

Description

4 Description

4.1 Overview

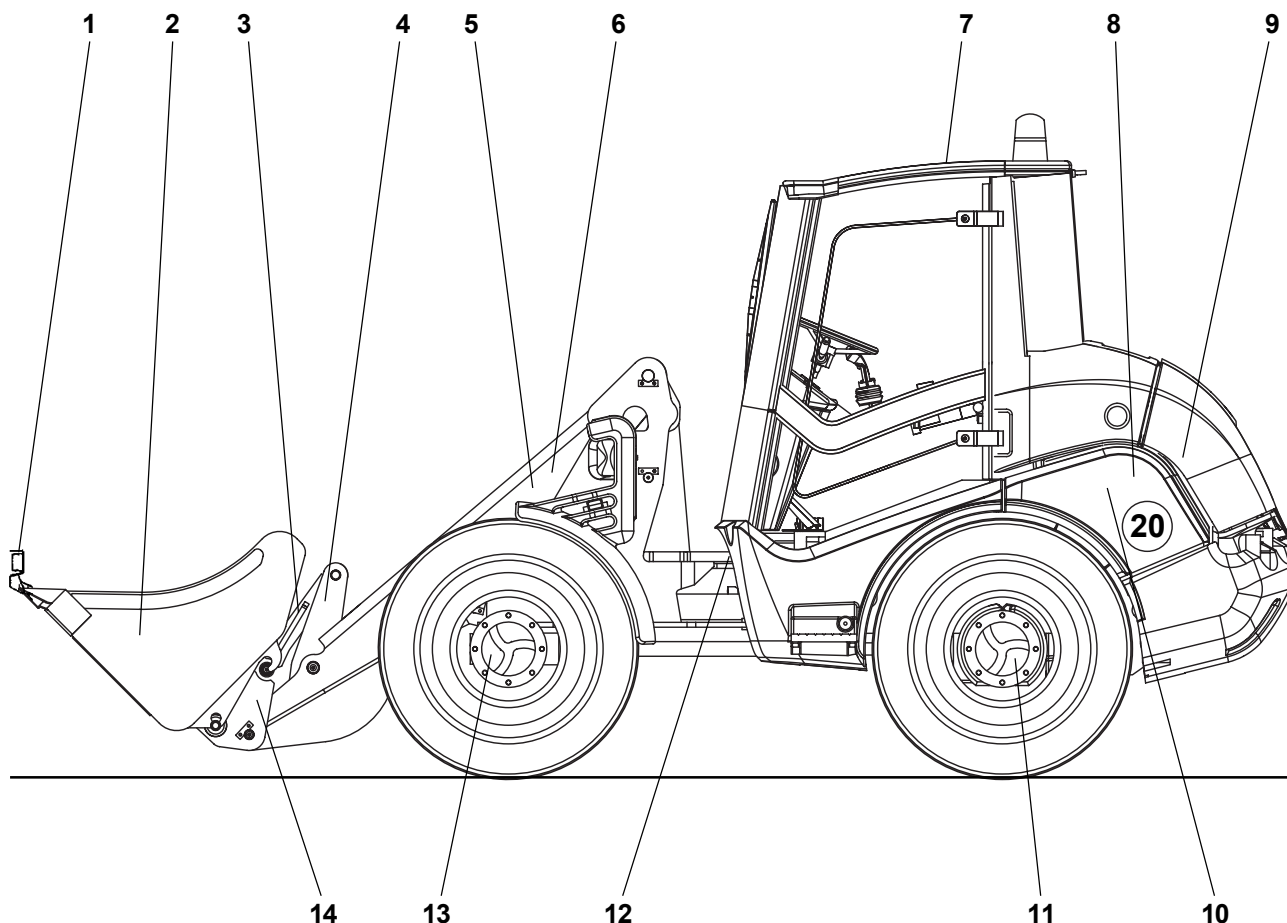


Figure 4-1

- 1 - Bucket protection
- 2 - Bucket/attachment
- 3 - Pivot arm
- 4 - Deflection lever
- 5 - Bucket arm
- 6 - Tip cylinder (in the bucket arm)
- 7 - Driver's cab
- 8 - Hydraulic oil tank (right loader side underneath the engine hood)
- 9 - Drive motor
- 10 - Fuel tank (left loader side underneath the engine hood)
- 11 - Rear axle
- 12 - Articulated pendulum joint
- 13 - Front axle
- 14 - Quick-change device

4.2 Loader

Undercarriage

The axial piston pump for the hydraulic drive is driven by the diesel engine. Pressure hoses for extremely high pressure connect the axial piston pump with the axial piston engine. The axial piston engine is flanged to the distribution/intermediate gear of the rear axle (with planetary gear). The distribution/intermediate gear transmits the torque of the axial piston engine directly to the rear axle and to the front axle (with planetary gear).



