

Description

4 Description

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Figures and descriptions may vary due to modifications in the construction that become possible and necessary to improve the loader and to develop it further technically.
These modifications are summarised in section 13.

4.1 Overview

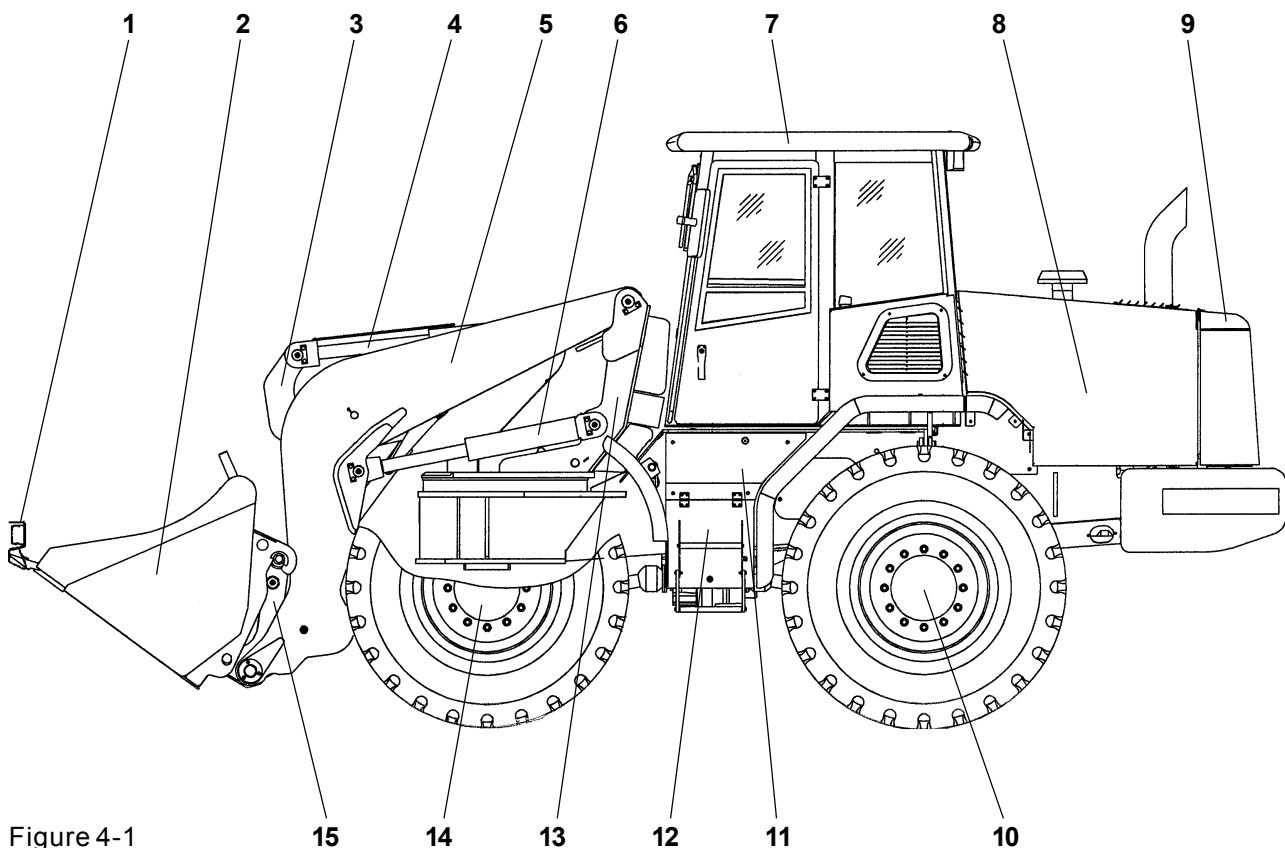


Figure 4-1

- 1 - Bucket protection
- 2 - Bucket/attachment
- 3 - Deflection lever
- 4 - Tip cylinder
- 5 - Bucket arm
- 6 - Lift cylinder
- 7 - Driver's cab
- 8 - Drive motor
- 9 - Hydraulic oil reservoir / filler neck
- 10 - Rear axle
- 11 - Battery compartment
- 12 - Tool box
- 13 - Revolving seat
- 14 - Front axle
- 15 - Quick-change device
- 16 - Fuel tank, right loader side (not shown)

4.2 Swivel unit and axle support

Two swivel cylinders are fed by a separate gear-type pump via a servo valve. The revolving seat is connected to the cylinders by a chain drive and is thus completely free of play. Swivelling can be carried out simultaneously with lifting of the bucket arm without mutual interference.

