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TAKEUCHI®

TW80 Wheel Loader

Operation and Maintenance Manual



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TW 80

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Order No. 8016657

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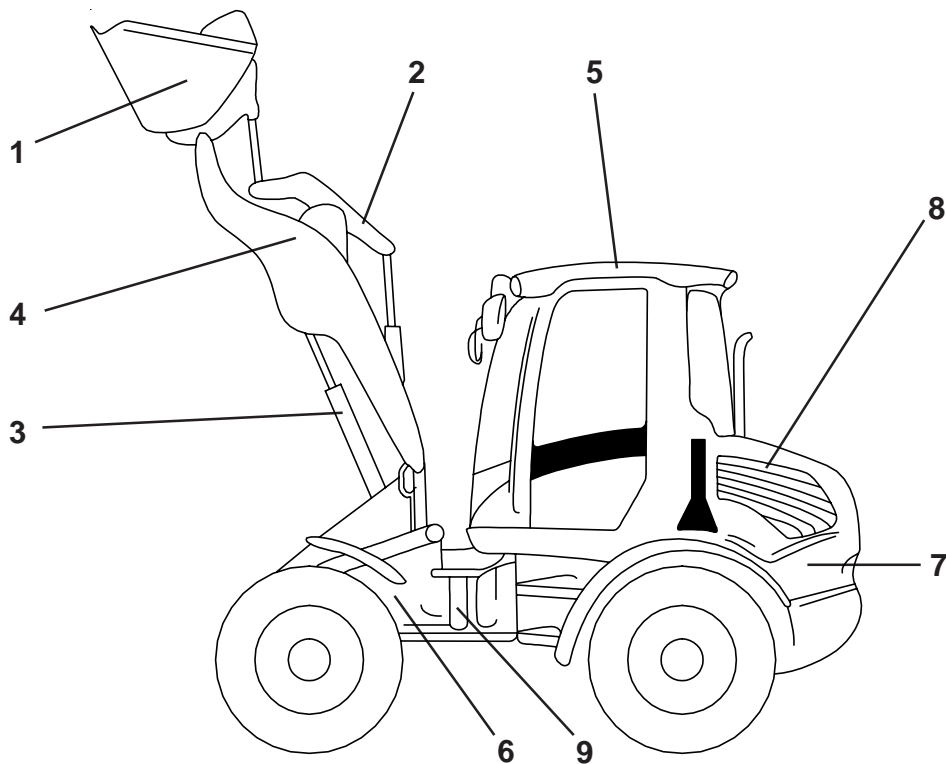
Dealer:

Vehicle Identification number

The vehicle identification number indicates the type and equipment of your wheel loader.

Vehicle Identification number**3 0 1 - - - E 1 2 3 4 5 6****Wheel loader type**☐ 80**1****Engine output**☐ 73 hp/2300 rpm BF4L2011**1****Axles, brake**☐ Multiple disk brake**2****Special version**☐ none**0****Electrical equipment**☐ Standard electrical equipment**C1**

I. Assembly groups - overview



- | | |
|----------------------|-------------------------------|
| 1) Attachment | 6) Front end |
| 2) Working cylinder | 7) Rear end |
| 3) Hoisting cylinder | 8) Diesel engine |
| 4) Hoisting gear | 9) Articulated pendulum joint |
| 5) Cab | |

II. Outline of the contents of this manual

This manual contains the Operating Instructions and is divided into the following sections:

- Notes and safety instructions
- Getting acquainted with the wheel loader
- Starting the wheel loader
- Working with the wheel loader
- Maintenance of the wheel loader
- Faults
- Technical data

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1 General Notes and Safety Instructions

1.1 Notes on the Safety Instructions

The Operating manual contains all the information required for the operation of the TW 80. In addition, all maintenance work to be carried out by the operator or service personnel is described in order to ensure that the wheel loader is always in good operating condition.

Be sure to pay attention to and observe the safety instructions as stated both in the individual sections and in the section "Safety Instructions". These safety instructions are presented in the following manner:

Attention!



The wheel loader is to be exclusively operated by individuals who are both physically and mentally fit and have undergone the appropriate training!

All instructions must be read, understood and observed by the operating personnel before starting the wheel loader.

1.2 Allocation of personnel

It is the responsibility of the owner of the TW 80 wheel loader to see to it that only trained and properly instructed individuals operate the wheel loader.

The driver of the wheel loader must be able to read and understand the warning signs on the vehicle. Ask the driver to confirm this in written form.

Attention!



Make yourself familiar with all the information necessary for the operation of the wheel loader!

- ***Read the Operating Manual.***
- ***In addition, the Safety Regulations for the Operation of Earth-moving Machinery as valid in the country of deployment apply .***
- ***The wheel loader is to be exclusively operated by individuals who are both physically and mentally fit and have undergone the appropriate training!***
- ***The wheel loader must not be operated by individuals under the influence of alcohol or drugs.***

Unknown environmental conditions!

- ***Before starting work, the driver has to make sure that the weather, the condition of the road and the ground permit safe operation.***
- ***Before any operation, check whether the job site presents any dangers. Eliminate them and take adequate precautions, if necessary.***

The owner (or hirer, respectively) of the vehicle is responsible for damages to the wheel loader caused by inexperienced operation or insufficient knowledge on the part of the staff.

1.3 Intended use of the wheel loader

The **TW 80 wheel loader** is intended to be used for loading and unloading material, moving of soil, rocks etc. by means of attachments.

Caution!



When working with attachments, observe the authorized payloads, as indicated in the table below.

The use of attachments or accessories which have not been authorized by Takeuchi causes an immediate and complete expiration of the warranty.

- ***Special tools may be used after consultation with our authorized dealer or with our explicit authorization.***

The wheel loader's cab complies with ISO 3471 (1994). It has been tested in accordance with the acceptance conditions for roll-over protective structures (ROPS), a ROPS certificate has been issued. Modification of the cab is permitted only if approved by the manufacturer within the limits of the certification tests, otherwise the ROPS certificate becomes invalid. No warranty is given for modifications of the cab (drilling / welding) without factory approval!