CAUTION

The maximum speed of the axial piston engine is governed by settings made at the factory. Any adjustment will render the warranty invalid.

Tyres

The following tyres are permitted:

12.5/80 R18	15.5/55 R18	365/70 R18
405/70 R18	425/55 R17	

For the running direction, see Fig. 4-2.



NOTE

All four tyres must be identical and have the same PR rating (PR = ply rating: number of textile plies).

Steering system

The power for the hydrostatic steering system is supplied via a priority valve from a gear-type pump. With a minimum of effort on the steering wheel, the oil flow is directed by a steering unit into the steering cylinder.

Emergency steering

The hydrostatic steering system can also be used in a limited way if the diesel engine fails. The loader can be steered using a considerable amount of manual effort.



NOTE

See chapter 7, "Towing the loader".

Differential lock

To enhance the traction of soft slippery ground, you can enable the differential lock acting on all four wheels by pressing pushbutton (4-10/10) and keeping it pressed.



CAUTION

Enable the differential lock only when the loader is at a standstill.

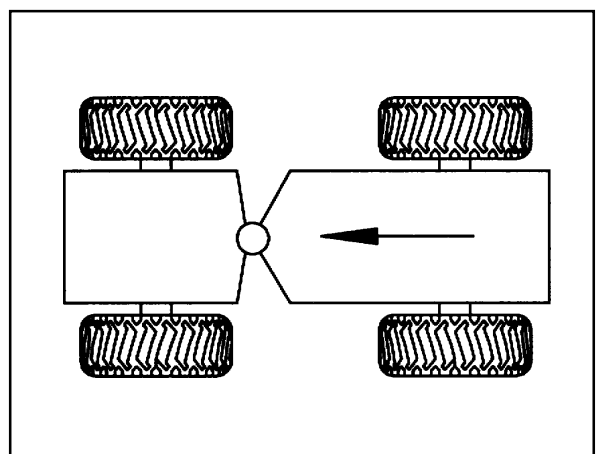


Figure 4-2



Figure 4-3

Make sure the differential lock engages by releasing the accelerator and steering movements if only one wheel of an axle rotates with the differential lock enabled. You may disable the differential lock while the loader is moving.



CAUTION

Make sure to disable the differential lock when driving on solid ground, in particular when taking bends.

Service brake/ inching

AX 70/20 km/h and AX 85/20 km/h:

The loaders are equipped with a hydraulic drum brake in the front axle acting on all four wheels.

AX 70/30 km/h, AX 85/30 km/h and AX 100:

The loaders are equipped with a hydraulic disc brake in the front axle acting on all four wheels.

The service brake is actuated with a pedal (4-3/arrow) located to the left of the steering column. It is supported by the hydrostatic traction drive (inching), i.e. during work, the drive pedal is used for accelerating and braking.

Parking brake

The parking brake is actuated with a hand lever (4-4/arrow) located to the left of the driver's seat. When actuated, the mechanic parking brake acting on all four wheels switches off the traction drive.



Figure 4-4

Fuel supply system

The fuel tank is located on the left-hand side of the loader rear. An electrical fuel gauge (4-11/23) in the operator's cabin monitors the fuel level in the tank. The filler neck (4-5/arrow) is located beneath the engine hood on the left loader side.

Air filter device

Dry air filter system with safety cartridge (opt.) and umbrella valve.

Lift and tip devices

Via a servo valve a double-acting gear-type pump drives

- two lifting cylinders
- one tip cylinder

All movements of the bucket arm, the bucket, the attachments and the quick-change device are controlled from the driver's seat by pilot valves.

These pilot valves provide continuous speed control from "slow" to "fast".

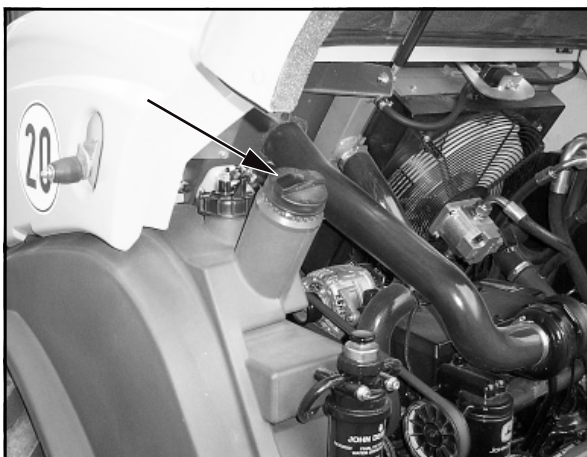


Figure 4-5

Float position

The loader features a floating position. It is activated by moving the hand lever (4-8/4) beyond its pressure point to the frontmost position. The hand lever remains engaged in this position until it is pulled back.



