

- Turn it anti-clockwise (towards **blue**) to reduce the temperature (**LOW**).
- Turn it clockwise (towards **red**) to increase the temperature (**HIGH**).



WARNING



DO NOT adjust the temperature in the cabin too high, this can lead to loss of concentration.

Blower speed

Rotate the dial to adjust the speed of the air flow:

- Turn clockwise to increase blower speed.
- Turn anti-clockwise to reduce blower speed.

Turning the dial to the most anti-clockwise position (noticeable click) switches the blower off.



Recirculation (only ECC)

Used to change between the intake of fresh outside air and recirculated cabin air. Operating the tractor for longer periods of time with the air recirculation mode active, can result in a low air quality and condensed windows.



Windscreen demisting

Press the button to rapidly defrost / demist the front windscreen. Make sure that there are no obstacles blocking the air flow from dashboard to the windscreen.

Make sure all vents are opened and pointed towards the windows.



Air conditioning

Press the button to activate the air conditioning. The indicator in the button will illuminate to show the system is active.



Cabin 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.



3.5.3 Operation tips

Hot climate

- Turn the air conditioning **ON**.
- Set the heating control to **LO**.
- Set the circulation control to **Recirculation** (the indicator on the button is on).
- Set the blower speed to maximum.



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

Moderate climate

- Turn the air conditioning **OFF**.
- Set the heating control to the desired temperature.
- Set the circulation control to **Fresh** (the indicator on the button is off).
- Set the blower speed as desired.



High humidity and demisting

Although ambient temperatures could be in comfortable, air humidity might reach unacceptable levels. The air conditioning system also functions as a dehumidifier.

- Turn the air conditioning **ON**.
- Set the heating control to the desired temperature.
- Set the circulation control to **Fresh** (the indicator on the button is off).
- Set the blower speed to medium.

Cold climate

- Turn the air conditioning **OFF**.
- Set the heating control to **HI** (maximum).
- Set the circulation control to **Recirculation** (the indicator on the button is on) for 5 - 10 minutes to ensure rapid heating.
- Set the blower speed to maximum.



When the desired cabin temperature has been reached, increase the fresh air content by setting the air circulation control to **fresh**. Set heating and blower speed as desired.

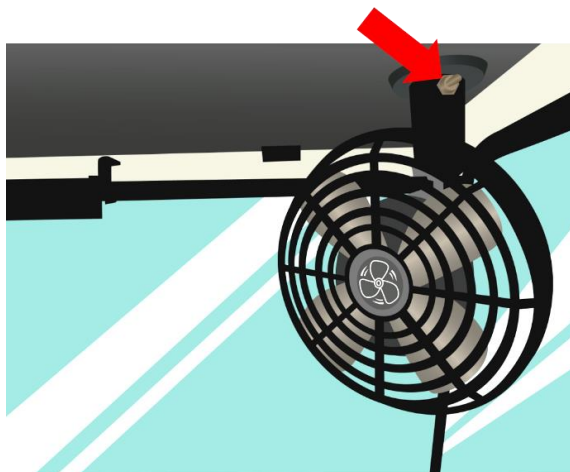
3.5.4 Air blower (optional)

This type of air blower is additional to the ventilation blower that is underneath the dash panel. In some situations, there are two of these additional ventilators installed in the cabin of the tractor.

Air flow speed is adjusted by moving the switch (arrow) at the foot of the fan.

This switch (see arrow) has three air flow positions, numbered 0 to 2.

- **0** = Blower off.
- **I** = Blower runs at lowest speed.
- **II** = Blower runs at highest speed.



3.6 Instruments and controls

The following illustration is an example of a possible dashboard configuration.

Please note: Dashboard configurations differ depending on customer's request.

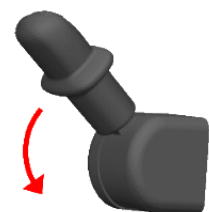


Pos.:	Type:	Description:
1	Air vent	Fully adjustable air ventilation nozzle.
2	Key switch	The key switch is optional.
3	EMO button	Emergency Off button (optional) when an emergency occurs.
4	Switches	Area where many switches are located, refer to the chapter of the tell-tales and switch types and assignments.
5	DIM	Driver Information Module: all important information about the tractor will be on this screen.
6	Switches	Area where many switches are located, refer to the chapter of the tell-tales and switch types and assignments.
7	Lever	Parking brake lever.
8	Air vent	Fully adjustable air ventilation nozzle.
9	ECC Panel	Electronic Climate Control panel (optional).
10	Ignition switch	Ignition and starter switch.
11	Speaker	Speaker for audible alarms.

3.7 Parking brake lever

The parking brake lever operates the parking brake of the tractor. When the lever is in the:

- UP position: parking brake released.
- DOWN position: parking brake is engaged; the vehicle cannot move.
- TEST position: tractors parking brake is engaged, trailers parking brake is released.



3.7.1 Operation

Release

Pull the parking brake lever up and move it to the upper position.

Only when the pressure in the supply of the brake system (air tanks) is high enough, can the parking brake be released.

Engage

Push the parking brake lever down until it locks into position.

The parking brake indicator light will illuminate in the DIM.

When the parking brake is applied and the trailer air hoses and cables are connected, the trailer brakes are also applied. (Only with EC braking system).

Parking brake tell-tale

The indicator light illuminates whenever the parking brake is engaged.



WARNING	
	<ul style="list-style-type: none"> ■ Always apply the parking brake before leaving the cabin. ■ Do not drive the tractor when the warning light (parking brake applied) illuminates. ■ Do not park a tractor with a heavy trailer on a ramp. ■ Do not apply the parking brake while the tractor is in motion, except for emergencies. ■ Only move a trailer with the pneumatic supply / command lines connected.

The parking brake can be used to stop the tractor in case of emergency. (only to be applied in the event of failure of the normal service brakes).

3.7.1 Parking brake test (optional)

With an ECE trailer brake valve fitted, the trailers brakes are applied automatically when the tractors parking brake is applied.

The trailer brakes are operated by compressed air supplied by the tractor, an air leak could result in trailer brakes being released.

To check that the braking capacity of a tractor is sufficient to prevent rolling when coupled to a trailer:

- Move the parking brake lever down beyond the park position.
- The trailers brake will be released while the tractors parking brake will remain engaged. If the combination remains stationary, the tractor's braking capacity is sufficient.

To release the parking brake, pull the control lever up and move it to the upper position.

3.7.2 Trailer brake lever (optional)

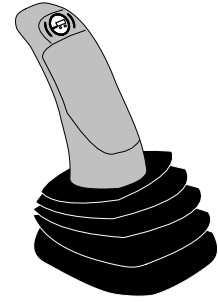
A single-stage, separate trailer brake lever can be installed as an option. This lever has a spring return mechanism and can be used to apply the trailer brakes gradually between released and fully applied.

An ECE trailer brake valve can be ordered as an option. When this brake valve is fitted, the trailer brakes are 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 pushing in on the lever and moving it to the extreme upper position. The trailer brakes will now no longer be applied. If the combination remains stationary, the tractor's braking capacity is sufficient.

To release the pneumatic parking brake, pull the control lever up and move it to the upper position.



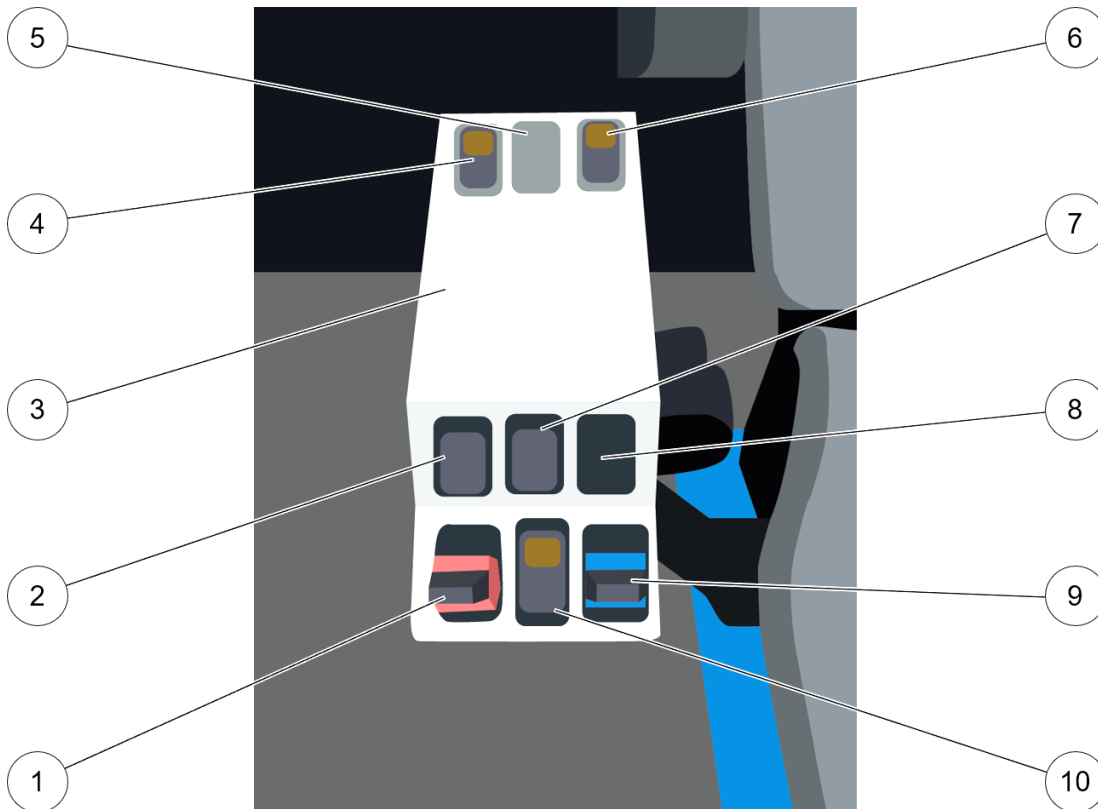
WARNING



- Do not drive the tractor when the warning light (parking brake applied) illuminates.
- Always apply the parking brake before leaving the cabin.
- Do not park a tractor with a heavy trailer on a ramp.
- When the tractor is parked for a long period, always apply the parking brake.
- Do not apply the parking brake while the tractor is in motion as this is dangerous, except for emergencies.
- It is not allowed to move a trailer without the pneumatic supply / command lines connected.

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

3.7.3 Driver operating console



Pos.	Type:	Description
1	Fingertip control	Hydraulic lifting of the Fifth wheel: <ul style="list-style-type: none"> ■ Push forward = lower the fifth wheel. ■ Pull backwards = raise the fifth wheel.
2	Switch	Remote fifth wheel operation: <ul style="list-style-type: none"> ■ Fifth wheel release button.
3	Housing	Switch control housing for fifth wheel lift control and transmission control.
4	Switch	Free to fill in/not designated (depending on configuration).
5	Switch	Free to fill in/not designated (depending on configuration).
6	Switch	Free to fill in/not designated (depending on configuration).
7	Switch	Free to fill in/not designated (depending on configuration).
8	Switch	<ul style="list-style-type: none"> ■ Remote fifth wheel operation. (depending on configuration).
9	Gear lever	Transmission control with the gear lever: <ul style="list-style-type: none"> ■ Push forward = select forward gear. ■ Pull backwards = select reverse gear. Push / pull to middle position: neutral.
10	Switch	<ul style="list-style-type: none"> ■ Switch to lower the rear air suspension.

See the automatic transmission manual for its detailed operating instructions.
 The fingertip lever may only be operated with the tip of the fingers.
 Lowering and raising is proportional, the speed of the hydraulic fifth wheel lifting depends on the stroke of the fingertip lever.

WARNING

Always bring the vehicle to a complete standstill and let the engine run idle when shifting:

- From forward gears (2,3..6, D) to reverse gears.
- From reverse gears to forward gears.
- From any gear to neutral.
- From neutral to any gear.

3.7.4 Combined turn indicator, main/dipped beam, flash, horn and wipers stalk.

The turn indicator lever is fitted on the left side of the steering column and operates several functions.

CAUTION

- Do a check on the turn indicators before driving, make sure they work properly.
- Only use the horn to alert other people in case of dangerous situations.

Low beam and high beam

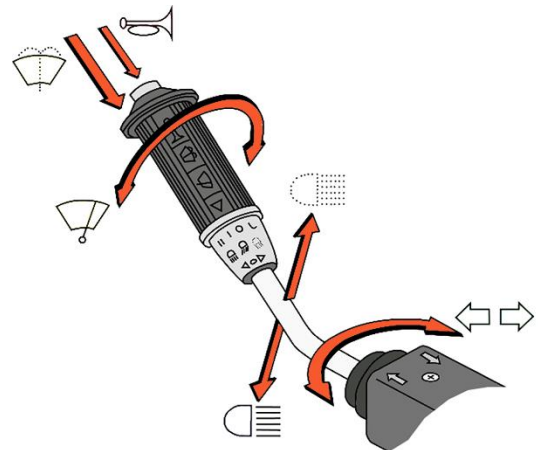
Push the lever downwards to switch from low beam to high beam.

The lever will stay in this position until it is moved back manually.

The low beam must be switched on first to use the high beam.

Flash the high beam

Pull the lever upwards to flash the main beam lights. The lever is spring loaded and will return to its normal position automatically when released.



Horn

Press the button at the end of the lever to activate the horn.

Turn indicators:

Left: pull the lever back to operate the left-hand turn indicator lights.

Right: push the lever forward to operate the right-hand turn indicator lights.

Front wiper, washer, wiper interval switch:

The turning function of the knob on the lever activates the front windscreen wiper in the following way:

J = Interval (optional).