1.3.1 Load capacity table

Wheel loader type	TW 80
Service weight	12677 lbs
Bucket capacity	1.3 yd ³
Pallet forks:	
Static tipping load, fully articulated	6839 lbs
Load capacity (Vehicle articulated and stability factor 1.25)	5470 lbs
Load capacity (Vehicle articulated and stability factor 1.67)	4103 lbs
Hoisting power, near ground (at a load center distance of 500 mm)	10813 lbs
Bucket:	
Static tipping load: extended	9420 lbs
fully articulated	8294 lbs
Hoisting power:	
Ground level	13567 lbs
Topmost position	9044 lbs
Tearout force	15287 lbs
Torque	11802 lbs

1.4 Safety Instructions

1.4.1 General

Danger!



Utilization in danger zones!

- **Before starting the wheel loader, the operator must be familiar with the special safety requirements for work in this danger zone and check whether the necessary precautions have been taken.**

Caution!



Before transportation, pay attention to the following safety instructions:

- **The wheel loader is to be loaded by experienced and proficient personnel only .**
- **The loading is to be carried out only on horizontal and firm ground.**
- **Do not overload the transport vehicle.**
- **The wheel loader tires are to be freed from snow, ice and mud.**

1.4.2 General use of the wheel loader

Caution!



The wheel loader is to be used in faultless condition only .

- **Carry out the required checks and maintenance work, see chapter 'Maintenance'.**
- **Repair the wheel loader immediately or call a Takeuchi service rep. Do not continue work unless all malfunctions have been repaired.**

Caution!



When working with attachments, make sure to observe the authorized payloads indicated in the table in section 1.3.1!

No warranty is given for attachments without factory approval!

- **Special tools may be used after consultation with the vendor or manufacturer.**

Warning!



Danger of plunging when mounting or descending!

- **Always face the wheel loader, use handles and steps!**
- **Steps and handles are to be kept clean and dry!**
- **Do not use operating elements as handles!**

Danger!

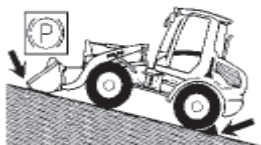
Visibility is adversely affected by dust, fog or other factors!

- Stop the wheel loader or reduce speed until visibility improves.
- The window panes must be clean, non fogging and ice-free.
- Do not hang up clothes obstructing the visibility.

Caution!

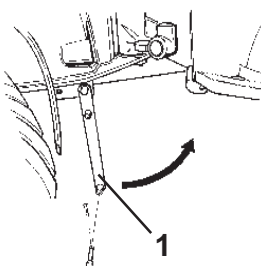
Pay attention to environmental protection!

- Make sure no oil or fuel penetrates the ground, pollutes water or leaks into the sewer system.
- When working in protected areas, use environmentally friendly hydraulic oil.

Danger!

Danger of injury!

- Secure the wheel loader against rolling.
- Lower the attachment to the ground.

Danger!

Risk of crushing or death!

- Before working in this section, insert the anti-buckling device (1).
- After completion of maintenance or repair work, the anti-buckling device is to be brought into operating position again.

1.4.3 Working with the wheel loader

Danger!

Individuals are not allowed to stand within the working range of the wheel loader!

- The job site is to be secured against unauthorized trespassing.
- Before and while backing up, look to the rear.

Warning!

At blind places, ask someone to guide you.

- Hand signals and instructions are to be agreed on in advance!

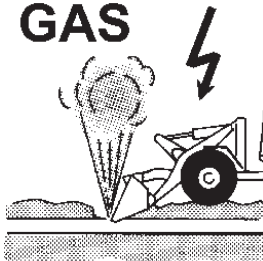
Danger!

Danger of injury when establishing a conductive connection!

- Before working on the electrical installation, disconnect the ground strap from the battery and disconnect the printed circuit board as well.

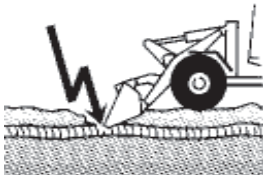
Danger!

GAS



Conductive connections, explosions, poisoning, high-pressure jets caused by damaged pipes can be fatal!

- Watch out for subterranean objects!
- Obtain information on the location of lines and tubes and mark their positions on the job site.
- If necessary, have them taken out of operation.

Danger!

Danger to life!

Never leave the cab in the event of a conductive connection!

- Move the attachment out of the working area.
- In case this is impossible:
 - Stay in the cab.
 - Advise individuals on the job site to keep away.
 - Have the power switched off.

Warning!

Risk of being run over or falling!

- Carrying passengers on the wheel loader is prohibited!
- Do not lift or transport people by means of the attachment!

Caution!

Dropping objects! Collapsing sand walls!

- See the National Safety Regulations.

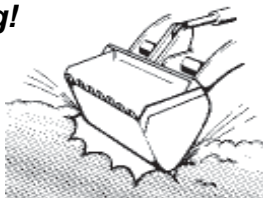
Caution!

Danger of poisoning when working in closed spaces!

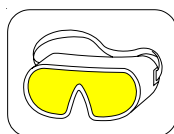
- Ensure sufficient aeration and de-aeration.

Danger!**Sliding or breaking in of the wheel loader!**

- Exercise extra caution when close to water!
- Before starting to work, check both the ground's soil bearing capacity and its inclination.

Warning!**Material damage!**

- The attachment is not to be used as a demolition tool!
- Avoid extreme situations.