The bucket's swivelling radius is 90° to the right or to the left.

If the bucket is swivelled more than approx. 30°, the axle support system is automatically activated. The load-side support cylinder that affects the rear axle is subjected to hydraulic pressure by the force of the load via the support valve, counteracting the swivelled load.



NOTE

The axle support is deactivated when swivelling back.

4.3 Floating position

The loader is equipped with a floating position function that allows work such as levelling (grading) on uneven ground to be performed. To do this, move the hand lever for the working hydraulics (4-9/6) forwards beyond its pressure point.

The hand lever remains in this position until the bucket arm is to be raised again by moving the hand lever in the opposite direction.



DANGER

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

4.4 Bucket position indicator

The driver can read the position of the bucket using clip marks on the right tip cylinder. When the marks on the tip cylinder and the end of the control rod (4-2/arrow) form a line, the bucket floor is parallel to the ground.

4.5 Lifting device suspension (option)

When the loader must be driven over larger distances, especially with a loaded bucket, the lifting device suspension (4-12/10) 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.

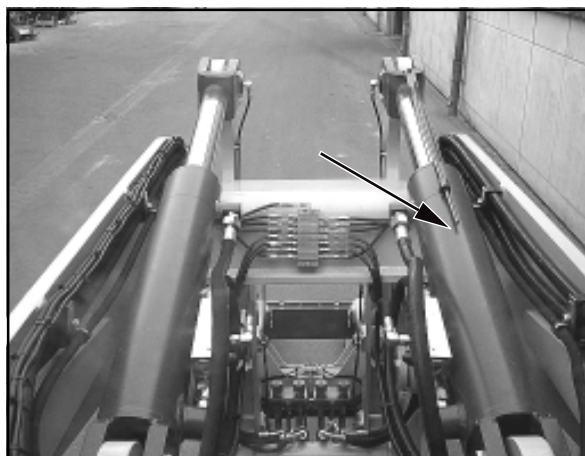


Figure 4-2



- Do not switch on the lifting suspension while the fork-lift or lifting hook attachment is fitted.
- The pipe break protection is disabled when the lifting suspension is switched on.

4.6 Fan reversal (option)

The loader is equipped with a fan reversal unit, permitting the radiator to be cleaned quickly and easily.

Depending on the degree of air pollution in the working area, the fan reversal unit should be activated regularly in intervals of 15 minutes (in extreme cases) to daily (in less serious cases).

To do this, press and hold the fan reversal button (4-12/12).



NOTE

Fan reversal can be activated both when the loader is at a standstill and when it is moving.

4.7 Wheel change



DANGER

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

(1) Park the loader on a hard surface.

(2) Set the drive switch (4-9/5) to "0".

(3) Apply the parking brake (4-9/7).

(4) When changing a wheel on the front axle:

- Lift and mechanically prop up the bucket arm [e.g. by inserting the bucket arm support (option) (1-1/arrows)] and lower the bucket arm until it rests on the bucket arm support.
- Block the swivel unit. To do this, remove the blocking wedge (1-3/arrow) from the holder, insert it into the swivel block (1-4/arrow) and secure it with the spring locking lever.

(4) When changing a wheel on the rear axle:

Lower the attachment to the ground.

(5) Turn the ignition key (4-7/5) to the left to position "0".

(6) Secure the ball hand lever for the working and auxiliary hydraulics (1-2/arrow).

(7) Ensure that the loader does not roll away by securing it on one of the wheels of the axis in both driving directions. The wheel that does **not** have to be changed is to be secured.

(8) Loosen the wheel nuts of the wheel to be changed so that they can be turned manually.

(9) Fit a suitable jack (minimum capacity 6.0 tons) from the side under the axle bridge in the vicinity of the axle fixture so that it is centred and cannot slip (4-3). 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 correctly.



Figure 4-3

(10) Loosen the wheel nuts completely and remove them.

(11) Lower the loader slightly with the jack until the wheel bolts are free.

(12) Push the wheel from the wheel hub by moving it back and forth. Remove the wheel and roll it aside.