0 = Off.

I = Speed 1.

II = Speed 2 (optional).

Pressing the ring at the end of the handle operates the windscreen washer(s).

NOTICE



- The shown combined indicator stalk is for the LHD (Left Hand Drive) situation. For a RHD (Right Hand Drive) tractor, the indicator stalk is on the right side of the steering column.

3.7.5 Fifth wheel controls

The lift frame is connected to the tractor's hydraulic system. Adjust the height of the fifth wheel by using the lever.

- Move the lever towards DOWN to lower the fifth wheel.
- Move the lever towards UP 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.
- Keep the fifth wheel as low as possible.
- Ensure there is sufficient ground clearance and top clearance during driving.

NOTICE



Terberg cannot be held liable for any external equipment other than that included as part of the supply contract.

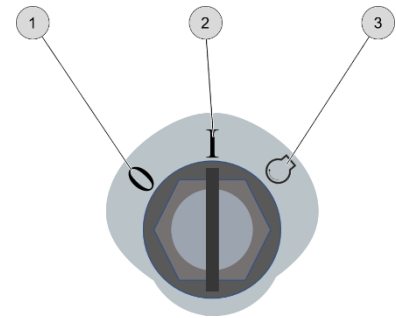
3.7.6 Ignition key switch (optional)

The ignition key has 3 positions:

0= Off.

1= Drive (ignition on) + pre-heating (optional)

2= Start.

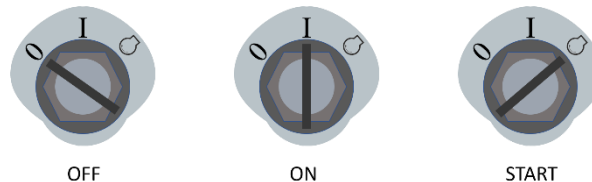


An ignition switch can be installed instead of the ignition key. This has the same positions and functionality as the ignition key, the only difference being that the switch cannot be removed, where the ignition key can.

Conditions for start are:

- Gear lever in neutral position.
- Park brake or service brake is applied.
- Some engines will not start if the transmission is not in neutral.
- After the key is turned to position 1, the engine pre-heater (optional) is switched on and warning light illuminates.
- The engine may not be started while the pre-heating warning light illuminates.
- When the pre-heat indication light extinguishes the engine can be started and the key returns automatically to the **ON** position.

Note: When the key is turned to the **ON** position, the battery charging light illuminate, indicating that the engine is not running and the battery will not charge.




WARNING




- Do not attempt to drive the tractor when any of the warning lights are illuminated.
- Release the parking brake before driving off.
- Do not place the ignition switch in the "Off" position while driving, this will lead to loss of control of the tractor.

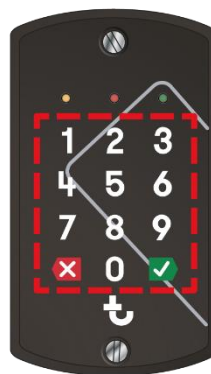
3.7.7 Terberg Connect® (optional)

Using PIN Code:

1. Place the ignition in the ON position.
2. Enter the correct PIN-code within 30 seconds
3. Confirm with the green confirmation key .
4. The green LED illuminates. (Authorisation is OK).
5. Start the tractor.

If you enter a wrong PIN code, the red LED will flash 3 times.

1. Press the red cancellation key .
- Wait 10 seconds before trying again.



Using RFID card:

1. Place the ignition in the ON position.
2. Hold the RF ID card in front of reader.
3. A beep indicates the ID is accepted.
The green LED illuminates.
4. Start the tractor.






NOTICE



- If you enter a wrong PIN code switch the ignition OFF, and wait 30 seconds before trying again.

Led indications for the card reader

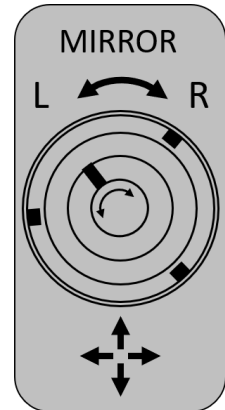
	LED 1	LED 2	LED 3
 Yellow	Power ON		
 Green			ID OK
 Red		ID NOT OK	

3.7.8 Remote mirror control (optional)

To control the remotely adjustable mirrors, a small joystick is installed.

How to adjust the mirrors:

1. Select the mirror that needs to be adjusted.
 - Turn it clockwise to select the mirror on the right side.
 - Turn it anticlockwise to select the mirror on the left side.
2. Move the knob up, down, left, or right to adjust the mirror in the corresponding direction.



WARNING



- An object seen in the mirrors might be closer than it seems.
- Adjust the outside mirrors before driving the vehicle.

3.8 Switches

This overview explains the icon of all different switches that can (as standard or option) be used in the YT tractor model.

3.8.1 Rear wiper - speed 1 & 2 (optional)

This three-position switch controls the rear wiper speed 1 and 2. The first position activates wiper speed 1 and the second position activates wiper speed 2.



3.8.2 Rear wiper - interval (optional)

This three-position switch controls the rear wiper speed 1 and 2. The first position activates wiper speed 1 and the second position activates wiper speed 2.



3.8.3 Rear fog light (optional)

Switch the dipped beam on first and then press this switch to switch on the rear fog light.

Note: If you leave the switch on, the fog light will not come on automatically when the vehicle lighting switch is turned off and on again.

To switch the fog light on, the rear fog light switch must be switched on again after the vehicle lighting switch has been switched on. Also, if the ignition has been switched off, the fog light resets and must be separately operated to switch on the fog light again.



3.8.4 Work light (optional)

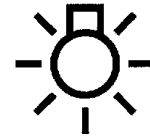
The work light switch operates the work light at the front and /or at the rear of the tractor. It is possible that more than one work light switch is installed. If this is the case, check visually which work light corresponds to which switch.



3.8.5 Vehicle lighting

This three-position switch controls the vehicle lighting:

- In the first position the lighting is off.
- The second position will switch on the parking lights, whether the ignition key is on or off.
If the ignition key is on, all parking lights will be switched on by position 1.
If the ignition key is off and the parking lights are switched on, they can be selected more specifically with the direction indicator lever:



Lever neutral:	All parking lights off.
Lever left:	Left-hand parking lights on.
Lever right:	Right-hand parking lights on.

- The third position of the vehicle lighting switch operates the dipped beam.
- The day running lights will automatically switch on when the ignition of the vehicle is on.

3.8.6 Rotating beacon

Turn on the rotating beacon by pressing this switch.



3.8.7 Start regeneration

Press the switch to start manual regeneration
More information is available in the engine section.



3.8.8 Stop or prevent regeneration

The switch prevents automatic regeneration or stops manual regeneration.
The SCR system cleaning stop lamp illuminates when the regeneration is stopped or prevented.
More information is available in the engine section.



3.8.9 Hazard warning lights

By pressing this switch, the hazard warning lights are activated. This means that both the left and right direction indicators operate simultaneously.

Use this feature when you are forced to stop or park the tractor in any abnormal place to ensure that other vehicles notice the tractor. The hazard warning lights can be operated whether the ignition key is on or off.

If the direction indicators on one or both sides of the vehicle start flashing more rapidly, then there is a problem with the direction indicators. Determine the cause immediately.



3.8.10 Mirror heating (optional)

This switch activates the electric heating of the outside mirrors. It can be used to demist and de-ice the outside mirrors.

Activate mirror heating only when demisting/de-icing is necessary. Continued operation can damage the system and is not necessary.



NOTICE



The mirror heating is only active when the (diesel) engine is running.

3.8.11 Rear window heating (optional)

Activate the rear window heating by pressing this switch. It can be used to demist and de-ice the rear window.

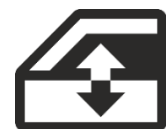
Activate rear window heating only when demisting/de-icing is necessary. Continued operation can damage the system and is not necessary.



3.8.12 Electric window (optional)

Operation of the electric windows:

- To open the electric window: press the switch down.
- To close the electric window: press the switch up.



The electric window is equipped with “comfort control”, which means that if the switch is held down for more than one second, the window will automatically continue lowering until it reaches its end stop.

CAUTION

Keep body parts away from the window and its surroundings when closing it.

3.8.13 Reverse warning buzzer (optional)

Push this switch to deactivate the reverse warning. The switch is spring loaded and the choice of overruling the reversing buzzer must always be properly assessed by the responsible driver / operator. If there is no urgent need to overrule the reversing buzzer, do not do it!



When the reversing buzzer is deactivated by the driver / operator, a message and tell-tale will appear on the DIM to confirm the choice of the driver / operator.



This situation will remain as it is during the operation of the tractor. The functionality of the reversing buzzer will be switched back on again when:

- The driver operator pushes the reversing switch again.
- The ignition has been switched off and on.

DANGER

- **Do not deactivate the buzzer for any longer than absolutely necessary.**
- **Take extreme caution when driving the tractor without the reversing buzzer, as other road users will not receive an audible warning.**
- **The operator is responsible for the safe use of this vehicle.**

3.8.14 Rear axle differential lock (optional)

There are basically three possibilities:

1. Axles that are equipped with a built-in differential lock.
2. Axles that have an automatic differential lock and, in these situations, there is no switch available, the locking and unlocking will be done automatically.
3. Axles that are equipped with a limited slip differential instead of a lock.



If a switch is available on the dashboard:

The rear axle differential divides the traction power between the wheels on the left and the right side of the vehicle and enables the wheels to rotate independently from each other. This is necessary to make turns and reduce tyre wear and mechanical overload on the drive train, it ensures optimal traction.

The rear axle differential can be locked with the rear axle differential lock switch on the dashboard.

When this is done the wheels both left and right are connected rigidly and therefore a loss of traction on one side of the tractor will not result in a complete loss of traction of the wheel(s) on the other side.

Only use the rear axle differential lock when driving straight ahead on a slippery road. Always try to avoid sharp turns when the tractor is loaded and when anti-skid equipment is fitted (e.g. snow chains).

Engage the rear axle differential lock:

- Ensure that the vehicle is at a complete standstill.
- Move the gear lever to Neutral.
- Press the rear axle differential lock switch.
- The rear axle differential lock will be activated and by means of an engaged proximity sensor or engaged switch, the system knows that the differential lock is active.
- **Note:** if the warning light does not come on continuously after a moment, drive the tractor carefully and slowly until the light comes on continuously. Applying a little steering might be necessary.

Disengage the rear axle differential lock:

- Ensure that the vehicle is at a complete standstill.
- Move the gear lever to Neutral.
- Return the rear axle differential lock switch to its original position.
- The rear axle differential lock warning light on the DIM will extinguish. When the warning light is extinguished the rear axle differential lock has been disengaged.
- **Note:** if the warning light does not extinguish after a moment, drive the tractor carefully and slowly until the light extinguishes. Applying a little steering might be necessary or driving backwards and forwards.

WARNING



- **Only use the rear axle differential lock in slippery conditions.**
- **Do not use the rear axle differential lock when the tractor is loaded or when anti-skid equipment is fitted.**
- **Drive carefully once the rear axle differential lock has been engaged.**
- **Never turn sharp corners on firm ground with the rear axle differential lock engaged.**

3.8.15 Air suspension pressure release (optional)

When the fifth wheel 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 when low trailer/trestle systems are handled.

Air can be released from the rear axle air suspension by pressing the switch.

When the switch is released, the air bellow will fill with air again, raising the rear end of the tractor.

The height adjustment of the air suspension will take control and maintain proper drive height.



WARNING



- **Make sure the vehicle is stationary before releasing air from the air suspension.**

3.8.16 Fifth wheel height override (optional)

This switch has a universal function depending on the owner's requirements.

Functions can be as follows:

1. To override the fifth wheel height restriction.
2. To override a customer-specified option.



WARNING



- **Do not use the override switch for any longer than necessary.**
- **Do not drive with an excessively raised trailer.**

3.8.17 Fifth wheel unlock

Press the switch "fifth wheel remote unlock" to unlock the fifth wheel.

Do so only when the vehicle is at a complete standstill.

If two switches with the same symbol (optional) are installed, then both switches must be pressed simultaneously to unlock the fifth wheel.



The fifth wheel can only be unlocked when the vehicle is almost at a standstill.

If the fifth wheel is still mechanically locked after pressing the switch, try to put the vehicle in Neutral to eliminate any friction force between the fifth wheel and the king pin.

WARNING



- **Make sure that the tractor is at a complete standstill before you unlock the fifth wheel.**
- **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.**
- **Make sure that the front-end of the trailer is sufficiently supported to the ground, either by trailer legs or alternative supports.**

3.8.18 Additional hydraulics (optional)

In general, this switch controls additional hydraulics, but will always correspond to customer-specified requirements.



3.8.19 Additional hydraulics (optional)

In general, this switch controls the additional hydraulics that operate any vehicle Power Take-Off (PTO).



3.8.20 Additional horn (optional)

This switch controls the additional horn on the vehicle or the trailer.



3.9 Additional warning lights outside the DIM

3.9.1 Trailer stand-by (optional)

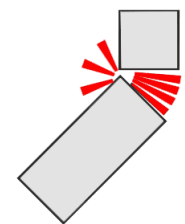
In general, this indicator light indicates that the trailer is in standby and is ready for use.



This light can also respond to customer-specific requirements.

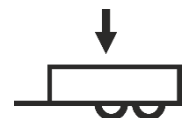
3.9.2 Trailer steer angle too large (optional)

This light indicates the driver that the current angle between the tractor and the trailer is too large. Do not steer any further, lower the speed and try to get the vehicle combination straightened until the light goes out.