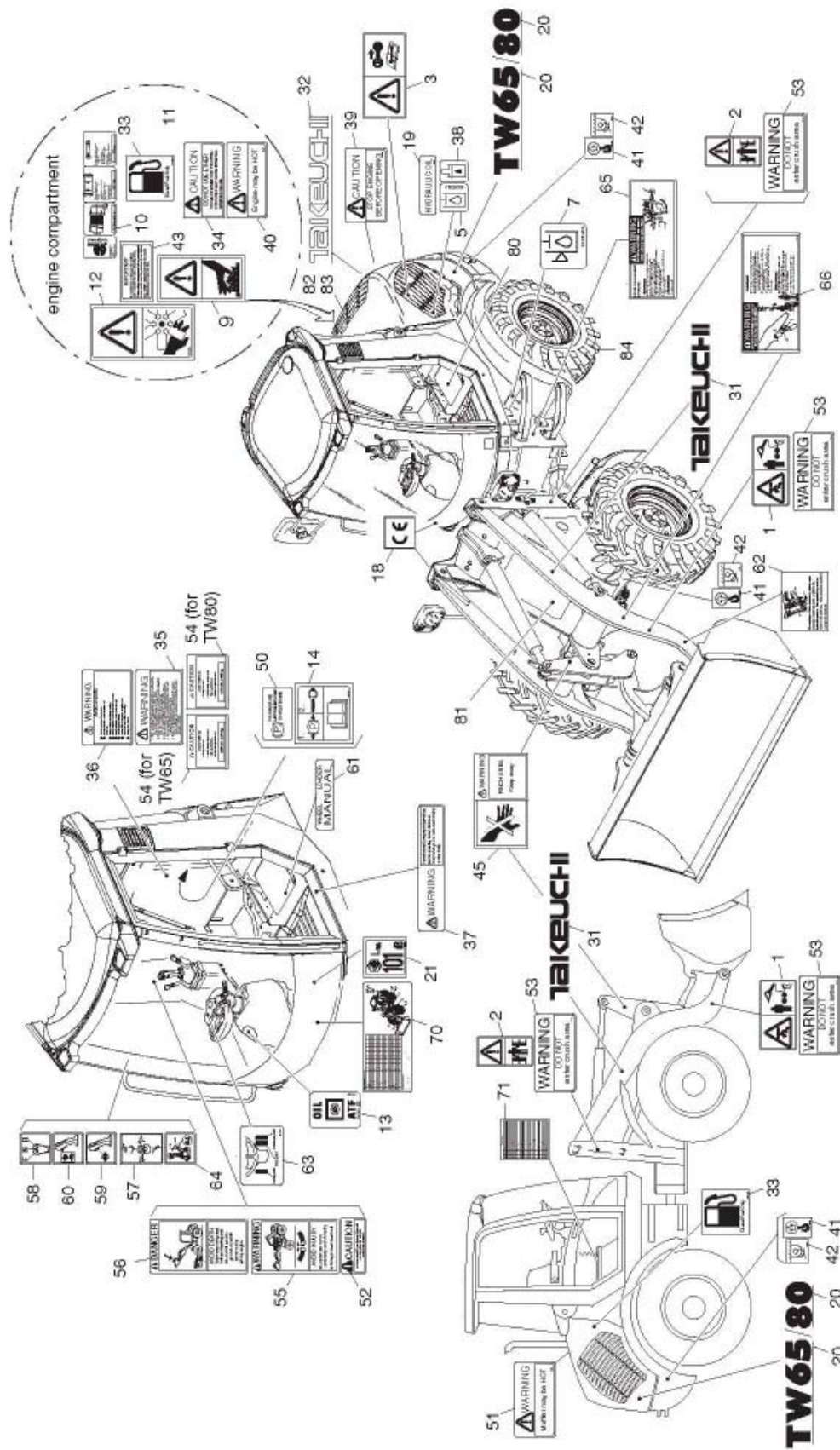
Danger!**Eye injuries caused by splinters!**

- Be sure to wear safety glasses if there is any risk of splinters splitting off while working with a hammer or other tools.

1.4.4 Safety instructions for emergency situations

Caution!**The emergency kit can save lives!**

- Always keep a first-aid kit and a fire extinguisher close at hand.
- Make sure the emergency kit is always ready for use.
- Familiarize yourself with using the emergency kit beforehand.