DANGER

The float position may only be activated when the bucket arm is in the lowermost position.



NOTE

- The float position is disabled if the loader is equipped with a pipe break protection.
- You can disable the pipe break protection (4-10/16) to maintain the function of the float position (option).

Pipe break protection(option)

A pipe break safety valve is installed at the bottom of each tip and lift cylinder. In the event of a pipe or hose break in the lift and/or tip system, the movements of the bucket arm and the tipping rod are blocked until the damage is repaired.

The pipe break protection can be enabled or disabled (4-10/16) (option).

Lifting device suspension (option)

When the loader must be driven over larger distances, especially with a loaded bucket, the lifting device suspension (4-10/15) should be activated to avoid resonant motion. This becomes even more important with increasing unevenness of the terrain and increasing speed of the loader.



CAUTION

The lifting device suspension must only be used for driving over long distances, not for working with the loader.



NOTE

- The lifting device suspension is disabled if the loader is equipped with a pipe break protection.
- You can switch off the pipe break protection (4-10/16) (option) to maintain the function of the lifting device suspension.

Bucket position indicator

The driver can see the position of the bucket by the coloured markings on the pivot arm and the reversing lever. When the coloured marks (4-6/arrow) form a line, the bucket floor is parallel to the ground.

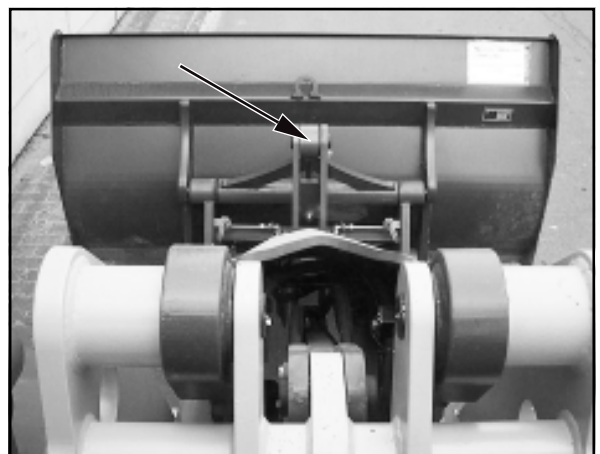


Figure 4-6

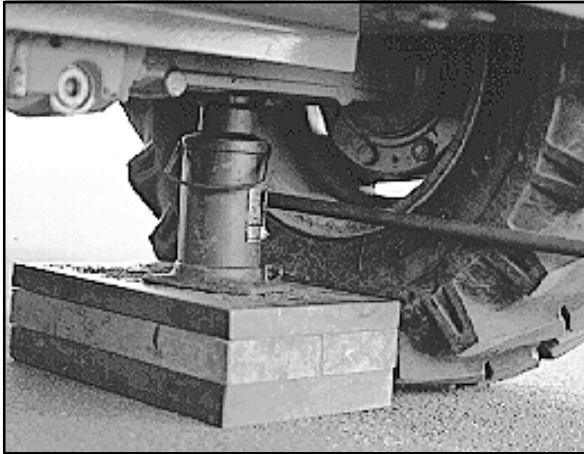


Figure 4-7

4.3 Wheel change



DANGER

Before changing a wheel on public roads, the danger area must be properly marked.

- (1) Park the loader on solid ground and not on inclines if possible.
- (2) Lower the attachment to the ground.
- (3) Set the drive switch (4-10/11) to "0".
- (4) Apply the parking brake (4-9/3).
- (5) Turn the ignition key to the left to position "0" (5-1).
- (6) Lock (4-8-/6) pilot valves for the working and auxiliary hydraulics (4-8/4 and 4-8/5).
- (7) Insert the articulation safeguard into the articulation joint (1-3/arrow).
- (8) Secure the machine by placing two wedges under one wheel of the axle where **no** wheel is to be changed.
- (9) Loosen the wheel nuts of the wheel to be changed so that they can be turned manually.
- (10) Fit a suitable jack (minimum capacity 3.0 tons) from the side under the axle bridge in the vicinity of the axle fixture so that it is centred and cannot slip (4-7). Lift the front/rear axle until the wheel does not have any contact to the ground.