3.9.3 Trailer down (optional)

This light indicates that the trailer has been lowered, e.g. to connect/disconnect the trailer. Make sure the trailer has been raised before driving off.



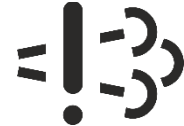
3.9.4 Trailer at ride height (optional)

This light indicates that the trailer has been raised to ride height. It is OK to drive off with the combination.



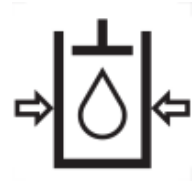
3.9.5 Exhaust system error (optional)

The exhaust system light illuminates when a fault occurs in the exhaust system, e.g. a blocked exhaust filter.



3.9.6 Hydraulic system warning (optional)

This warning light illuminates when a fault occurs in the hydraulic system, e.g. high oil temperature / restriction.



3.9.7 Trailer length (optional)

The trailer length light (yellow) illuminates when a fault occurs or when the trailer is shifted out.



3.9.8 Trailer system (optional)

The trailer level light lights when a fault occurs or when the trailer is not at the correct level.



WARNING



- If the indicator light illuminates, stop the vehicle as soon as possible.
- The fault must be resolved by authorised service personnel.

3.9.9 Central greasing system (optional)

- 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 Driver Information Module (DIM) description

The DIM is a digital dashboard that helps drivers to remain safe on the road by letting them know something needs attention. The dashboard symbols list will help you to recognise common, safety and warning indicators. The list may vary per vehicle.

- The DIM is an information management tool that visually tracks, data, errors, metrics to warn the driver and to monitor the vehicle and specific processes.
- The data is customised to meet the specific needs of a vehicle or company.




4.1 Dashboard symbol list

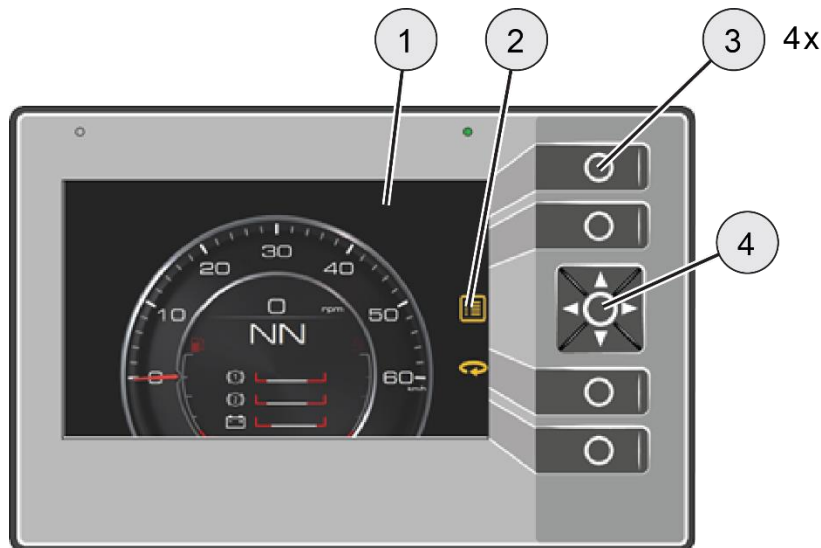
During the process, the DIM displays a variety of symbols like warnings, safety icons, information and common icons and indicators, divided into different groups like:

- Warning symbols.
- Safety symbols.
- Lighting indicators and symbols.
- Diesel powered vehicle symbols.
- Advanced Feature symbols and indicators.
- Common symbols.

All symbols, icons and tell-tales are listed in Paragraph 4.4.

4.2 Operating components

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

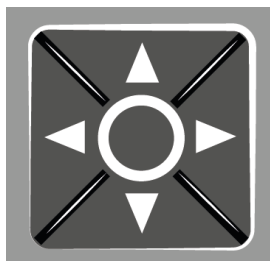


1. LED display.
2. Screen selection icons.
These icons appear at right side on the display beside the selection keys. A new screen can be displayed if you press the related selection key.
3. Selection keys.
With these four keys you can select/enter the regarding screen icons at right side in the display. The backlit LED is on when the function is selected.
4. Navigation key-group.
This is a group of 4 independent arrow keys including ENTER key in the middle. Backlit led in the middle.
With the enter key you also can select the screen icon beside the navigation key-group.

Audible signals

The DIM always gives a warning sound signal when the driver needs to be notified of an error code or of an important change in the condition of the vehicle.

Navigation key functions



- △ Move Up.
- ▷ Move Right.
- ▽ Move Down.
- ◁ Move Left.
- ○ Enter key. To select a function, a value or to activate the screen icon beside the key-group.

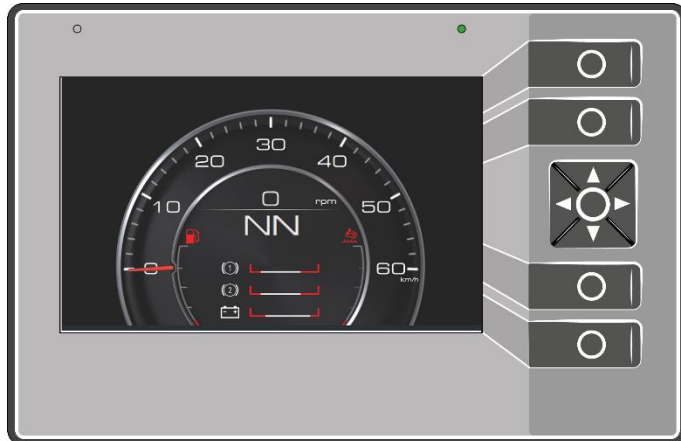
4.3 Operation of the DIM

4.3.1 Initialisation and Start screen

When you turn on the ignition switch, the DIM will initialise.

After initialise, the DIM shows the Terberg logo, followed by the start screen.

- The start screen shows information like:
speed (km/h), information about the gears, engine speed (rpm) and vehicle information that requires attention.

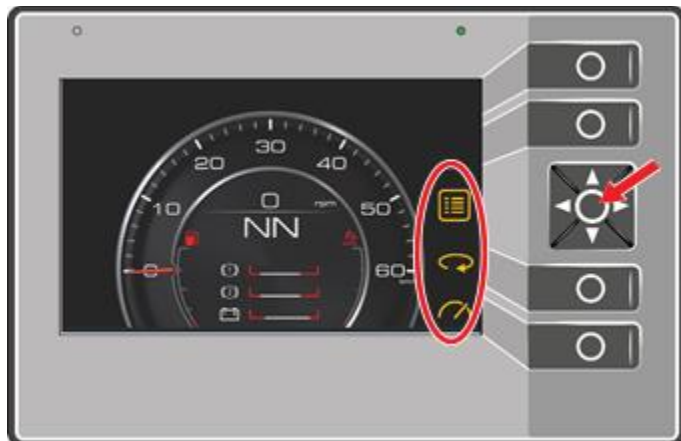


Further on in this chapter is described how you can change the predefined display view.






4.3.2 Screen navigation icons

Five screen navigation icons can appear at right side of the display. Three of them are shown in the figure.

- If screen navigation icons are not visible, then you press the Enter key.
- Press the selection key beside an icon to show the desired screen.



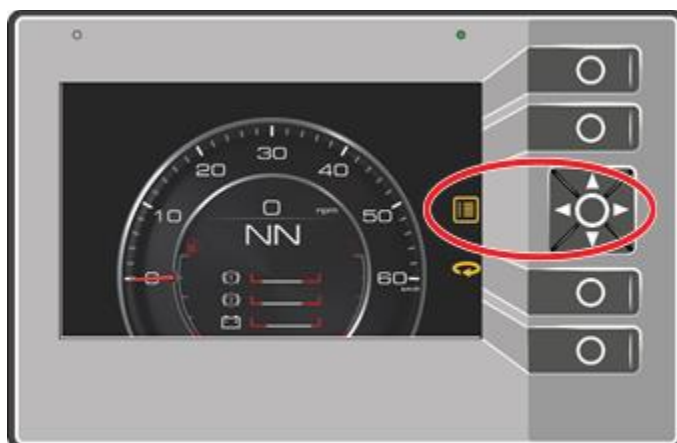
Five screen navigation icons

■ Apply	Record the desired data.	
■ Go back	Go to the previous screen.	
■ Numerical values	Open the screen to change and enter values.	
■ Specific view selection	Select a screen for your desired vehicle part.	
■ Dashboard	Return to the normal basic dashboard screen.	

4.3.3 Display settings

Most of the advanced display settings are factory set. You can change the desired settings e.g. Language and Time settings by yourself.

- Use the navigation enter key to select icon 'Numerical values' as shown.
- A new screen called: 'Display settings' appears.

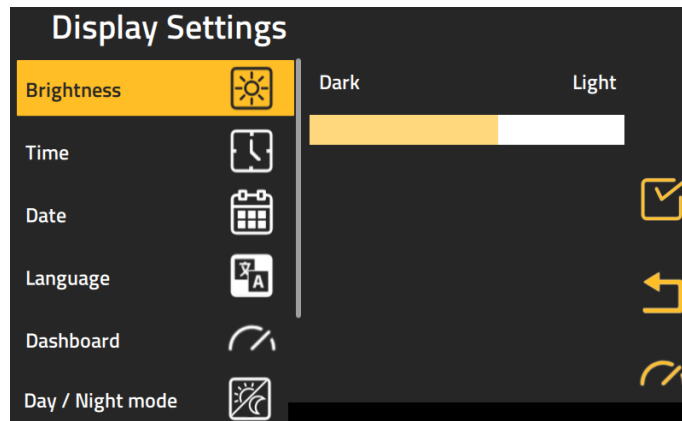


In this screen you can adjust the following items:

- Brightness
- Time.
- Date.
- Language.
- Dashboard settings.
- Day / Night mode.

Use navigation keys to adjust and to enter the desired settings.

- At the right side of the display appear new corresponding screen navigation icons for this screen.
- Always enter new adjustments with the 'Apply' icon /button or choose another function to go back.

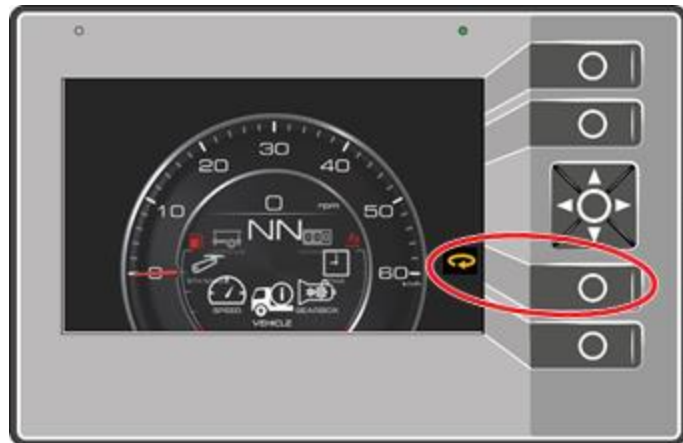


4.3.4 Specific view selection function

Carousel function:

With this function you can choose a screen for a specific topic, like:

- Vehicle.
- Gearbox (Transmission).
- Time (and date etc.).
- Odometer.
- Lifter frame.
- Fifth wheel.
- Speed data.



This list can vary per vehicle type.

Method:

- Press the function key, related to the 'Rotation' icon two times.
- Use the navigation key group to rotate the carousel until you have selected the desired vehicle part topic. The lowest and boldest icon will be the active one, in this case 'Vehicle'.



4.3.5 Specific view screens

A few 'Specific view' screens are shown below, Vehicle and Gearbox.

- In each screen you can get more technical information about the chosen topic. Use the screen navigation icons / buttons in the desired screen to display more detailed information.

Specific view 'Vehicle'

This screen displays information about the brakes and the battery.

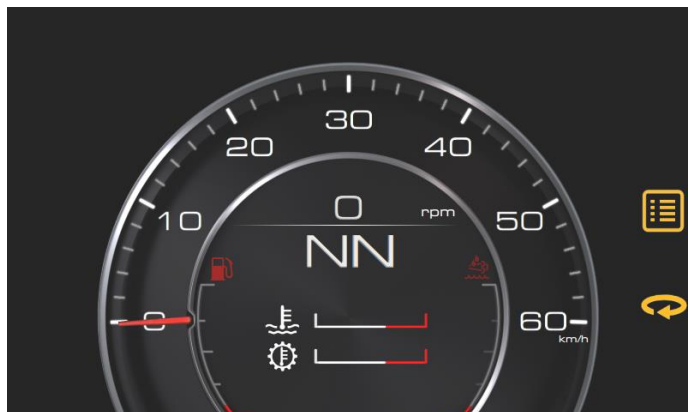
With the icon 'Numerical values' you can another screen for more information.



Specific screen 'Gearbox' (Transmission)

This screen displays two kind of gearbox temperatures:

- Oil sump temperature.
- Torque converter temperature.

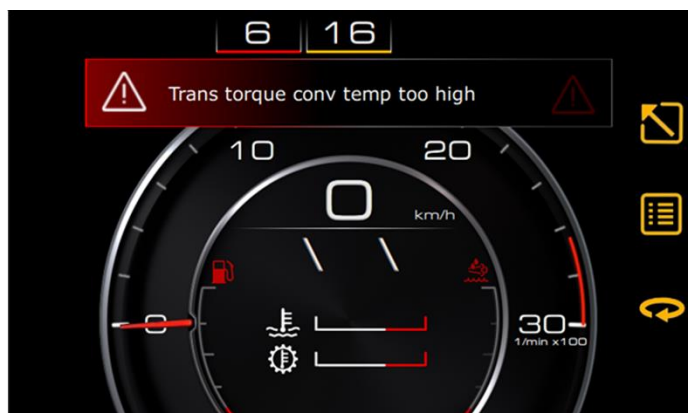


4.3.6 Important error messages

If an error occurs, e.g. a temperature gets too high during the working process, then a red warning frame with text pops up in the display as shown.