(13) Mount the new wheel onto the planetary axle.



NOTE

- Only the tyres that are listed in section 11.7 are permitted.
- Pay attention to the profile position.
- If the profile position of the spare tyre does not fit, the spare tyre may only be used temporarily until a suitable tyre can be fitted.
- All four tires must be the same size and have the same PR rating (PR = ply rating: number of textile plies). For the running direction, if it exists, see Fig. 4-4.

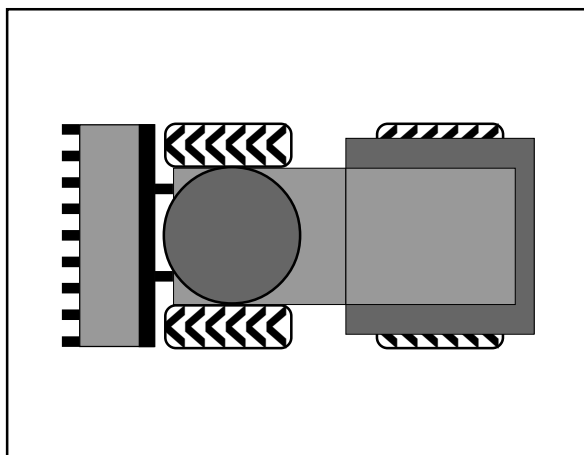


Figure 4-4

(14) Tighten the wheel nuts by hand.

(15) Lower the front/rear axle using the jack.

(16) Tighten the wheel nuts to 550 Nm with a torque wrench.



CAUTION

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

4 Description

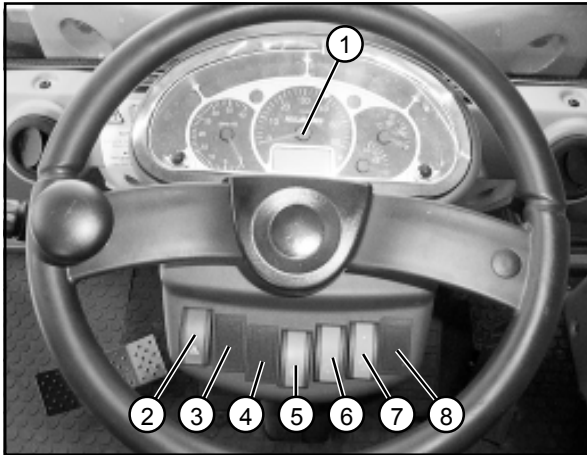


Figure 4-5

4.8 Controls

- 1 - Multifunction panel (Figure 4-8)
- 2 - Toggle switch for hazard flasher system
- 3 - free
- 4 - free
- 5 - Toggle switch for driving lights
 - Position I: Parking light
 - Position II: Road light
- 6 - Toggle switch for rear wiper/washer
- 7 - Pushbutton for releasing the quick-change device
(for loaders with bolt lock together with the lower button 4-11/3 = **standard equipment**)
- 8 - free

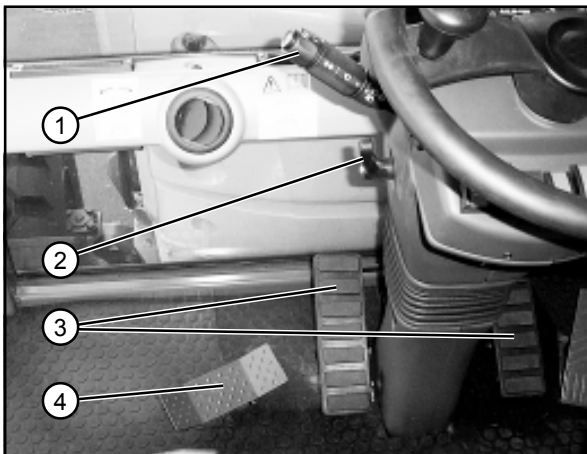


Figure 4-6

- 1 - Steering column switch
 - to the front: turn signal, right
 - to the rear: turn signal, left
 - up: Dipped beam
 - down: High beam
 - Pushbutton: Signal horn
 - Turn, step 1: Interval windshield wiper, front
 - Turn, step 2: Windshield wiper, front
 - Push upper ring in axial direction: Windshield washer, front
- 2 - Lock lever for steering column adjustment
 - to the front/rear
 - in axial steering column direction
- 3 - Double pedal for service brake/inching
- 4 - Swivelling pedal