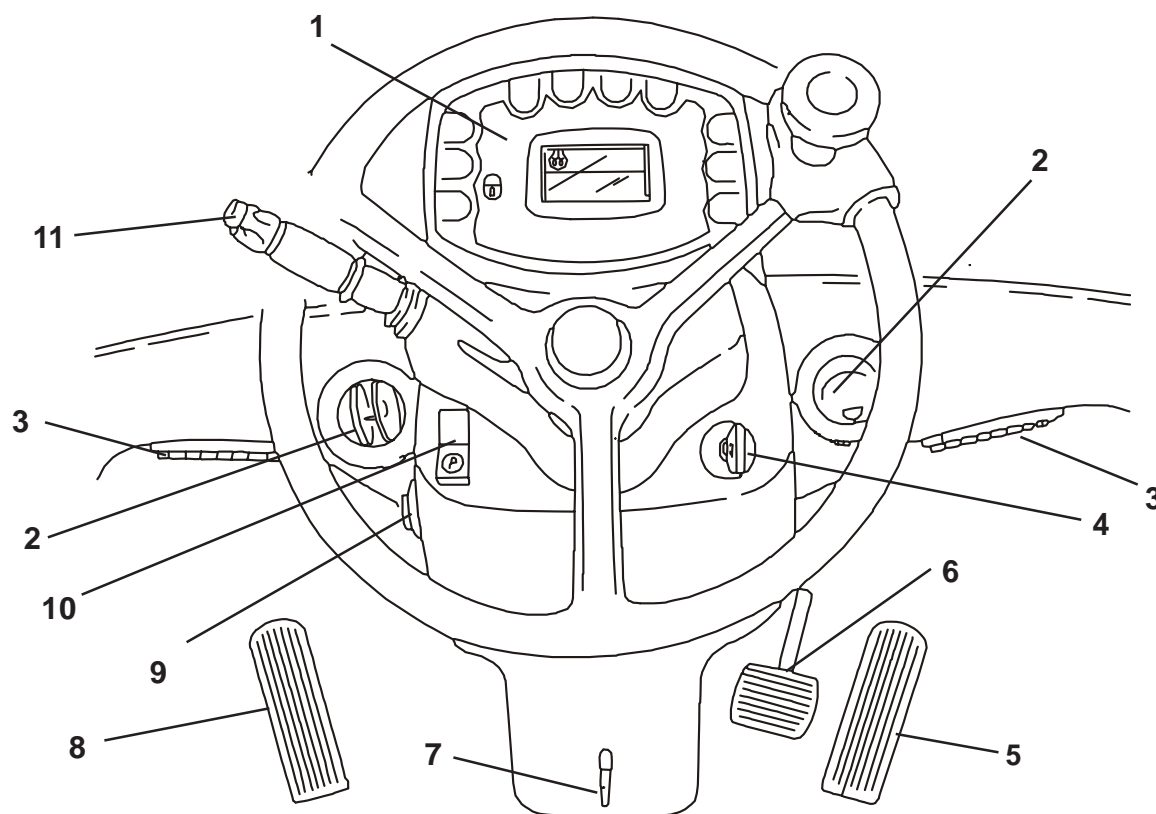


2 Getting acquainted with the wheel loader

2.1 Warning notices and adhesive labels

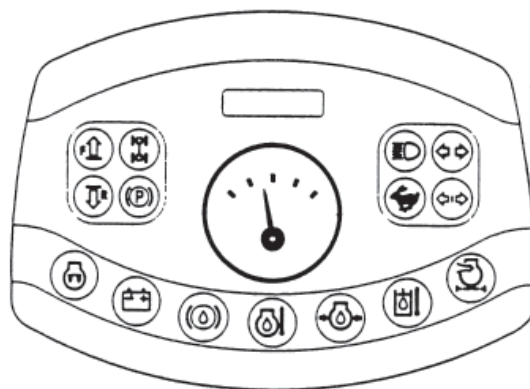
- | | |
|---|--|
| 1) Danger of injuries! | 43) Cleaning the oil cooler |
| 2) Risk of bruises! | 45) Warning - Pinch Area! |
| 3) Stop engine and pull out ignition key! | 50) Parking brake |
| 5) Hydraulic oil | 51) Warning - hot muffler |
| 7) Hydraulic oil level | 52) Caution - hydraulic coupler |
| 9) Danger of burns! | 53) Warning - crush area |
| 10) Maintenance air filter | 54) Caution - avoid overturn |
| 11) Maintenance diesel engine | 55) Warning - wear safety belt! |
| 12) Risk of cuts! | 56) Danger of death |
| 13) Oil ATF | 57) Joystick |
| 14) Starting instructions | 58) Joystick |
| 18) CE label | 59) Joystick |
| 19) Hydraulic oil | 60) Joystick |
| 20) TW 80 | 61) Wheel loader manual |
| 21) Noise level | 62) Crossover cock |
| 31) Logo Takeuchi red | 63) Pedals |
| 32) Logo Takeuchi white | 64) Joystick - extend/retract |
| 33) Diesel fuel only | 65) Warning - protection against buckling |
| 34) Do not use ether | 66) Warning - lift arm |
| 35) Warning - Risk of injury or death | 70) Check list maintenance |
| 36) Warning - Risk of injury | 71) Fuses |
| 37) Warning - Risk of injury or death | (for positions 80-84 see spare parts list) |
| 38) Hydraulic oil level | |
| 39) Stop engine | |
| 40) Warning - hot engine | |
| 41) Loading lug | |
| 42) Tying lug | |

2.2 Operating and control elements in the cab



- | | | | |
|---|-------------------------------|----|---|
| 1 | Dashboard (including display) | 7 | Steering column adjustment |
| 2 | Air vents, top | 8 | Inching pedal |
| 3 | Air vents, bottom | 9 | Hazard warning light |
| 4 | Ignition lock | 10 | Parking brake (not shown:
parking brake in axle) |
| 5 | Accelerator pedal brake | 11 | Steering column switch |
| 6 | Brake inching pedal | | |

2.3 Dashboard



3 Starting the wheel loader

3.1 Before entering the wheel loader

CAUTION!



Familiarize yourself with all information necessary for the operation of the wheel loader!

- **Read the Operating Manual.**
- **In addition, the National Safety Regulations for the Construction and Operation of Earth-moving Machinery apply.**
- **When in doubt, contact your vendor.**

3.2 Leaving and entering the wheel loader

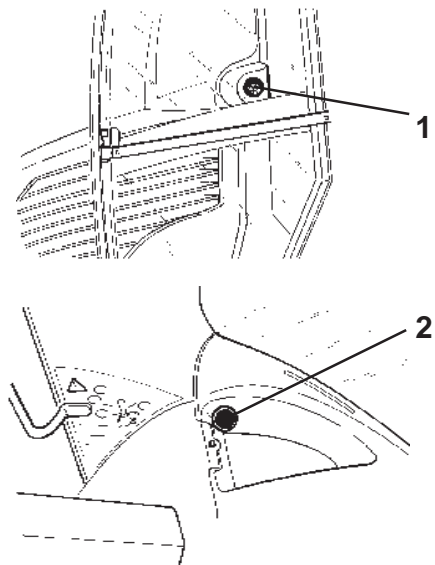
WARNING!



Danger of plunging when mounting or descending!

- **Always face the wheel loader, use handles and steps!**
- **Steps and handles are to be kept clean and dry!**
- **Do not use operating elements as handles!**

- Unlock and open the left door.
- Open the door and let it snap into the door lock (1).
- When opening the right door, let it snap into the door lock (1).
- Make sure that the doors have snapped into the door lock.
- To unlock the doors, press the release button (2) in the cab.
- After unlocking the doors, close them immediately .



WARNING!



Risk of bruises!

- **Close both doors completely or let them snap into the door locks (1).**
- **Doors, windows, hoods, flaps etc. must be secured against unintended closure.**

3.3 Adjusting the driver's seat

Sit down and familiarize yourself with the functions of your seat.

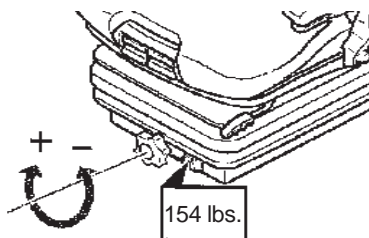
The seat is to be adjusted and positioned **before** starting the wheel loader.

DANGER!



In case the seat needs to be readjusted, always stop the wheel loader before making the adjustments.

3.3.1 Weight adjustment



The individual operator's weight should be adjusted in no-load condition by turning the weight regulating lever. The setting is displayed at the vision panel.

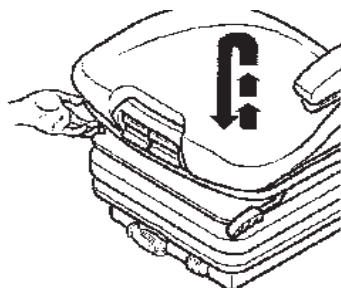
The seat has been designed for a max. weight of 287 lbs.