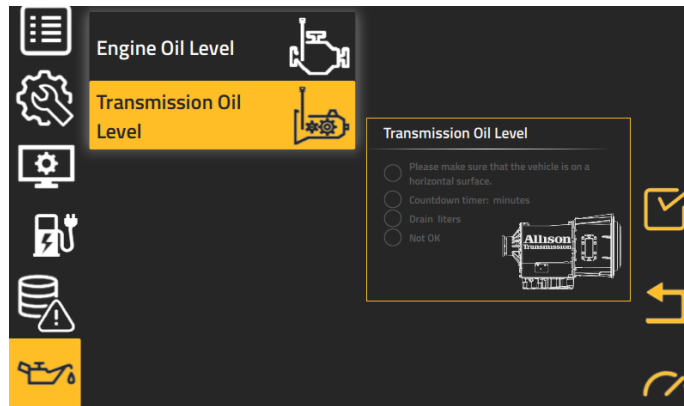
In this case a transmission temperature error occurs.

- Select icon 'Numerical values' at right side of the screen.
- A new screen appears in which you can make choices to check temperatures, or to check other things.

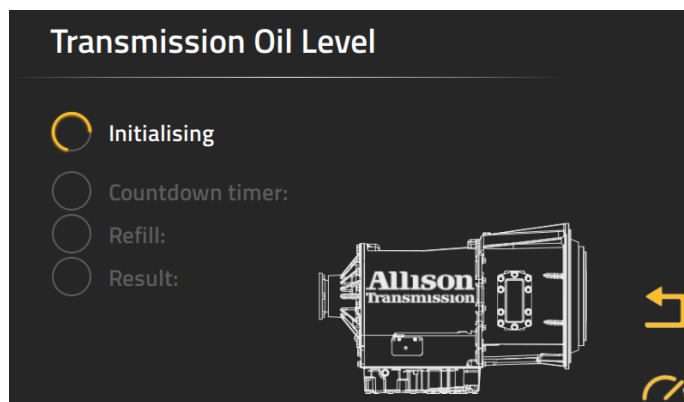


Check oil temperatures

Activate the icon 'Numerical values' and navigate to the 'Transmission Oil Level' screen.



This screen shows extensive information about the oil level.



4.3.7 Other important vehicle information

In the same way as described for the Specific screens, you can check other important vehicle data, like:

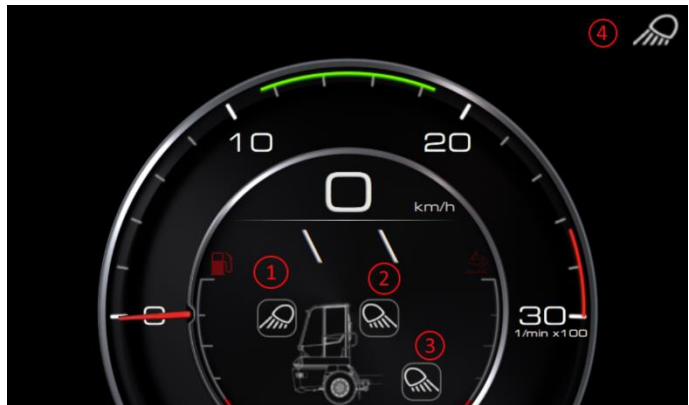
- Engine oil level.
- Service information.
- Active Error information.
- Saved Error information.
- Vehicle type information and so on.
- Parameters and other info for service technicians.

4.3.8 Icons and screens for important features

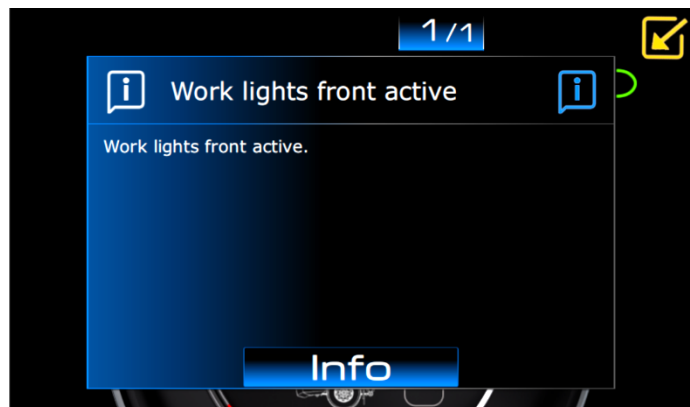
The status of important features, e.g. work lights is shown in the DIM.

- When one or more work lights are active, it will be shown in the DIM by icons.
- In this case the regarding icon(s) will light up white.

1. Work light front.
2. Work light rear side cabin.
3. Work light behind.
4. Screen selection icon.



- 'Work lights front' pop-up message.



Other functions and features

- Function and features may vary per vehicle. Each important function or feature has its own DIM screens, pop-up frames and commands.
- For detailed technical information, contact your Terberg dealer.

4.3.9 Illumination

The display is backlit when the ignition is on.

The buttons are backlit when the vehicle lighting is switched on.

4.3.10 Menu structure

Press button 1 – MENU to open the DIM menu. A list with the following options will be displayed:

- Instrument Panel.
- Numerical Values 1.
- Numerical Values 2.
- Display Settings.
- Terberg Service Tools (only for authorised service personnel).

Use the navigation buttons to move the cursor (coloured bar) to one of the listed pages, for example 'Instrument Panel', and press button 1 – OK to select the page.

A second menu is available by selecting Terberg Service Tools in the DIM menu. A list with the following options will be displayed:

- Menu.
- AEB Start.
- Stall Test.
- Terberg Diagnostics.
- Output Activation CC.
- Output Activation DRC.
- Manual Gear Selection.
- Test Instrument Panel

Use the navigation buttons to move the cursor (coloured bar) to one of the listed pages, for example 'Test Instrument Panel', and press button 1 - OK to select the page.

4.3.11 Password-protected pages

Some pages require a password to gain access. If that is the case, the following screen will appear after selecting the page in the menu:







4.3.12 Start-up page: engine oil level


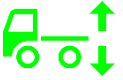






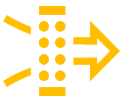


After moving of the ignition key to the first position or in the event of a wake-up signal, the following start-up page will appear for a few seconds (not for Cummins engines).














CAUTION







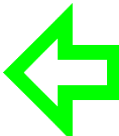



- Do a check on the engine oil. Make sure that the engine is at ambient temperature and has been stopped for minimal 15 minutes.
- After draining or adding engine oil, always restart the ignition key to perform a new check.
- The digital oil level check (if available) is for indication only. If the digital level check does not change after adding/draining, the sensor could be faulty. In this case, the dipstick and filling cap are at the left side of the front bumper, check the oil level.

4.4 Display Symbol overview

Icon	Colour	Description	Notes
	Red	Indicate the status of a three-point seat belt (belt with single shoulder harness).	Reminder to fasten your seat belt. Always wear the seat belt while driving to ensure maximum protection.
	Red	Transmission oil temperature high.	If the light comes on while the engine is running it indicates that the gearbox oil temperature is too high. Avoid steep gradients and stop-start traffic. Shift to Neutral and run the engine at 1200-1500 rpm for 2-3 minutes. Note: the engine will shut down at 130°C.
	Red	Engine oil pressure low (Not Mercedes engine).	If the light comes 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 coolant temperature high.	If the light comes on while the engine is running it indicates that the engine temperature is too high. Avoid steep gradients and stop-start traffic.
	Green	Fifth wheel locked correctly	The fifth wheel is connected to the trailer. Always perform the Push-Pull test.
	Red	Fifth wheel not locked correctly.	The fifth wheel is not correctly locked, or the kingpin is not detected. Driving with a trailer attached is prohibited! Check the trailer connection before driving.

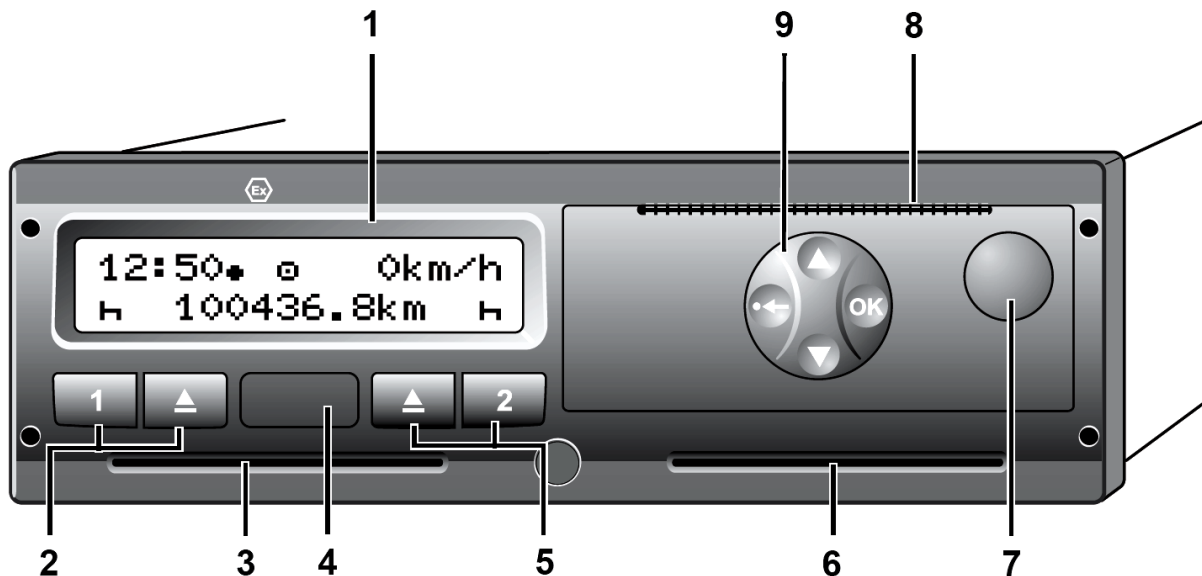
Icon	Colour	Description	Notes
	Red	Parking Brake applied.	If this light comes on the vehicle must be stopped. Before driving off the parking brake must be disengaged, and the light must be out.
	Yellow	Air suspension pressure rear axle released (optional).	This comes on when the air is released out of the rear air suspension. Do not drive in this situation, it is only for coupling a low trailer.
	Green	Parking lights on.	Informs the driver that the parking lights are switched on.
	Green	Low beam on.	
	Blue	Main beam on.	
	White	Work light active.	
	Yellow	Fifth wheel high or low limit override.	H2 Max height, no override possible.
			H1 Height limitation, override possible.
			L1 Lower limitation, override possible.
			L2 Min height, no override possible.
	Yellow	Rear axle differential lock. Flashing = requested. Continuous = engaged.	Caution: differential lock is active. Use this only when driving straight ahead on slippery roads.
	Yellow	Engine air filter obstructed / blocked.	The air filter needs servicing or replacing. The fault must be resolved by authorised service personnel.
	Yellow	Fault in exhaust system (optional).	The fault must be resolved by authorised service personnel.
	Yellow	High exhaust temperature.	Regeneration is active.

Icon	Colour	Description	Notes
	Yellow	Fuel level low indication.	Illuminates continuously when the fuel level is below 10%.
	Yellow	Water in fuel filter.	See section: "Repair and maintenance - Fuel filter".
	Yellow	Low fuel pressure.	Check the fuel system. Fuel filter, pump or leakage could be the cause.
	Yellow	Exhaust particle filter blocked (after treatment system) (optional).	The exhaust after treatment filter is full or faulty. Follow instruction on dashboard. See Engine section.
	Yellow	Exhaust regeneration disabled.	
	Yellow	Urea level low indication (AdBlue).	Illuminates when the urea level is below 10%.
	White	Wait to start the engine.	
	Yellow	Engine malfunction.	A problem or a potential problem has been detected. Have it checked or repaired.
	Yellow	Engine fault (code) active.	Refer to the fault code in the Engine Service manual or refer to authorised service personnel
	Red	Stop the engine	Stop the vehicle and engine as soon as possible to prevent further damage.
	Yellow	Engine coolant level low.	Stop the vehicle and check the coolant level. Add/drain coolant if necessary.
	Yellow	Engine oil level low or Engine oil level high	Stop the vehicle and check the engine oil level. Add/drain oil if necessary.
	Yellow	The transmission has failed or is malfunctioning.	A problem or a potential problem has been detected. Have it checked or repaired. Refer to the fault code in the transmission manual.

Icon	Colour	Description	Notes
	Red	Continuously = Alternator not running. Flashing = Battery Save Active.	This warning light shows when the engine is not running. The light should extinguish when the engine speed exceeds 1000 rpm. 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 personnel. If the light is flashing, the battery level is too low. The vehicle lighting and some services (heating, etc.) are deactivated.
	Yellow	Brake pads worn.	Have the brake pads inspected by authorised service personnel.
	Yellow	Loss of power steering.	Illuminates when there is a loss of hydraulic power.
	Yellow	Traction control active.	
	Red	Reverse driving buzzer switched off.	
	Red	Engine rpm too high.	Reduce engine rpm immediately.
	Green	Left direction indicator active.	
	Green	Right direction indicator active.	
	Yellow	PTO governor (engine RPM governor) is active.	The engine does not respond to the accelerator pedal. The governed RPM value is indicated by a red mark on the rim of the RPM gauge.
	Green	Power Take-Off (PTO).	