DANGER

- Secure the jack by a suitable support to prevent it from sinking into the ground.
- Make sure that the jack is fitted well.

- (11) Loosen the wheel nuts completely and remove them.
- (12) Lower the loader slightly with the jack until the wheel bolts are free.
- (13) Push off the wheel from the wheel hub by moving it back and forth. Remove the wheel and roll it aside.
- (14) Mount the new wheel onto the planetary axle.
- (15) Tighten the wheel nuts by hand.
- (16) Lower the front/rear axle using the jack.
- (17) Tighten the wheel nuts with a torque wrench (440 Nm).



CAUTION

Retighten the wheel nuts after the first 8-10 operating hours.

4.4 Controls

- 1 - Steering column switch
 - to the front: Turn signal, right
 - to the rear: Turn signal, left
 - up: Low beam
 - down: High beam
 - Pushbutton: Signal horn
 - Turn, step 1: Interval wiper, front
 - Turn, step 2: Windshield wiper, front
 - Push upper ring in axial direction: Windshield washer, front
- 2 - Multifunction panel
- 3 - Lock lever for steering column adjustment
 - to the front/rear
 - in axial steering column direction
- 4 - Pilot valve for working hydraulics
- 5 - Pilot valve for auxiliary hydraulics
- 6 - Lock lever pilot valve for working and auxiliary hydraulics
- 7 - Starter switch
- 8 - Accelerator
- 9 - Steering wheel
- 10 - Foot pedal for service brake/ inching
- 11 - free
- 12 - free
- 13 - Toggle switch for hazard flasher system
- 14 - Toggle switch for road lights
 - Position I: Parking light
 - Position II: Road light
- 15 - Toggle switch for windshield wiper/washer, rear
 - Position I: Wiper
 - Position II: Wiper/washer (pushbutton function)
- 16 - Pushbutton for releasing the quick-change device

To the left of the driver's seat:

- 1 - Door release
- 2 - Console for auxiliary seat (opt.)
- 3 - Hand lever for parking brake

To the right of the driver's seat:

- 1 - Loudspeaker
- 2 - Radio
- 3 - Heating/air condition
- 4 - Toggle switch for rear window heater
- 5 - Toggle switch for beacon light (opt.)
- 6 - Toggle switch for working lights
- 7 - free
- 8 - free
- 9 - Hydraulic drive levels:
 - right - Stage I: slow
 - left - Stage II: fast
- 10 - Two parallel pushbuttons for differential lock
 - Pushbuttons pressed: Differential lock enabled
 - Pushbuttons not pressed: Differential lock disabled



CAUTION

The differential lock may only be enabled when the loader is not moving.

- 11 - Drive switch: forward/0/reverse
- 12 - Ash tray
- 13 - 2-pole socket
- 14 - Toggle switch for permanent auxiliary hydraulics (opt.)
- 15 - Toggle switch for lifting device suspension (opt.)
- 16 - Toggle switch for pipe break protection (opt.)