NOTE!



In order to avoid damage to your health, the individual operator's weight setting should be checked and adjusted before each operation.

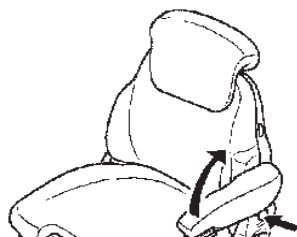
3.3.2 Height adjustment



The height can be gradually adjusted.

Lift the seat to the required height until it audibly locks into place. As soon as the seat is lifted above the last position (stop), the seat lowers itself into the lowest position.

3.3.3 Arm rests

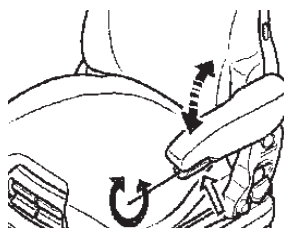


If necessary, the left arm rest can be tilted backwards and its height adjusted.

In order to adjust the arm rest height, the round cap (arrow) is to be removed from the cover.

Loosen the hexagon nut (wrench size 13mm), move the arm rest to the desired position and tighten the nut. Push the removed cap onto the nut.

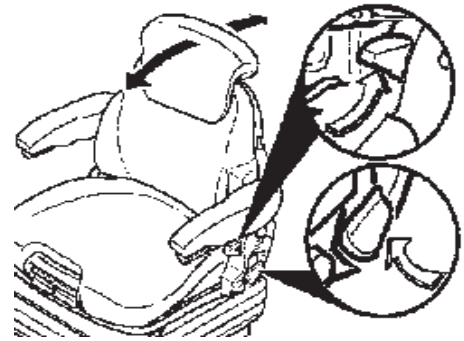
3.3.4 Arm rest inclination



The inclination of the arm rests can be adjusted by turning the hand wheel (arrow).

3.3.5 Back-rest adjustment

The back rest can be adjusted by means of the locking lever (arrow).



NOTE!

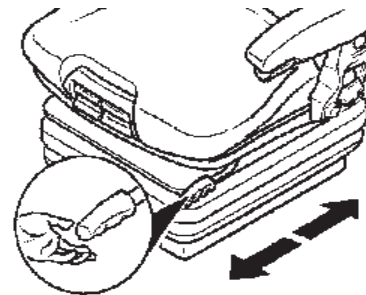


The locking lever must snap into place in the desired position. After locking, make sure that the back-rest cannot be moved to another position.

3.3.6 Longitudinal adjustment

The adjustment in longitudinal direction is enabled by pulling the adjusting lever.

The locking lever must snap into place in the desired position. After locking, make sure that the back-rest cannot be moved to another position.

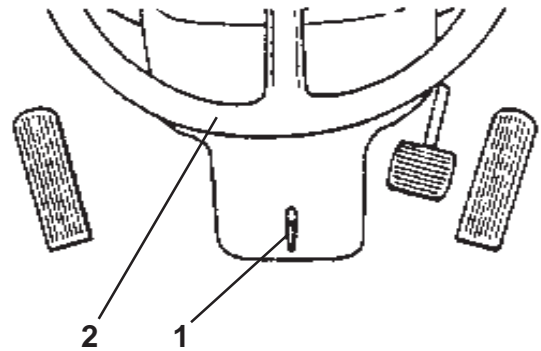


3.3.7 Safety belt

The safety belt is situated at the seat, below the right arm rest.

3.4 Steering column adjustment

- 1) Step on the steering column adjustment (1) below the steering wheel (2).
- 2) Move the steering column to the desired position.
- 3) Let go the steering column adjustment (1).



CAUTION!

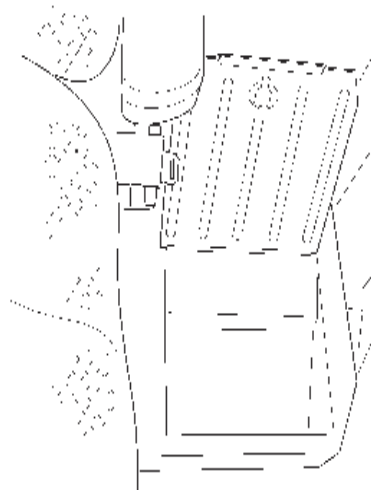


Accident hazard!

Do not adjust the steering column while the wheel loader is in motion!

3.5 Tool Storage

The tool storage is at the left side, next to the seat.

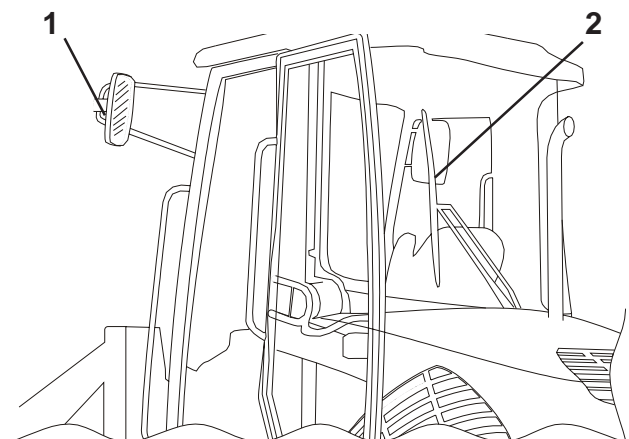


3.6 Indoor lighting

The indoor lighting is on the left side inside the cab.