5 Digital tachograph (optional)

Tractors can be equipped with a digital tachograph. A concise guide is described below to enable you to operate the device. For further information please refer to the tachograph's user manual.



5.1 Start of shift

1. Turn the ignition on.
2. Insert the Driver Card into the left-hand slot (3).
3. Answer the questions that appear on the screen (1) (e.g. activities before inserting your card and from which country you are leaving) using the Menu buttons (9).
4. Select the 'Operational' activity by pressing the Driver 1 Activity button (2-left).
5. The tachograph is ready for use.

5.2 End of shift

1. Select the 'Rest period' activity by pressing the Driver Activity button (2-left).
2. Press the eject button (2-right).
3. Answer the questions that appear on the screen (1) (e.g. in which country have you arrived and do you want to print the details of the shift) using the Menu buttons (9).
4. Take the Driver Card out of the left-hand slot (3).
5. Turn the ignition off.

5.3 Possible activities



- Operational – e.g. while driving.
- Available – e.g. while riding as a co-driver.
- Resting – e.g. while resting or taking a break.
- Other – e.g. while inspecting or servicing the tractor.

NOTICE

- The start and end times of shifts are stored as GMT (Greenwich Mean Time). Make sure your local time is converted correctly.
- Always carry an additional printer roll inside the tractor; if you lose or damage your Driver Card, you will have to make printouts to record your shifts.
- When inserting two Driver Cards at the same time, make sure that the driver's card is in the left-hand slot (3). This because the tachograph will automatically switch Driver 1 to 'Operational' when the tractor is moving.

6 Driving the vehicle

6.1 Drive instructions

The driver must adhere to safe driving instructions at all times.

6.2 Drive safe and durable

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

- 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 tractor lighting 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.

6.3 Drive economic

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

Observing the instructions below will ensure that your tractor is used economically:

- 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.

6.4 Before driving

- 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 visually in accordance with the instructions given in this manual.
- Check for leakage of the pneumatic braking system visually and auditive.
- 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 (refer to the manual of the engine supplier).
- Check the AdBlue level.
- Adjust driving position (seating, steering column).
- Adjust the mirrors.

6.5 Starting the engine

Start the engine in the following order, if applicable make sure start inhibitor is activated/ used:

- 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 the DIM shows the instrument panel, wait until the engine preheat check light (optional) is "off".
- 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.
- 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).

6.6 Stopping the engine

Stop the engine in the following order:

- Stop the tractor, while holding the brake pedal depressed.
- Select neutral.
- Apply the parking brake and keep pressing the brake pedal.
- Turn the ignition key to the “0” position.

6.7 Shifting and gear changes

NOTICE



- This manual describes the general procedure for shifting/changing gears.
- Refer to the gearbox section in this manual for detailed instructions.

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

- Apply the brakes of the tractor by depressing the brake pedal.
- Release the parking brake.
- Do not press the throttle pedal, the engine must be running idle.
- Shift the gearbox in drive (D) or reverse (R) 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.

6.7.2 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.

6.7.3 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 tractor movement, always apply the brakes of the tractor, keep the throttle released and the engine at idle, before changing gear.

6.8 Tractor-trailer (un)coupling

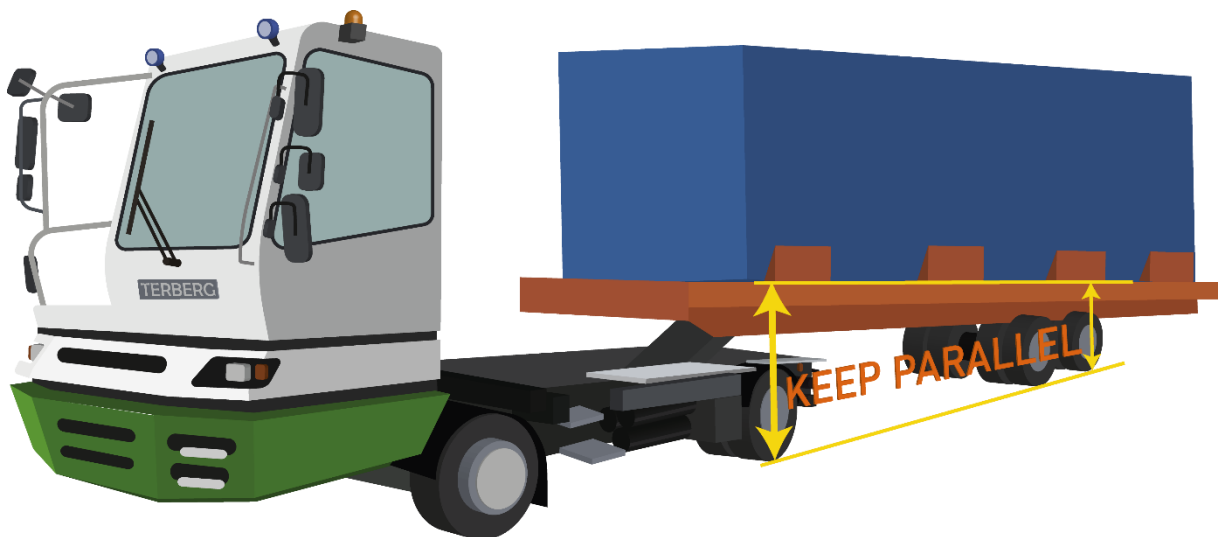
6.8.1 Use of the fifth wheel lifting system

The tractor has a lifting system for its fifth wheel, due to ergonomic reasons for the driver. Optionally a fixed fifth wheel is available. The system can lift trailers of different heights, so the driver does not 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 the control lever.

- 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 parallel with the surface (as shown in picture) to ensure optimal load distribution, and stresses in the combination are kept to a minimum. When driving with load on the lift frame, make sure it is raised by around 5 cm at least.



When driving on uneven ground, obstacles, ramps etc. the trailer can be raised to keep it sufficiently clear from the ground. Always keep it as low as possible (parallel to the surface it drives on), which ensures the highest 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 whether this is required or not.

Fifth wheel load detected speed limiter (optional)

If the lifting system detects a load on the Fifth wheel, the maximum speed will be limited, as shown on the DIM.



6.8.2 Couple 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 is properly seated in the fifth wheel.
- Ensure the green indicator light illuminates.
- If this is not the case, correct coupling has not been achieved. Try to connect again until the green indicator light illuminates.
- Perform a push – pull test (see next section) to ensure the trailer is coupled properly.
- Activate the parking brake and confirm it is engaged.
- Connect and engage air lines and electrical connections between the trailer and vehicle as required.



6.8.3 Perform Push-Pull test

When the green warning light is switched on, the driver cannot rely on that information solely. To safely move the trailer, the driver must first perform a Push-Pull test.



A pull and push test can be done on a trailer equipped with parking brakes or on a trailer with sufficient weight on the trailer legs.

Method:

- Couple the trailer in the fifth wheel.
- Do not connect the trailer brake hoses and do not lift the fifth wheel.
- Apply forward gear and "pull gently" (without sliding the trailer legs over the ground) to confirm the fifth wheel is properly locked.
- Check the green light on the DIM. If it illuminates, then drive the tractor backwards slowly and carefully.

This test proves that the trailer is mechanically connected to the tractor unit. The air hoses can now be connected and the trailer can now be moved.

WARNING



- Check the king pin size before connecting the trailer to the fifth wheel.
- If a king pin is not the correct size, it could result in a damaged trailer or fifth wheel.
- 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 tractor must not be used until all the above conditions are checked.

6.8.4 Uncouple a trailer

1. Find a suitable parking place and stop.
2. Lower the fifth wheel until the trailer front supports are on the ground.
3. Activate the parking brake and confirm it is engaged.
4. Disengage and disconnect air lines and electrical connections between the trailer and vehicle.
5. Deactivate the parking brake and confirm it is released.
6. Depress fifth wheel unlock buttons to unlock the fifth wheel, then drive the tractor forward.

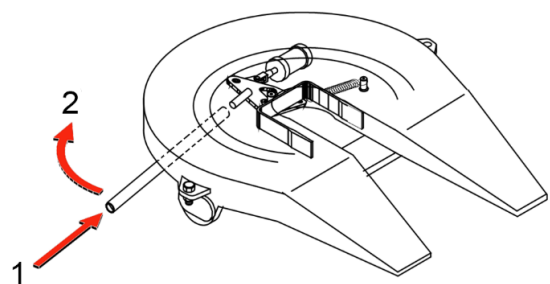
NOTICE



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

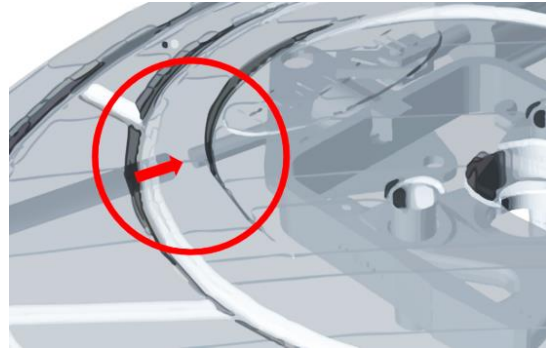
When unlocking is **not** possible with the switch, you can unlock the fifth wheel by manually:

- Use the cabin lift bar (stored on the left side of the driver's seat) to unlock the fifth wheel by hand.



Procedure:

1. Take the lift bar, intended for cabin tilting and put it onto the little bar, which is welded on the cam plate under the fifth wheel as shown.
2. Pull the 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 tractor are disconnected.

7 Periodic checks and maintenance

Refer to the separate paragraphs for maintenance, performed by the driver/operator.

7.1 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.

The following items must be checked:

- Fuel level (diesel).
- Engine oil level.
- Transmission oil level.
- Engine coolant level.
- Hydraulic oil level.
- Fifth wheel.
- Air tanks and dryers.
- Instruments and lights.
- Wheels and tyres (tyre pressure).
- Driver's seat and mirrors.
- Wind screen washer level.

CAUTION



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

7.2 Fuel (diesel oil)

Use fuels that comply with the 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.

NOTICE



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

7.3 Engine oil level

Refer to the engine manufacturer maintenance guidelines in the Engine Manual. Always use the dipstick instead of the digital oil level check for the best information about the oil level in the engine.

To do so, withdraw the dipstick from its holder and wipe it with a clean, lint-free cloth. Replace the dipstick in the holder. Withdraw the dipstick again and check the oil level.

This should be between the marks on the dipstick. Top up with the correct oil through the filler hole if necessary.

Always top up with the same make and type of oil as is already in the engine or transmission.

For more detailed information, refer to the Terberg Maintenance manual.

NOTICE



- Digital oil measurement not supported with the current engine Cummins B6.7
- Do a check on the engine oil level.
- Make sure that the engine is at ambient temperature and has been stopped for minimal 15 minutes.

7.4 Transmission oil level

Do a check on the oil level: withdraw the dipstick (not for Allison transmissions because of automatic oil level measurement) from its holder and wipe it with a clean, lint-free cloth. Replace the dipstick in the holder.

Withdraw the dipstick again and check the oil level. The level should be between the marks on the dipstick. If necessary, top up with the correct oil through the filler hole. Always top up with the same brand and type of oil as is already in the engine or the transmission.

For more detailed information, refer to the Terberg Maintenance manual.

NOTICE



- Refer to the transmission section of the operation manual for a detailed procedure.

7.5 Coolant level

The coolant level is checked automatically, when the coolant level becomes too low the low coolant warning light illuminates.

If the warning illuminates:

1. Stop the engine and allow it to cool down.
2. Place the ignition in the OFF position.
3. Add 1 litre of coolant.
4. Place the ignition in the ON position.
5. Check that the warning light has turned off.

If the warning light remains illuminated repeat steps 2 through 5.

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, refer to the Terberg maintenance manual.

WARNING



- **Never open a hot cooling system as hot coolant can cause severe burns.**
- **Glycol is toxic. Hands must ALWAYS be washed after handling glycol.**
- **Dispose of glycol in the proper manner.**

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.

7.6 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 in the system. Add oil through top of the return of the hydraulic oil filter. Use cleanliness during filling and only add clean oil.

collected oil must not be thrown back into the tank due to possible contamination.

Removing the filter cover and adding oil must be carried out with the engine switched off to eliminate the risk of oil spillage.

For more detailed information refer to the Terberg maintenance manual.

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.
- Avoid under all circumstances dirt and dust entering the oil reservoir.
- Work cleanly, use clean oil and clean cans for oil filling.

7.7 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. Clean the sensors with a lint-free cloth if necessary.

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.**

7.7.1 Fifth wheel height calibration

NOTICE

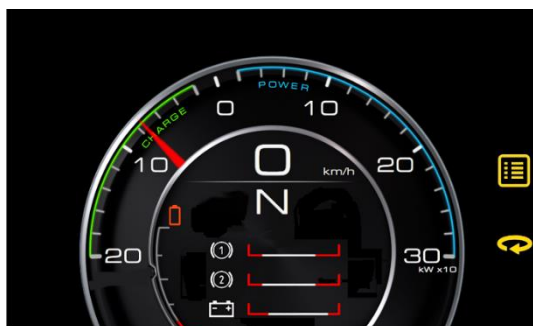


- The represented height of the Fifth wheel is the height from top of chassis to top of Fifth wheel.
- The calibration action can only be done one time in the DIM screen, otherwise leave the DIM screen and re-open again to make a new calibration.
- When opening the calibration menu, there is always a pop up message with info about the calibration process.