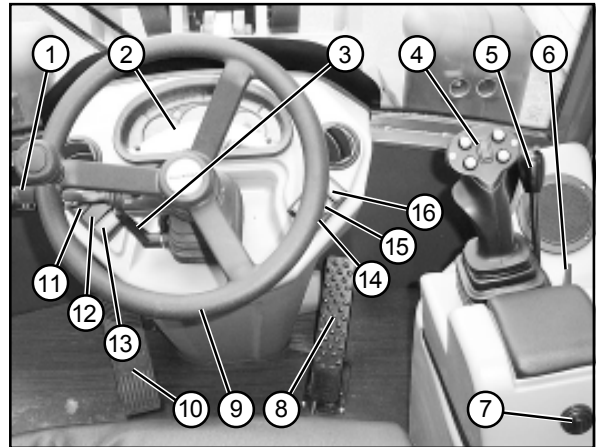


Figure 4-8

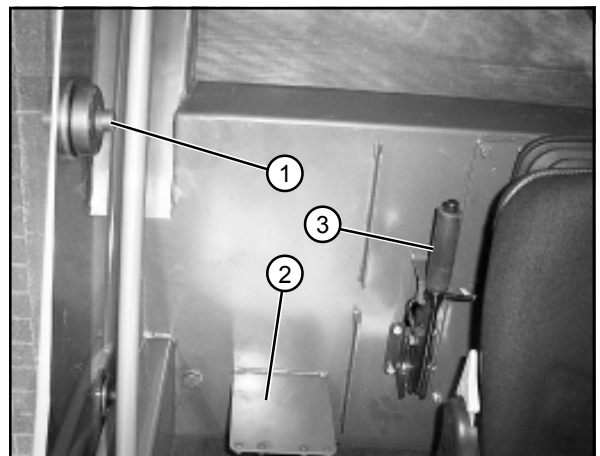


Figure 4-9

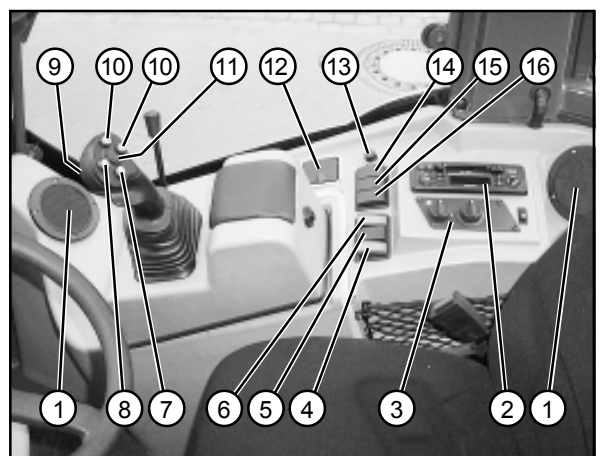


Figure 4-10

Multifunction panel (4-10/1)