3.7 Exterior rear view mirrors

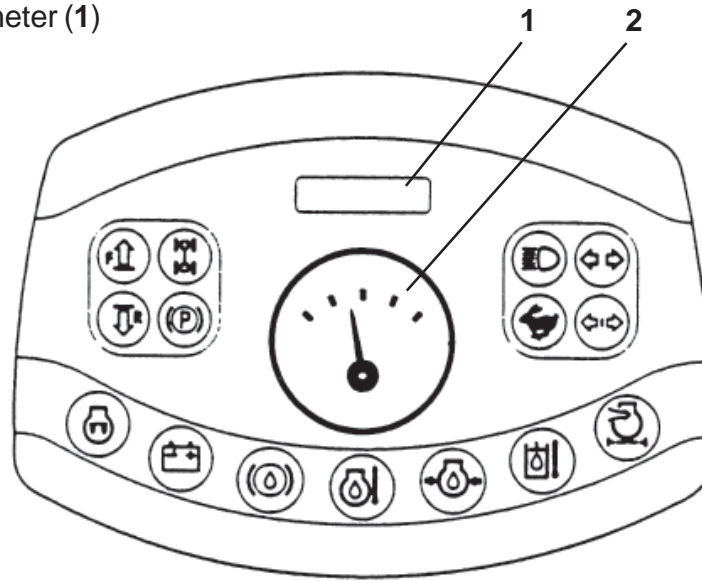
The rear view mirrors are on the exterior of the cab, on the right (1) and left (2) side.








3.8 Dashboard

Operating hour meter (1)

Fuel gauge (2)



	Indicator forward travel	Lights up when driving forward.
	Indicator reverse travel	Lights up when in reverse gear.
	Indicator differential lock	Lights up when differential lock is activated.
	Indicator parking brake	Lights up when parking brake is actuated. Diesel engine can only be started when the parking brake has been actuated. Driving is suspended when parking brake is actuated.
	Indicator country beam	Light indicates that the country beam is on.
	High Speed Travel	(hydraulic)
	Indicator lamp turn signal wheel loader	Lamp flashes when turn signal is actuated.
	Indicator lamp turn signal trailer	Lamp flashes when turn signal is actuated.
	Indicator lamp preheating	LED (yellow) lights when preheating the diesel engine (ignition lock position I). Goes out as soon as operating temperature has been reached.
	Charge control lamp	LED (red) lights up when starting, but must go out during operation!

	Brake fluid	Lights up when brake fluid level is too low, see chapter 3.7.1 "Checking the brake fluid".
	Engine oil temperature	If this lamp lights up, immediately stop the wheel loader and let the diesel engine run at idle speed, in order to let the engine oil cool down! The indicator lamp lights up at an engine oil temperature of 275 °F.
	Diesel engine (oil pressure)	In case this lamp lights up during operation, immediately stop the diesel engine!
	Hydraulic oil temperature indicator	Lights up when the temperature of the hydraulic oil rises above 198 °F. Stop the wheel loader. Determine the cause. (see chapter 4.1, "Error messages")
	Engine air filter	If yellow LED lights up, determine the cause. (see chapter 4.1, "Error messages")

3.9 Starting the engine

3.9.1 Before starting

Carry out the following checks:

- 1) Engine and hydraulic oil levels.
- 2) Fuel level.

DANGER!



Danger of injury!

Always fasten the seat belt before starting the engine!

3.9.2 Starting the engine

- 1) Insert the ignition key into the ignition lock (2).
- 2) Actuate the parking brake (1).
- 3) Turn the ignition key to the right:

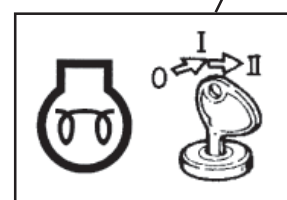
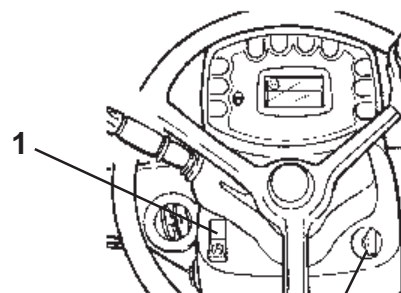
Position I:

- Preheat until indicator (3) goes out.

Position II:

- Start

As soon as the engine is running, immediately let go the ignition key. When starting the engine for the first time, drive the wheel loader until it reaches operating temperature.



3.10 Driving

DANGER!



Danger of injury!

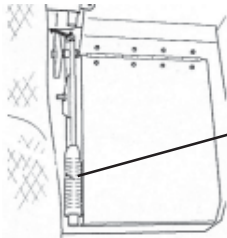
- **Check whether the Quick Disconnect Coupler is securely locked.**
- **Before putting the vehicle in motion, do not forget to lift the loading shovel/attachment from the ground!**
- **Make sure your speed is appropriate to the local conditions, the load and the position of the attachment.**

NOTE!

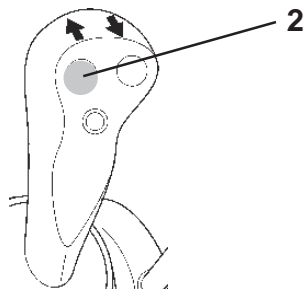


As long as the parking brake/hand brake is pulled, driving the wheel loader is not possible.

3.10.1 Driving forward



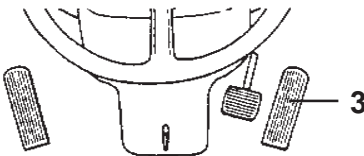
1) Release the parking brake/hand brake (1).



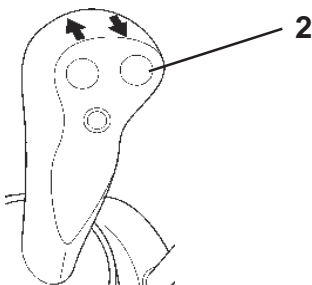
2) Press the upper left button (2) on the control lever.

3) Increase the diesel engine speed by stepping on the accelerator pedal (3).

4) The wheel loader starts to move forward.



3.10.2 Driving backward



1) Release the parking brake/hand brake (1).

2) Press the upper right button (2) on the control lever.

3) Increase the diesel engine speed by stepping on the accelerator pedal (3).

4) The wheel loader starts to move backward.

3.10.3 Changing direction

Steering

The travel direction can be changed by means of the steering wheel (1).