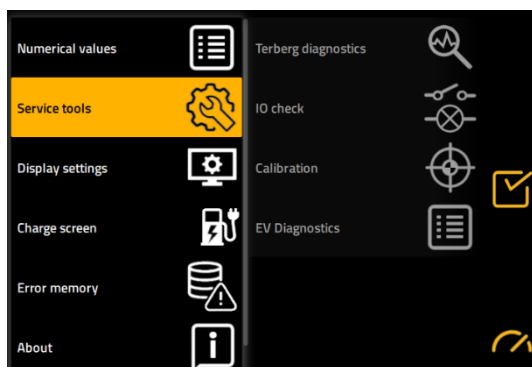
NOTICE



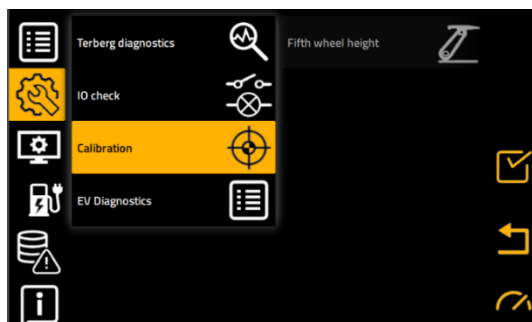
A level 1 password is required



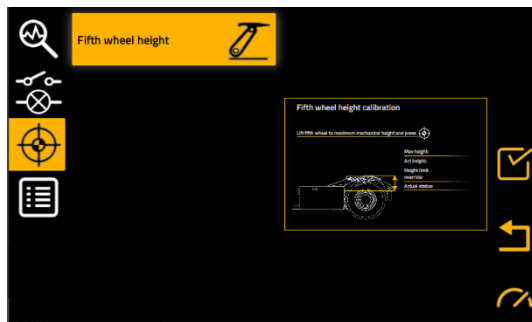
- Select Menu.



- Navigate to Service tools.
- Press the enter key to select apply



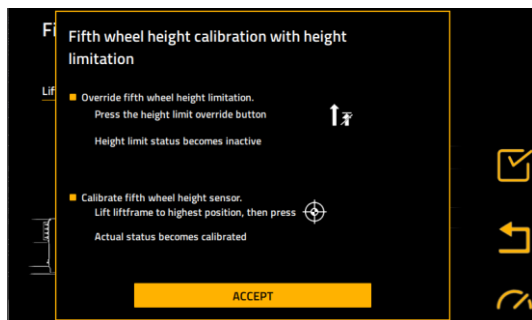
- Navigate to calibration.
- Press the enter key to select apply



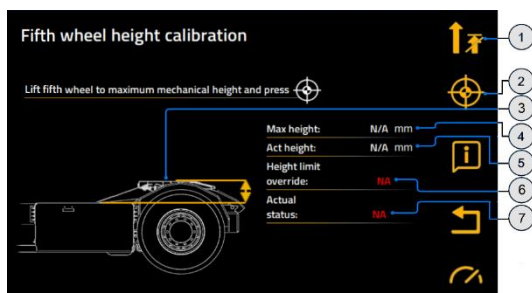
- Select 'Fifth wheel height'.
- Press the enter key to select apply



- Use the Up and Down keys on the navigation button to enter the Level 1 password.
- Press the enter key to unlock the screen.



- Read the instructions on the screen.
- Press the enter key to select apply



Screen when Fifth wheel height limitation installed


1. Override Fifth wheel limitation.
2. Calibration activation.
3. Actual height of the Fifth wheel.
4. Max. possible mechanical height.
5. Actual height Fifth wheel.
6. Override active (if fitted).
7. Calibration status (if fitted).



NOTICE



- When a Fifth wheel height limitation is installed it can only be overridden by holding the OVERRIDE button, when the calibration procedure is finished, make sure to lower the lift frame below its limited value.
- Only press the CALIBRATION button at the highest mechanical position. Otherwise there is no reliable representation of the height.

Start calibration

1. Lift the Fifth wheel to the maximum height.
Press and hold the **OVERRIDE** button to raise the Fifth wheel beyond a set height limitation (where fitted).
2. Make sure that the Max height and Act height are equal.
3. Press the button: calibration 
4. The Fifth wheel height is now calibrated.

Press the button: dashboard  to return to the main dashboard screen, or the Go back  button to return to the Settings menu.

NOTICE



The maximum mechanical height can be noticed when the hydraulic pump hits its maximum pressure limit, this is noticed by a louder pump sound.

NOTICE



The DIM is still in level 1 password mode after calibration. Switch the power off and on again to reset the password mode.

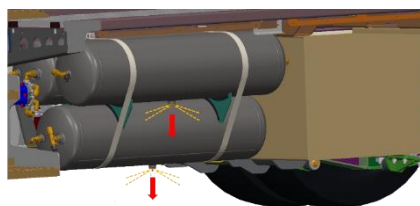
7.8 Air tanks and air dryer

Air tanks contain compressed air, delivered by a pump on the engine. The air is taken in from the environment and then treated for quality, so it does not damage or wear out the air system components.

For that reason, an air dryer is installed but, in some cases, the moist in the compressed air cannot be dried completely and must be let off. To do so, there is a water drain valve installed at the bottom of each air tank. Pull the valve (or chain/cable connected to it) to let off any moist (see red arrows).

Open the manual valve weekly to maximal prevent moisture inside the air-pressure system.

The automatic valves (option) are triggered every time the brake is applied. Do a check of both types of valves in accordance with the Terberg maintenance manual.



An air dryer extracts water from the tractor's air circuits. The air dryer is maintenance free for the driver.



WARNING

- **Water in the air circuits will shorten the lifetime of the air circuit components and can result in failure of brake components.**

7.9 Instruments and lighting

Check all lights and instruments before driving.

7.10 Driver's seat and mirrors

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

7.11 Windscreen washers

Check the fluid level and top up if required. The reservoir is located near the mirror stand on the cabin entry platform.

- In the summer, add screen cleaner to the water reservoir to keep the windscreen free of greasy deposits and insects.
- In the winter, use water mixed with special screen wash anti-freeze.

7.12 Wheels and tyres

Do a check on the condition and pressure of the wheels and tyres every week. Make sure that the wheel nuts are tightened to the correct torque. Remove foreign objects (e.g. stones) from the tyre treads.

WARNING

Note that the following situation about tyres can cause accidents or failures:

- **Damaged tyres.**
- **Tyres with insufficient tread.**
- **Tyres subjected to excessive loads.**
- **Tyres that are not correctly inflated.**

Terberg provides tyres to meet standard specifications. Depending on the application and customer demands the actual tyre specification may vary from the standard. It is the customer's responsibility to ensure that tyres meet the working requirements of the tractor.

7.13 Tyre Pressure Monitoring System display, TPMS (optional)

This system helps maintain correct tyre pressures and detect slow punctures early.

CAUTION

- **TPMS is not a substitute for proper tyre maintenance. It is the operator's responsibility to maintain correct tyre pressure, even if under-inflation has not been displayed on the TPMS screen.**

7.13.1 Activation

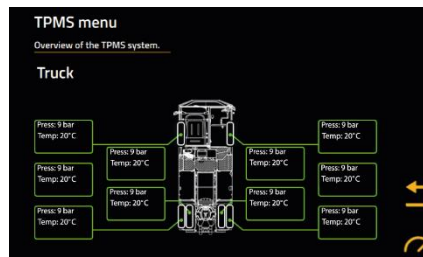
The TPMS will function whenever the ignition is placed in the ON position. Use the navigation buttons on the Driver Information Module to navigate to Tire info.

7.13.2 Operation

The TPMS menu shows a top view of the vehicle and displays all tyre related information.

By default the Truck menu will be displayed.

When a trailer is coupled with compatible TPMS sensors the tyre information for the trailer can be displayed.



example

Information and Notifications

The following information is available for tyres fitted with a TPMS sensor:

Press: Actual tyre pressure

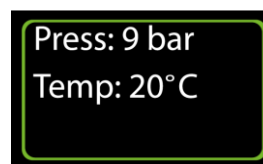
Temp: Actual temperature of air inside the tyre

SoC: State of charge of the battery.

(This status will only become visible once the battery level is low.)

Green border:

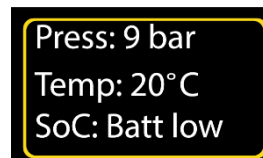
TPMS sensor is active and all conditions are correct.



Yellow border:

TPMS sensor is active and one or more conditions are outside operating parameters.

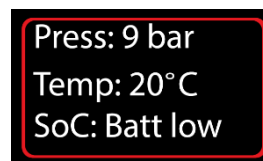
A warning message will be shown on the main screen.



Red border:

TPMS sensor is active and one or more conditions are at a critical level.

A warning message will be shown on the main screen.



NOTICE



- Depending on a change in the outside temperature, the low tyre pressure warning light may illuminate even if the tyre pressure has been adjusted properly. Adjust the tyre pressure to the recommended pressure again when the tyres are cold and reset the TPMS.

7.13.3 Settings

The unit used to displays tyre pressures in the DIM can be changed to:

- Psi
- Bar

See the Display Settings section earlier in this chapter for details

7.14 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. However, many Terberg tractor applications require a higher tyre pressure than nominal due to load conditions.

Make sure that the tyre inflation meets the requirements as specified below. The pressure for the tyre's load index is shown on the tyre sidewall.

Speed rating (located on the tyre sidewall):

Rating	Speed
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 recommended to avoid the maximum permissible load capacity if the resulting inflation pressure is higher than 1000 kPa (10 bar)'.
- In that situation, either the load must be reduced accordingly, or the tyre and rim manufacturers must be consulted.
- 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 tractor."

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

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

Load index and load per tyre in kg							
Load index	Load kg		Load index	Load kg		Load index	Load kg
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		
Tractor 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.

8 Repair and maintenance

CAUTION

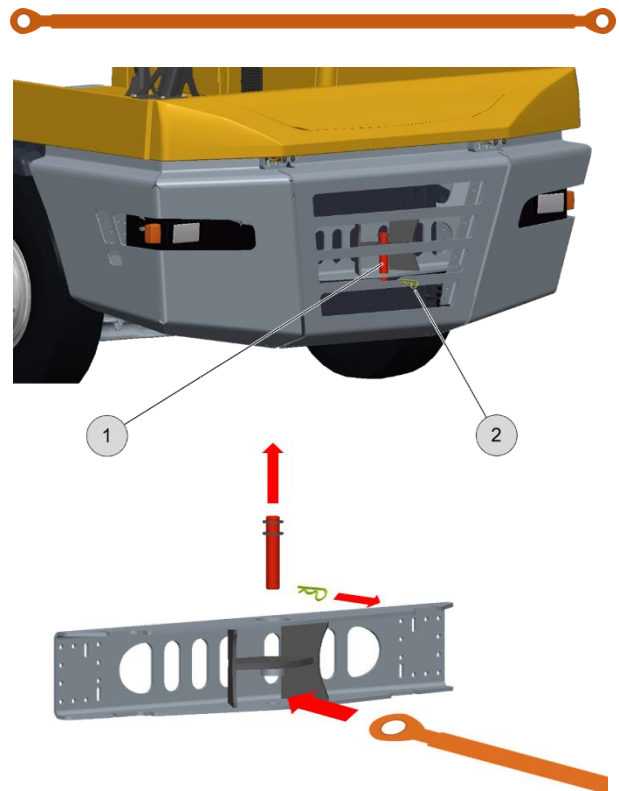


- The maintenance in this manual is for a daily operation only. For a more comprehensive service refer to the Terberg maintenance manual.

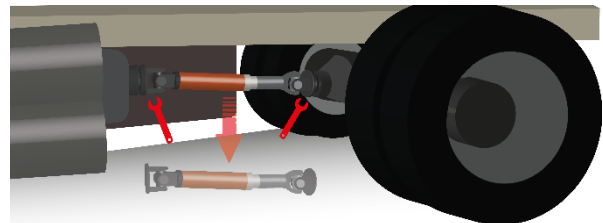
8.1 Towing or pushing

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

- The pin (1) in the front of the steel bumper can be used to lock the tow-push bar in place.
- Always lock the pin with the spring-loaded R-clip (2).



- Before towing, always remove the drive shaft of the towed vehicle, if not, the gearbox of the tractor may damage due to lack of lubrication.



NOTICE



- If you need to tow a tractor, always use a tow bar!
- Before towing, always remove the drive shaft first (see above image).
- When the vehicle is being towed, there must always be a driver in that vehicle.
- If the engine in the towed vehicle is not running, there is no power steering available.
- The steering forces will be very high and the steering speed consequently will be very low.

8.2 Cabin tilting

WARNING



- **Before tilting the cabin, make sure that no persons are present in front, inside or under the cabin or on the tractor.**
- **Ensure that there is adequate clearance above and in front of the tractor before tilting.**
- **If maintenance requires the cabin to be tilted halfway, always use a strut for additional cabin support to maintain safety.**
- **Always install an additional strut under the cabin when it is resting on the blocking pin.**

8.2.1 Before tilting

Ensure that:

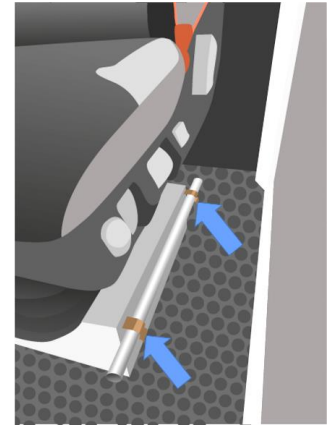
- All loose items in the cabin are removed or fixed, otherwise, the items can hit and break the wind shield.
- There is enough room around the tractor for the cabin to be tilted.
- The seat is locked in one of its end positions if possible.
- The tractor is on horizontal and level ground.
- The engine is turned off.
- The parking brake is applied.
- The gear lever is in Neutral and locked.
- All additional locks that prevent the cabin from tilting are unlocked (optional).
- The ignition key is 'on' if electric power is required during maintenance.
- There are no persons or loose objects inside the cabin.
- The cabin door is closed properly.
- The windscreen washer reservoir is properly closed.