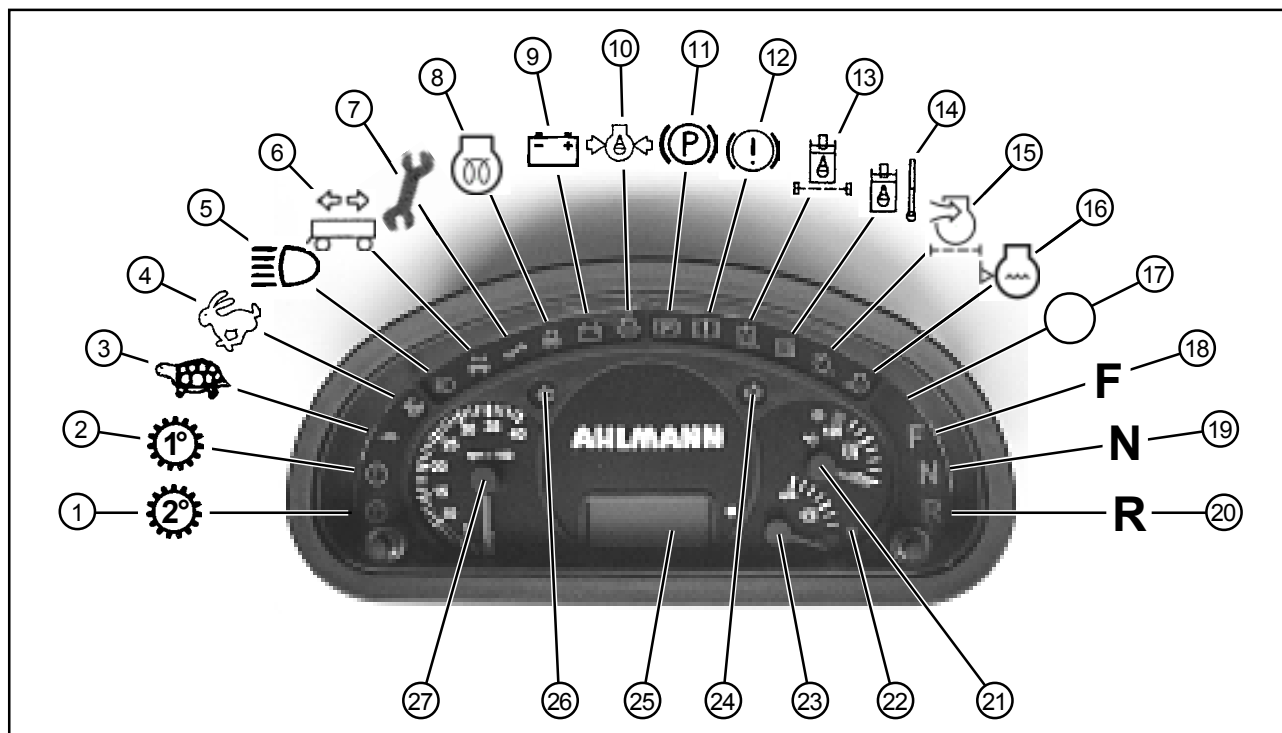


Figure 4-11

- 1 - free
- 2 - free
- 3 - Indicator lamp: Hydraulic drive stage „slow“
- 4 - Indicator lamp: Hydraulic drive stage „fast“
- 5 - Indicator lamp: High beam
- 6 - free
- 7 - free
- 8 - Indicator lamp: Preheating
- 9 - Battery charge indicator
- 10 - Signal lamp: Engine oil pressure
- 11 - Indicator lamp: Parking brake
- 12 - free
- 13 - Hydraulic oil filter clogging indicator (opt.)
- 14 - Signal lamp: Hydraulic oil temperature
- 15 - Air filter clogging indicator (opt.)
- 16 - Signal lamp: Low cooling water
- 17 - free
- 18 - free
- 19 - free
- 20 - free
- 21 - Cooling water temperature gauge
- 22 - Indicator lamp: Fuel on reserve
- 23 - Fuel gauge
- 24 - Indicator lamp: Turn signal „right“
- 25 - Operating hours counter and digital clock
- 26 - Indicator lamp: Turn signal „left“
- 27 - Revmeter

4.5 Fuses/relays



NOTE

Fuses, relays, turn signal relay, interval relay etc. (4-14) are located behind the maintenance flap on the right side of the loader (4-13/arrow). Swing open the hinged window before opening the maintenance flap.

1. Opening the window:

First pull the window handle inwards, then push it outwards. Finally lift the window handle out of its holder.

2. Opening and locking the window :

First pull the window handle inwards, then push it outwards. Finally pull the window handle to the rear until it locks.



Figure 4-12

- | | |
|-------------------------------|---------|
| 1 - Turn signal relay | |
| 2 - Interval timer | |
| 3 - Maxi relay (power supply) | |
| 4 - Maxi fuse (power supply) | 100.0 A |

Fuses:

- | | |
|------------------------------|--------|
| 1 - Traction drive | 10.0 A |
| 2 - Turn indicator | 7.5 A |
| 3 - Hydraulics/brake light | 20.0 A |
| 4 - Heater | 20.0 A |
| 5 - Rear window heater | 20.0 A |
| 6 - High beam | 15.0 A |
| 7 - Low beam | 15.0 A |
| 8 - Parking light, left | 5.0 A |
| 9 - Parking light, right | 5.0 A |
| 10 - Hazard flasher | 15.0 A |
| 11 - Windshield wiper/washer | 20.0 A |
| 12 - Engine shut-off | 20.0 A |
| 13 - Working lights | 20.0 A |
| 14 - Warning beacon (opt.) | 30.0 A |

Relays:

- | |
|-----------------------------|
| K1 - Differential lock |
| K2 - Fan control |
| K4 - Traction drive cut-out |
| K5 - Power control: reverse |
| K6 - Power control: forward |
| K7 - Alpha max. |
| K8 - Start-up interlock |



Figure 4-13

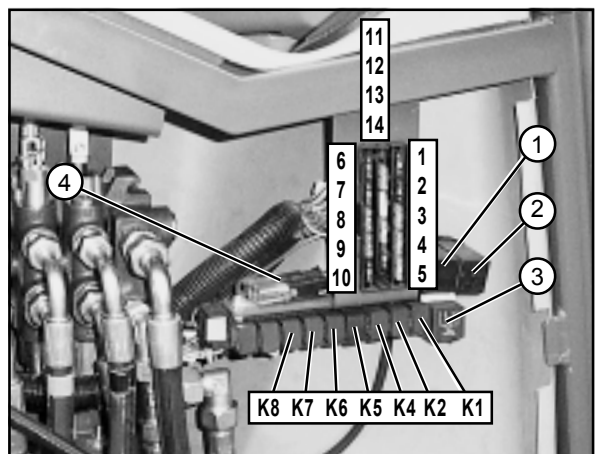


Figure 4-14

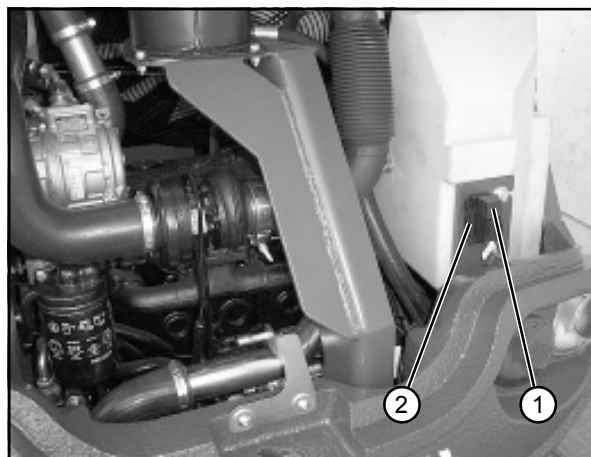


Figure 4-15



NOTE

The fuse and the relay for the glow start system are located in the engine compartment next to the hydraulic oil tank (4-15).