Turn signals

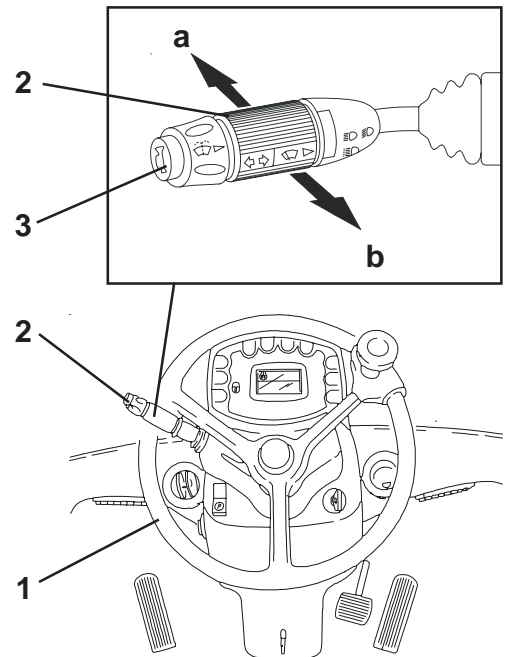
The turn signals are actuated by means of the steering column switch (2).

Right: Push the steering column switch forward (a).

Left: Push the steering column switch towards the seat (b).

Horn

Press the button (3) towards the steering column.



3.10.4 Shifting gears

Select a gear by means of the switch (4) on the control lever.

The currently selected gear is indicated on the display.

Travel speed Low Speed (hydraulic):

0 - 4.7 mph

Characteristics Low Speed:

Slow speed, high performance.

High Speed (hydraulic):

0 - 12.4 mph (off-road speed)

Characteristics High Speed:

Both slow speed (high performance) and highest possible speed (low performance).

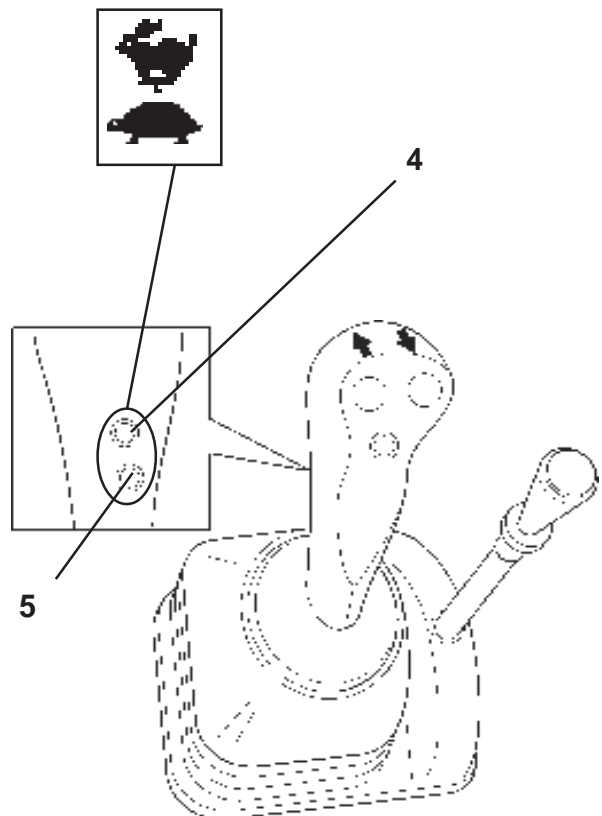
Gears may be shifted with the wheel loader in motion.

3.10.4.1 Differential lock

On wet or soft soil, the differential lock serves to enhance the thrust transfer.

However, it can only be used with gear I and must be deactivated when driving on roads or concrete!

The differential lock remains activated as long as the push button (5) is pressed down. It is automatically turned off at the next change of load if the button is released.



3.10.5 Safety instructions related to driving

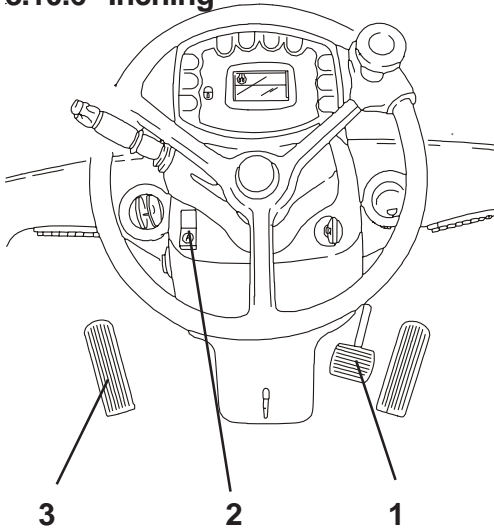
DANGER! Danger of injury!



Shifting from the second gear to the first gear equals full braking and will cause the wheel loader to come to an instant stop!

- **Shift only at walking speed or with the wheel loader stopped.**

3.10.6 Inching



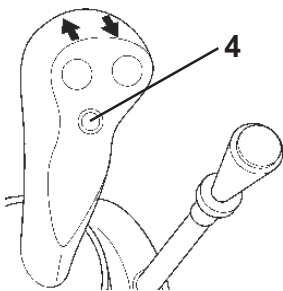
Use the inching pedal (3) in order to reduce the travel speed while running at the highest engine speed.

Thus, the entire engine performance is made available to the loading hydraulics.

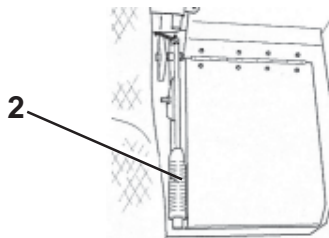
3.10.7 Braking

The brake pedal (1), a hydraulically operated foot brake, is equipped with an additional braking function operated by the travel hydraulics.

3.10.8 Stopping



- 1) Decrease the engine speed.
- 2) Use the inching pedal (3) to stop the wheel loader.
- 3) Put the drive to the zero position by means of button 4.
- 4) Actuate the parking brake / hand brake (2).



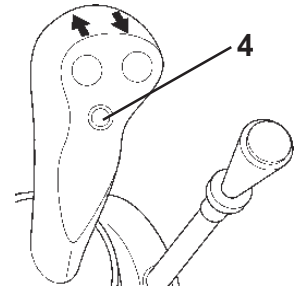
DANGER!



Switching to the zero position while driving or before the wheel loader has come to a complete stop causes the vehicle to stop abruptly!