Hydraulic pump rod

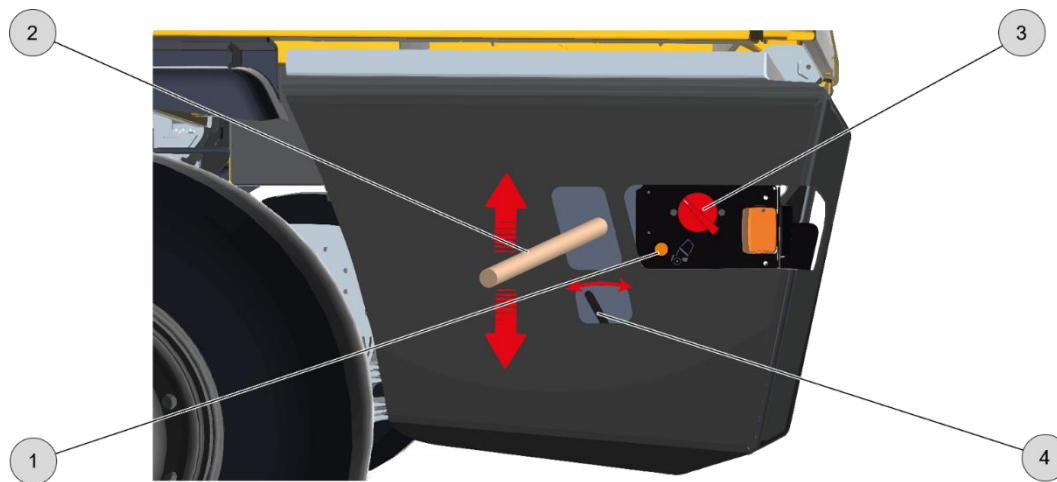
You need a pump rod to operate the hydraulic pump manually.

This rod is stored inside the cabin, on the left side of the driver's seat.

- Remove the pump rod by gently pulling it from the two metal clips (blue arrows).
- After usage, it is important that the pump rod is properly placed back into its storage position.



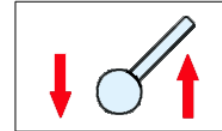
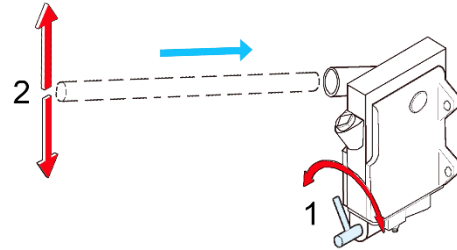
8.2.2 Operating components



Pos.:	Type:	Description:
1	Switch	Switch for electrical tilting of the cabin (optional).
2	Pump rod	Rod to operate the hydraulic pump manually.
3	Main switch	Electrical main switch for switching on and OFF electrical consumers.
4	Lever	Lever for change of direction when the cabin must be tilted or lowered. <ul style="list-style-type: none"> ■ To tilt: turn lever clockwise. ■ To lower: turn lever anticlockwise.

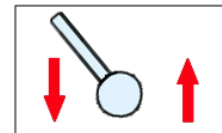
8.2.3 To tilt the cabin with the hydraulic hand pump

- Turn lever (1) on the hydraulic pump to the UP position, 1/4 turn clockwise to the stop (arrow UP).
- Use pump rod (2) to pump the cabin upwards until it has reached its maximum tilt position.
- Secure the extra safety locking bar with a 6 mm retaining pin.



8.2.4 To return the cabin to its normal position

- Carefully remove the 6 mm retaining pin from the safety locking bar 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, 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 cabin.
- Pump the cabin down to its lowest position. Keep pumping until pump resistance is felt.
- Refit and secure the safety lock bolt.
- Return the cabin tilt bar to the storage position.
- The lever on the hydraulic pump must be turned in the DOWN position when driving.



Mechanical hook

The movement of the tilting cabin is restricted by a mechanical hook under the cabin.

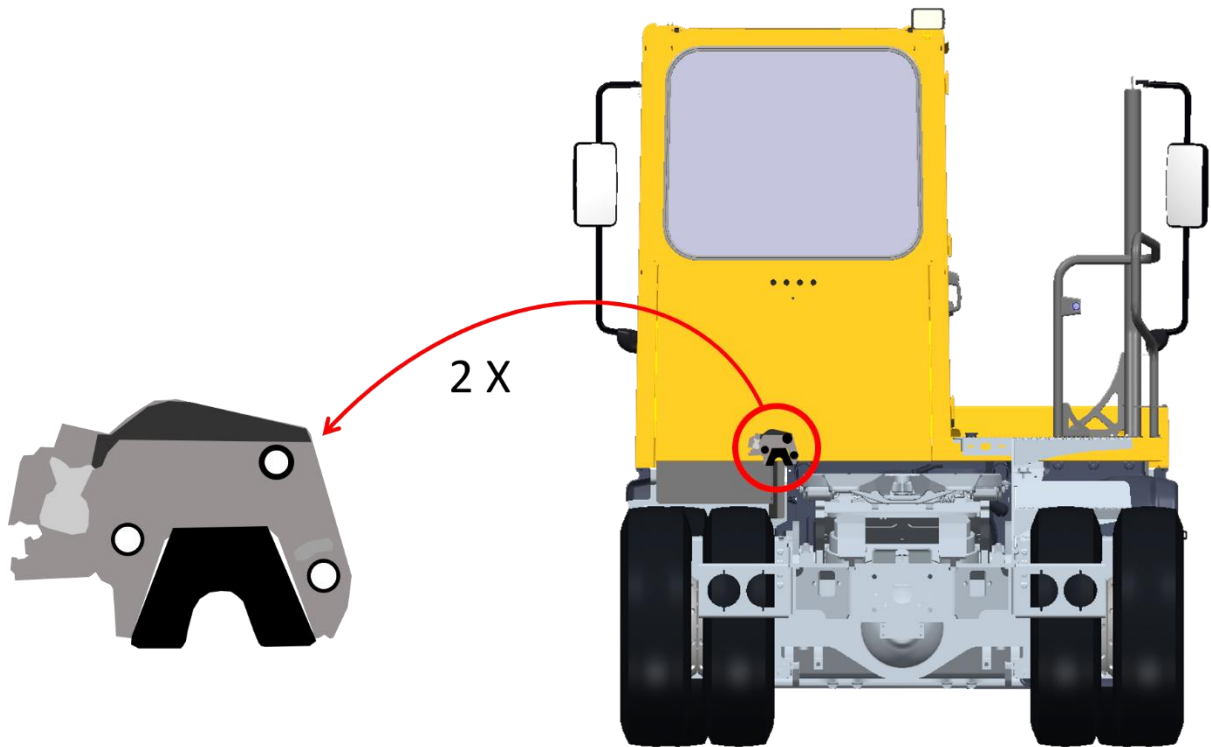
- The mechanical hook is hydraulically operated and due to the pressure build up during the first stage of pumping, the lock will be released at a certain hydraulic oil pressure before the cabin starts to tilt.
- When the cabin must be moved back, the lever (1) must be turned anticlockwise to change the hydraulic oil stream.
- When the cabin is completely lowered in the driving position, it will automatically fit into the cabin safety locking mechanism.

NOTICE



If the pressure in the cabin tilting system fails to increase after pumping, there might be a problem with air in the system or the lever for direction is not positioned correctly.

Cabin safety lock



- Below the driver seat, under the cabin, there are two locks that keep the cabin in place when the tractor is in operation. Whenever the cabin must be tilted, the two locks must be unlocked first. This will automatically proceed when the hydraulic pressure in the tilting circuit is built up.
- Before the actual cabin tilting starts, the two locks will be hydraulically unlocked first.

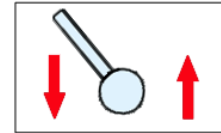
Attention:

Preferably tilt the cabin fully forward, the cabin is then in a safe position (it cannot fall back).

- If for whatever reason a full tilt of the cabin is not desired, you can stop at any time. The cabin is then however **not** in a safe position and needs to be supported. In case any work needs to be done underneath the cabin/around the vehicle.
- When the cabin locks are not yet locked, the DIM will notice the driver by means of a tell-tale warning. Whenever the cabin is tilted back, but not locked properly, this tell-tale continues to alert the driver.

8.2.5 To turn the cabin backward

- Move the lever anti-clockwise to the 'down' position (indicated by an arrow pointing down).
- Carry out a final check to ensure that no loose objects (e.g. tools) have been left under the cabin.
- Insert the pump rod into the hydraulic pump and operate the pump until the cabin moves backward.
- Keep pumping until resistance is felt, (= cabin tilt cylinder fully retracted).
- Leave the lever in the 'DOWN' position and store the tilt bar in the cabin.



8.2.6 To tilt the cabin halfway

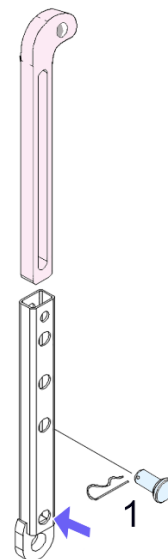
WARNING



- **Terberg strongly recommends that maintenance is carried out only when the cabin is fully tilted forward. However, some maintenance requires the cabin to be tilted halfway.**
- **If maintenance requires the cabin to be tilted halfway, always use a strut for additional cabin support to maintain safety.**

Method:

- Tilt the cabin manually as described earlier in this chapter.
- Take the blocking pin (1) from its storage location and insert it in one of the holes to define the cabin's rest position. Secure the blocking pin with a retaining clip.
- Tilt the cabin backwards until the weight rests on the blocking pin. Do not increase the pressure in the system by pumping any further.
- Place the intended safety bar between the cabin and the chassis to prevent the cabin from falling back, see the instruction stickers.
- Move the direction lever clockwise to the UP position.



To tilt the cabin backwards from a halfway position:

1. Tilt the cabin fully forward.
2. Remove the retaining clip out of the blocking pin.
3. Remove the blocking pin and put it in its storage location at the far end of the tilt limiter.
4. Secure the blocking pin with the retaining clip.
5. Follow the steps as described in the 'Tilting cabin backwards' subsection.

Note: The blue arrow indicates the location of the storage hole of the blocking pin.

8.2.7 To tilt and to lower the cabin electrically (optional)

The procedure of electrical cabin tilting and lowering is different from the manually way of working.

WARNING

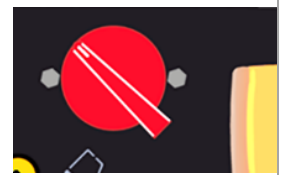


- Always read and understand the paragraphs 8.2.1 & 8.2.2 before you tilt the cabin electrically.
- Ensure the cabin is fully tilted before carrying out any work underneath it.

NOTICE



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

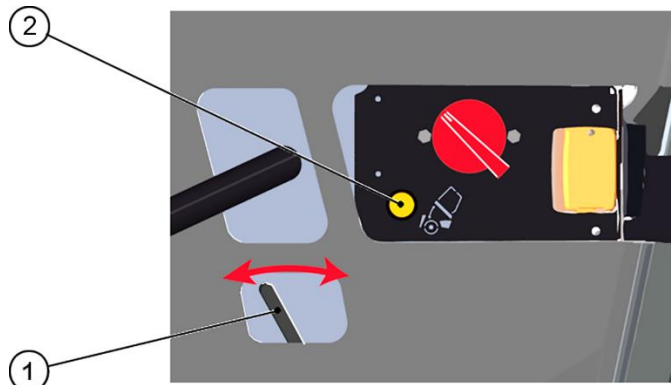


To tilt the cabin electrically

- Turn lever (1) in the lift direction, clockwise.
- Press switch (2), the cabin starts the tilt process.

To lower the cabin electrically

- Turn lever (1) in the down direction, anti-clockwise.
- Press switch (2), the cabin will lower.



8.3 Tractor cleaning

Regular and correctly performed cleaning maintains the value of your tractor and prevents corrosion and paint damage. Remember to wash more often in winter conditions or other dirty driving conditions. Think about the environment and use washing facilities that take care of waste from washing in an environmentally sound manner. Use environmentally friendly cleaning agents as far as possible. Wastewater from cleaning the tractor contains chemicals and pollutants that are bad for the environment. Use a facility where the wastewater is collected.

WARNING



- **Do not wash the tractor if any electrical connectors in the traction voltage system are not fully connected or if the tractor is disassembled in any other way.**
- **Make sure that the cover for the charging inlet is securely fastened and that it fully covers the charging inlet before you wash the tractor.**

8.3.1 High pressure washing

Be careful when washing the tractor with a high-pressure washer. If water and dirt penetrate into components it can cause damage over time.

Do not use a high-pressure washer to clean the following:

- Traction batteries.
- Components in the traction voltage system.
- Universal joint crosses.
- Support bearings.
- Sliding interfaces.
- Joints.
- Sealings.
- Connectors.
- Electrical components.
- Air inlets.
- Ventilation.
- Oil reservoirs.

Tyres and air suspension bellows can be cleaned with a high-pressure washer, but do not use pulsating high pressure as it can damage them. The damage is not visible but may eventually cause tyres or bellows to rupture.