1 - Glow start system fuse (100 A)

2 - Glow start system relay

opt. = optional equipment

4.6 Removing the driver's cab



NOTE

- Park the loader on solid and level ground.
- The engine must be turned off.
- Unlock the battery main switch (opt.) (8-36/1) by giving it 2 counter clockwise turns.
- Immobilise the loader with the parking brake (4-9/3).
- Have 4-strand lifting gear ready.



CAUTION

- Remove the driver's cabin with the loader standing horizontally and the bucket arm in the lowest position.
- Use the intended mounting aids or other secure working platforms when performing work above reaching height. Do not use any loader parts, in particular attachments, as climbing or descending aids. Use safety harnesses when working at very great heights.
- Use a crane capable of precisely lifting the load in vertical direction for the conversion.



Figure 4-16

- (1) Dismount the left driver's cab door.
- (2) Dismount the upper window section on the right loader side (see also chapter 4.5. item 1.).
- (3) Loosen the connecting screws between driver's cab lower and upper section at the front left (4-16/1) and right (4-16/2).
- (4) Loosen the connecting screws between driver's cab lower and upper section at the rear left (4-17/1) and right (4-17/2).

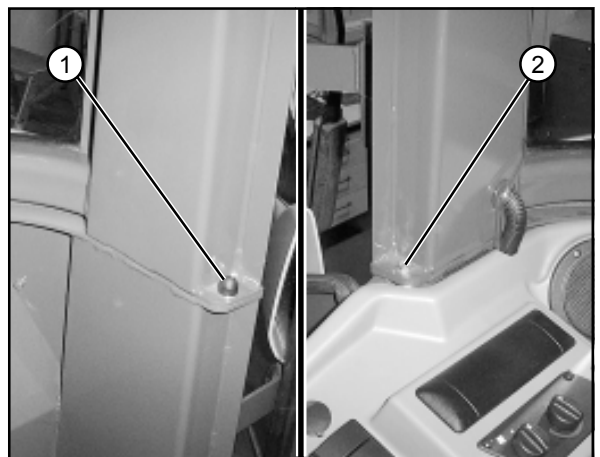


Figure 4-17

- (5) Open the right maintenance flap, take out any wedge that may be present and dismount the service plate (4-18/ arrow or 4-19/2).



NOTE

Open the engine hood before opening the maintenance flap.

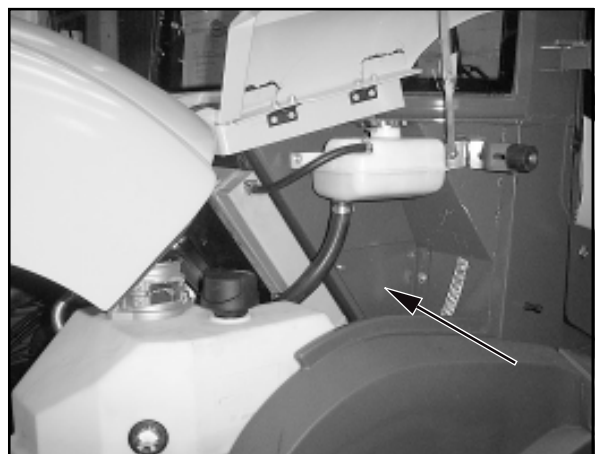


Figure 4-18



Figure 4-19

(6) Loosen the screw (10 mm Allen key) connecting the driver's cab lower and upper section at the rear in the middle of the cooler intake duct (4-19/1), accessible through the maintenance opening (4-18/arrow or 4-19/2).



Figure 4-20

(7) Unscrew the front windshield wiper arm (4-20/arrow) and pull it off the wiper motor shafts.



Figure 4-21

(8) Loosen the covering (4-21/3) from the frame of the maintenance flap (4-21/4).

- Break the electrical connection (X11) (4-21/1).
- Unplug the hose leading to the compensation tank for coolant (4-21/2) from the adapter.