3.10.9 Parking

- 1) Put the drive to the zero position by means of button 4.
- 2) Engage the parking brake/hand brake.
- 3) Turn off the engine.
- 4) Remove the ignition key, lock the cab and the engine hood.

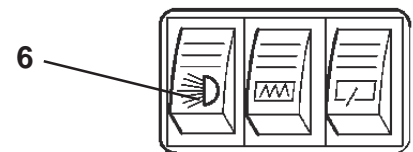


3.10.10 Driving at night

Headlight switch

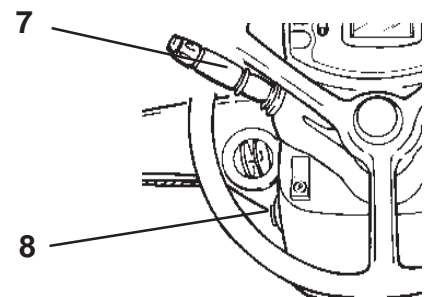
In order to turn on the headlights, set the corresponding switch (6) on the panel to one of the following positions:

- First position: parking light
- Second position: dipped beam/brights.



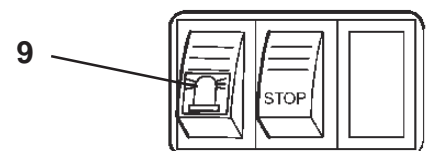
Brights

With the switch in the dipped headlights or the brights position, continue to pull the lever (7) upwards past the action point (b). Activation of the brights is indicated by the control lamp.



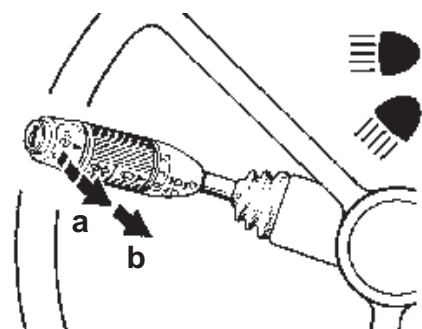
Hazard warning lights

The switch (8) for the hazard warning light is in the steering column, on the left side, next to the switch for the parking brake.



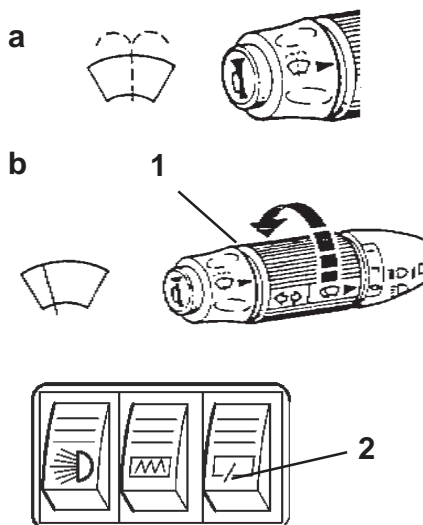
Headlamp flasher

Pull the lever (7) upwards (a), the control lamp for the brights lights up for a few seconds.



3.10.11 Driving in the rain or with dirty window panes

The wheel loader is equipped with a front and rear windscreen wiper. In addition, it is fitted with a windscreen washing system. The windscreen wiper functions for the front screen wiper are selected by means of the lever at the steering column (1).



Windscreen washer system (front)

Move the sleeve towards the steering column (a).

Front screen wiper

Turn the sleeve to the desired position (b).

'O' off

'J' Interval

'I' Continuous operation

Rear screen wiper

The switch (2) for the rear screen wiper is situated on the panel. Press the switch in order to activate the rear wiper. Press it further down in order to turn on the rear windscreen washer system.

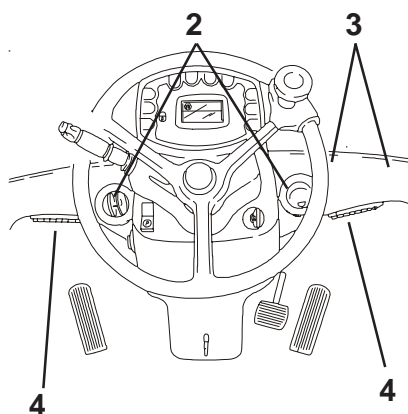
3.10.12 Damp window panes

Note



Operation in the winter:

- *The heating is ready for use as soon as the engine has reached its operating temperature.*



Defrosting the window panes

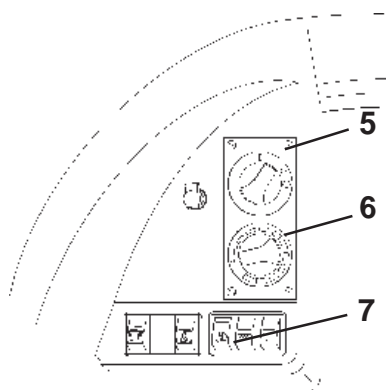
Close the two lower air jets (4).

The airflow is directed at the front window via the venting slots (3).

Direct the two upper air jets (2) at the front window.

Set the fan to maximum speed by means of the three-stage switch (5).

3.10.13 Cab heating



Use the rotary switch (6) to select the desired temperature.

Select the desired speed by means of the three-stage switch (5).

In order to ensure good visibility to the rear, switch on the rear window heating (7).

3.10.14 Driving on public roads**CAUTION!**

Observe national regulations and laws!

Check list: Driving on public roads

Before driving the wheel loader on public roads, carry out the following checks and preparations:

- 1) Discharge the loading shovel or attachment.
- 2) Remove mud and dirt from the wheel loader.
- 3) Check the wheel loader's lighting.
- 4) Check the mirror settings.
- 5) Check whether the engine hood is closed and locked.
- 6) Lift or lower the hoisting gear in such a way that the marks **(b)** are in line.
- 7) Use the locking device to mechanically lock the hydraulic pilot control and QDC **(d)**.
- 8) Disable the hydraulic pilot control by means of the switch **(c)**.
- 9) Make sure the following safety equipment is always kept at hand:
 - Warning triangle (not standard delivery)
 - First-aid box (not included in delivery)
 - Signal vest (not included in delivery)
 - Wheel chock (can be found at the front end).
- 10) The driver must carry the following documents with him/her at all times:
 - Operating licence for the wheel loader
 - driver's license.
 - Operating manual