NOTICE



Minimum distance between the high-pressure nozzle and the washing surface:

- Approximately 100 cm with a round, concentrated jet.
- Approximately 50 cm with a flat, widespread jet.

8.3.2 Cabin washing

The Tractor should be washed as soon as it is dirty. Especially in winter when road salt and moisture can cause corrosion.

The following points must be observed to prevent paint damage and to achieve good results when washing:

Washing procedure

Use a pressurised washer primarily. For dirt that cannot be removed using this method, try to remove with a brush or sponge and cleaning agent of the type best suited for the type of dirt. You risk scratching the paint using brush-washing without high-pressure washing beforehand or by washing in brush washers that are poorly maintained (worn, dirty brushes etc).

Washing detergent

Prevent using strong alkaline agents (pH >12). Rinse with plenty of cold water before chemicals are applied if the temperature is above 30°C. Wash small areas and then rinse clean so that long exposure times or drying chemicals is prevented.

WARNING



- **Do not wash the tractor if any electrical connectors in the traction voltage system are not fully connected, or if the tractor is disassembled in any other way.**
- **Before you wash the tractor, make sure that the cover for the charging inlet is securely fastened and that it fully covers the charging inlet.**
- **When washing the windscreen, ensure that the windscreen wipers are switched off, otherwise there is a risk of fingers being trapped by the wiper blades.**
- **Never spray water directly onto the traction batteries or other components in the traction voltage system.**
- **Do not spray water directly onto sealings, gaskets or electric equipment (such as cables or connectors) in the 24 V system.**

- Be careful with high-pressure cleaning of joints, axles and other moving parts where water and dirt can enter.
- Prevent flushing away lubricant. If you notice that lubricant (grease) is washed away, immediately re-lubricate the location.
- After washing the Tractor must be lubricated unless a central greasing system is installed. Test the brakes immediately after washing.

Polish and wax

Over time the cabin paint may appear slightly worn out and may have lost the shining appearance. This process can be slowed down to a minimum by regularly waxing the cabin.

If the cabin paint deteriorates then use a mild form of polishing agent. Consider the recommendations from the manufacturer of the products as well as the following general rules.

First wash the Tractor in accordance with the above and allow it to dry. Then use a polishing agent or deep cleaning agent with only a small amount of abrasive components.

Wax with a liquid wax. Only use clean cloths/rags, etc. Work over the paint surface applying moderate pressure.

Interior care

To maintain the condition of the interior and a good work environment the inside of the Tractor must be cleaned regularly.

A well-maintained interior also helps to maintain the value of the Tractor.

Remember that stains are always a lot easier to remove immediately, before they have had time to dry out.

8.3.3 Washing upholstery

Textiles

First vacuum clean to remove loose dirt. Then use a foam cleaning agent to lift away remaining dirt. Prevent scrubbing with hard brushes.

When all the textile surfaces are treated, let them dry overnight. Vacuum clean thoroughly to remove the dry foam and remaining dirt.

For the seats, beds and textile mats, water and a synthetic washing agent can be used. However, never use water or water-based cleaning agents on the headlining and wall panels.

Vinyl

Water and a synthetic washing agent can be used.

Headlining and wall panels

Never use water or water-based cleaning agents.

Seat belt

Water and a synthetic washing agent can be used.

Floor mats and floor upholstery

Vacuum clean and brush clean. Wash with water occasionally, especially during the winter.

8.3.4 Remove stains

Treat stains as quickly as possible because the longer the stain is untreated, the more difficult it will be to remove it.

Textiles

Remove loose particles of stains. Pick up as much as possible with dry rags. Vacuum clean around the stain so that dirt around the stain is not dissolved. Treat the stain from the outside inwards towards the middle, with stain remover. Dry off parts of the stain that are dissolved. Treat the stain again and dry off dissolved parts. Continue until the whole stain is removed.

Be very careful with the amount of stain remover, to prevent the stain dissolving and becoming larger.

Vinyl

Never scrape or rub. Never use strong solvents such as petrol, white spirit or alcohol.

8.3.5 Maintenance of steel rims

Steel rims are often exposed to different types of dirt such as road dirt, oil, asphalt, tar and brake dust. To protect the rims from discolouration, oxidation and unnecessary wear, regular maintenance is required. For additional protection a

protective wax must be used, e.g. when driving in slush, salted roads or environments close to the sea.

- Damage to the rim's paint must be remedied immediately to prevent corrosion.
- Clean the rims regularly. First flush with water, preferably using a high-pressure washer.
- Use a brush or sponge to clean the rim.
- For tough dirt, an alkaline cleaning agent (pH>7) may be used.

8.4 Changing wiper blades

1. Lift the wiper arms away from the windscreen.
2. Depress the plastic retaining clip.
3. Move the washer nozzle if it is in the way.
4. Pull the wiper blade away from the wiper arm.
5. Fit a new wiper blade to the wiper arm.

8.5 Paintwork damage

Paint is an important part of the Tractor's rust protection and should therefore be checked regularly for damage. Paint damage requires immediate treatment to prevent corrosion. The most common types of paint damage, and the damage you can repair yourself, include the following:

- Minor paint damage and scratches.
- Wear on e.g. wing edges and door thresholds.

NOTICE



- When touching up, the Tractor should be well cleaned and dry and have a temperature above +15°C.

8.5.1 Touch up small paint damage

Tools and materials:

- Rust remover (cold phosphating agent) – tube or can.
- Undercoat – can.
- Spray paint or touch-up pen. The top of the pen contains abrasive paste for aftertreatment.
- Penknife or similar.
- Brush

NOTICE



- If the damage has not reached the underlying metal and a damaged paint layer is still present, the paint can be applied directly after light scraping to remove any dirt.

8.5.2 Underlying metal damaged:

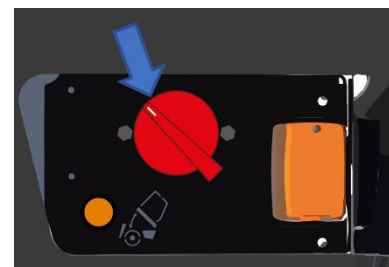
- Scrape off any rust or dirt, down to bare metal.
- Sandpaper the edges of the paint with sandpaper.
- Apply some sort of rust remover, wear Personal Protection Equipment (PPE).
- Stir the primer well and apply several coats using a fine brush.
- When the undercoat has dried, apply the topcoat with a brush.
- Make sure the paint is stirred well and apply several thin coats and allow to dry between applications.
- Wait for a few hours, and then apply finishing treatment.

8.6 Electrical equipment

Set the main switch to the OFF position when you need to disconnect the electrical system of the tractor.

Main switch

The main switch is located near the right front indicator light. It is mandatory to use the main switch to connect or disconnect the power supply to the rest of the tractor. When the tractor is not in operation, turn the main switch to the OFF position.



The engine will only start when the main switch is set to the ON position. Note that the main switch is lockable in OFF position for safety reasons.

CAUTION



- Never disconnect the battery terminals to disconnect electrical power from the tractor.
- If you set the main switch to the OFF position, the electrical system will still partially contain electrical energy for approximately 10 minutes!
- Do not set the main switch to the OFF position when the engine is running!

Emergency stop (optional)

The tractor can be equipped with an emergency switch to stop the engine and to disconnect all electronics at once, in case of an emergency. This red switch can be installed on different positions (for instance inside the cabin and/or under the step on either side of the tractor).

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 electrics and electronics, then:

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



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

WARNING

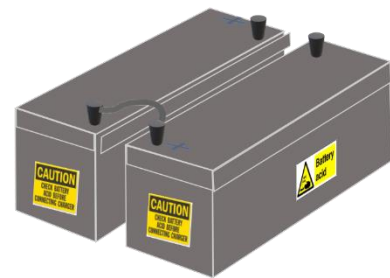


- **Open the cover in case of an emergency only! As soon as the switch is set to the OFF position all the electronics are disconnected and the engine is stopped.**
- **When any of the switches is activated, several fault codes may be set.**
- **Any ongoing cleaning processes of the exhaust system will 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.**

8.6.1 Batteries

The batteries in the tractor are maintenance free and for the driver a restricted area.

The only situation where the driver/operator is allowed to touch the batteries, is in case of a jump start.



DANGER



- **Make sure to connect the positive terminal (+) of the problem vehicle to the positive terminal (+) of the starter vehicle first.**
- **Then the negative terminal (-) of the problem vehicle can be connected to the negative terminal (-) of the starter vehicle.**
- **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.

8.6.2 Fuses, relays and converter

Always replace a fuse or circuit breaker with one of 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 fuses are installed on the printed circuit board (PCB) that can be accessed from the inside of the tractor, behind the service cover. The functions and ratings of the fuses are listed below, including their position number on the PCB.

Fuses SF1 – SF12 are spares. The wiring diagram indicates whether they are used and, if so, their purpose.

Other fuses that are not shown in this list can be found on the wiring diagram.

8.6.3 Fuses

Pos.	Rating [A]	Function
F1	5	Full beam light left.
F2	5	Full beam light right.
F3	5	Dipped beam light right.
F4	5	Dipped beam light left / Supp. sw. fog light rear.
F5	10	LEFT - Parking light / Side Marker / License pl. Illum. / Pos. l. rear / Tail l. rear / Lighting tr. conn. / Lighting roof / Lighting spare.
F6	10	RIGHT - Parking light / Side marker / Lighting Sw. / Dashboard Illum. / Pos. l. rear. / Tail l. rear / Lighting tr. conn. / Lighting roof.
F7	10	Reversing / Fog Light (KL15).
F8	15	Trailer connector (KL15).
F9	15	Wiper front (KL15).
F10	15	Wiper rear (KL15).
F11	10	X07 / Radio / Supp. sw. work l. rear (KL15).
F12	10	Upper dashboard/ Sw. Mirror Adj./Spare Switches (KL15).
F13	20	Electrical window (KL15).
F14	5	Heating control (KL15).
F15	20	Heating fan motor (KL15).
F16	2	ECU YTxx3 CC2 (KL30AR).
F17	2	ECU YTxx3 CC2 (KL30AR).
F18	15	ECU YTxx3 CC2 (KL30AR).
F19	10	Display (KL30AR).

Pos.	Rating [A]	Function
F20	15	ECU YTxx3 CC2 (KL30AR).
F21	15	ECU YTxx3 CC2 (KL30AR).
F22	10	ECU YTxx3 CC2 (KL30AR).
F23	10	Engine (CPC / alternator Mercedes) (KL30AR).
F24	10	Transmission (KL30AR).
F25	5	Heat valve ECU / AC comp. (KL15).
F26	5	Sensor supply 2 (KL15).
F27	5	Hazard sw. / Display / Air suspension / Differential lock / Combi switch / Switch lighting (KL15).
F28	5	Sensor supply 3 (KL15).
F29	5	Sensor supply 1 / Sensor Fuel Filter (KL15).
F30	5	Diagnostic (KL15).
F31	10	Engine (KL15).
F32	10	Transmission (KL15).
F34	15	Supply pump unit SCR / Starting (KL30AR).
F35	15	Hose heating SCR (KL30AR).
F36	15	Supply sensors SCR (KL30AR).
F37	5	Supply switch hazard / Lighting / Ignition / Combi sw. (KL30).
F38	5	Diagnostic (KL30).
F39	10	Reverse / Work light / Horn (KL30).
F40	10	X07 / Interior light (KL30).
F41	15	D+ (KL30).
F42	10	Supply direction indicator trailer (KL30).
F43	1	Supply Voltage Reference 5V (KL15).
F44	15	Brake light (KL30).
F45	10	Working light(s) cabin (KL30).
F46	10	Beacon (KL30).
F47	30	Electrical Cab tilting (KL30).
SF1	max 15	Spare fuse 1 (KL15).
SF2	max 15	Spare fuse 2 (KL15).
SF3	max 15	Spare fuse 3 (KL15).
SF4	max 15	Spare fuse 4 (KL15).
SF5	max 15	Spare fuse 5 (KL15).
SF6	max 15	Spare fuse 6 (KL15).
SF7	max 15	Spare fuse 7 (KL15).
SF8	max 15	Spare fuse 8 (KL15).
SF9	max 15	Spare fuse 9 (KL15).
SF10	max 15	Spare fuse 10 (KL30).
SF11	max 15	Spare fuse 11 (KL30).
SF12	max 15	Spare fuse 12 (KL30).

8.6.4 Relays and converter

Pos.	Function
K01	Relay D+.
K02	Relay motor cab tilting.
K03	Relay main supply KL15.
K04A	Relay heating SCR hose 1.
K04B	Relay heating SCR hose 2.
K04C	Relay heating SCR hose 3.
K07	Relay beacon.
K09	Relay brake lights.
K10CF	Relay working light(s) cabin front.
K10CR	Relay working light(s) rear.
K11	Relay horn.

Pos.	Function
K12	Relay reversing lights.
K13	Relay full beam lights.
K16	Relay parking light(s) left.
K17	Relay parking light(s) right.
K18	Relay dipped beam lights.
K50	Relay spare.
K53	Relay fog light(s).
K54	Relay supply motor pump unit SCR.
K55DL	Relay supply SCR sensors.
K55DR	Relay direction indicator trailer left.
K56	Relay direction indicator trailer right.
K58	Relay air conditioning.
K62	Relay working light(s) / reversing light(s).
K63	Relay spare.
A29F	Relay interval windscreen wiper front.
A29R	Relay interval windscreen wiper rear.
A36	Flasher unit Temperature.
U08	Converter 5 V.

8.7 Headlamp

The exchange of a light bulb can be done by a driver. For other, more complex repairs or replacements, the driver must contact the Terberg Service organization.

8.7.1 Light bulb replacement

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