Pull electrical connector and hose as shown in Fig. 4-21 upwards into the driver's cab upper section.

(9) Loosen the fastening screw for the working light cover plate (4-22/arrow) on the driver's cab at the front left and right and take off the cover plate.



NOTE

Support the working lights. One screw fastens both the working lights and the cover plates.

(10) Loosen the fastening screws at the rear left and right of the driver's cab each.

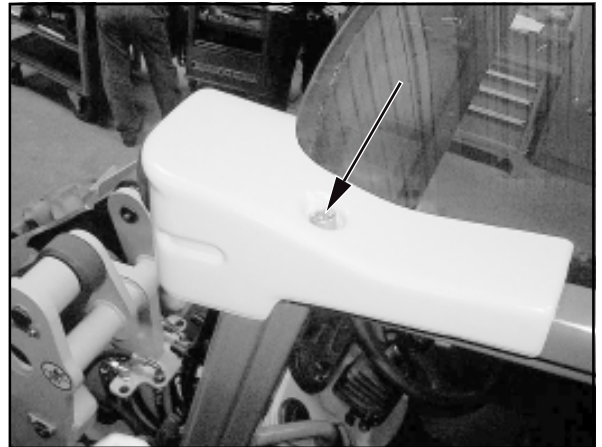


Figure 4-22

(11) Screw in four lifting eyes (4-23/arrow).

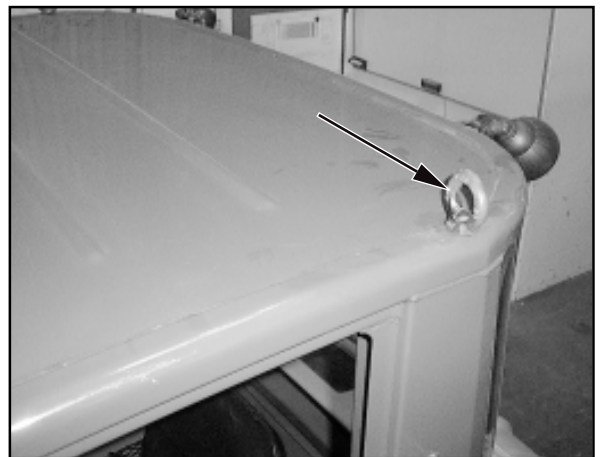


Figure 4-23

(12) Attach 4-strand lifting gear into the crane lifting eyes (4-24).



NOTE

The two rear strands of the lifting gear must be approx. 10 cm shorter than the front strands.

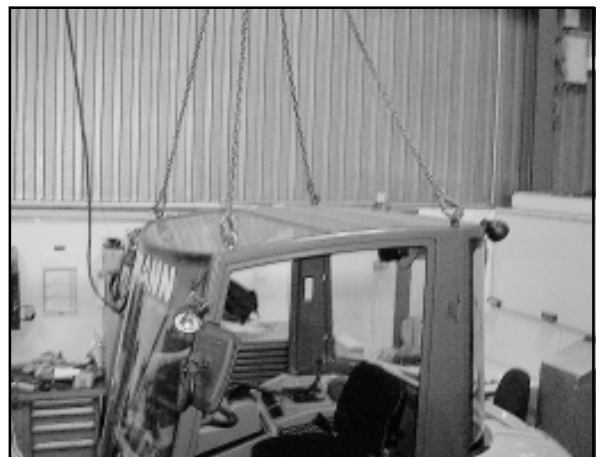


Figure 4-24



Figure 4-25

(13) Slowly lift the driver's cab until the two rear index pins (4-25/arrow and 4-26/arrow) are free.



NOTE

The driver's cab front must not yet be raised.



Figure 4-26



Figure 4-27

(14) Pull the driver's cab forward with your hand until it comes free off the recess in the dashboard in the lower windshield area (4-27/arrow).

(15) Lift driver's cab until it can be swivelled over the steering wheel.



DANGER

Never stand or work underneath the suspended load. The lifting device (crane) operator maintains eye contact with the assigned helpers and decides on when and how they take action. The operator (of the crane for example) makes sure no hazardous movements take place when helpers are in the danger area.

Figure 4-28 shows the loader with removed driver's cab.

Technical data (exhaust in the counterweight):

- Tyres: 12.5-80, profile AT 603 (3.0 bar)
- Height over driver's seat: 1,825 mm
- Height over steering wheel with knob: 1,870 mm
- Height over steering wheel without knob: 1,810 mm
- Weight of upper cabin section
(without door/without right side window): 122 kg



Figure 4-28