Figure 4-7

- 1 - Starter switch
- 2 - Fuse box (Figure 4-9)
- 3 - Accelerator

Multifunction panel (4-5/1)

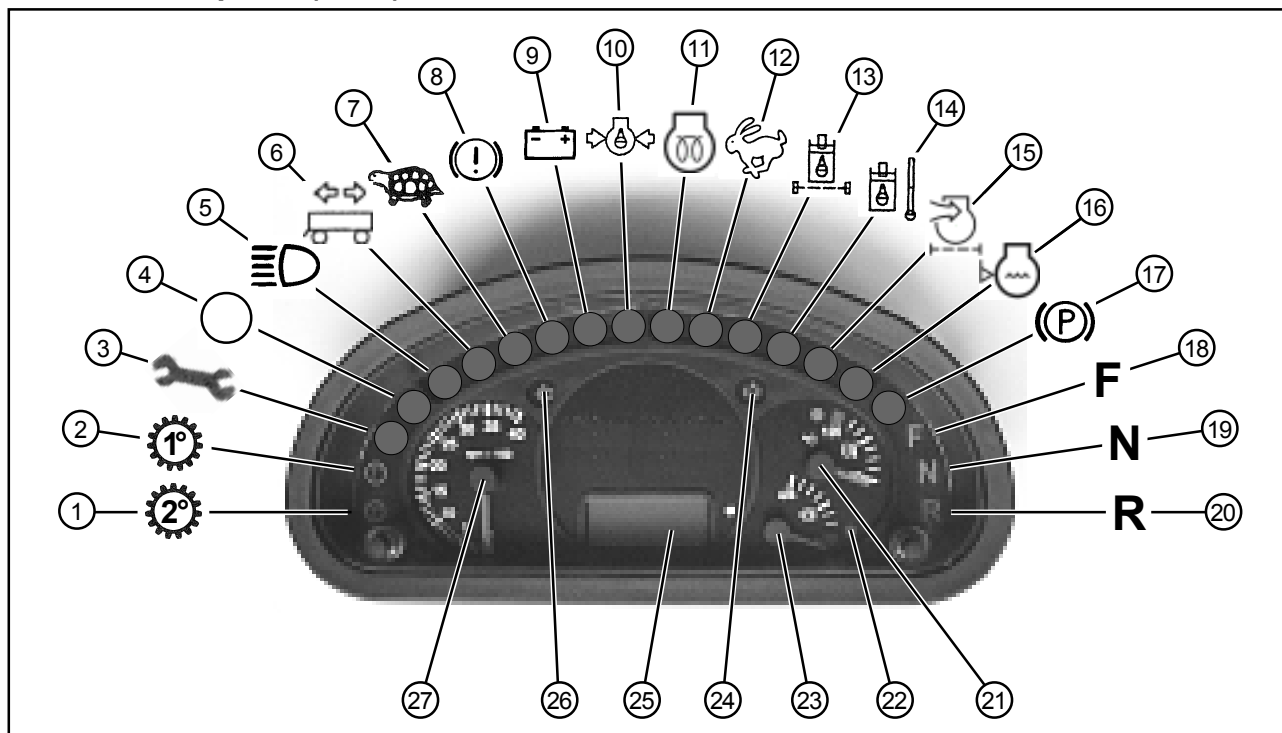


Figure 4-8

- | | |
|---|--|
| 1 - Indicator: 2nd gear | 15 - Air filter clogging indicator (opt.) |
| 2 - Indicator: 1st gear | 16 - Signal lamp: Low cooling water |
| 3 - Error indicator: Traction drive | 17 - Indicator lamp: Parking brake |
| 4 - Indicator: Engine diagnosis (4-8/1) | 18 - Indicator lamp: Travel direction "forward" |
| 5 - Indicator lamp: High beam | 19 - Indicator lamp: Travel direction "0-position" |
| 6 - free | 20 - Indicator lamp: Travel direction "reverse" |
| 7 - Indicator lamp: "Alpha max." drive stage | 21 - Cooling water temperature gauge |
| 8 - Parking brake | 22 - Indicator lamp: Fuel on reserve |
| 9 - Battery charge indicator | 23 - Fuel gauge |
| 10 - Engine oil pressure | 24 - Indicator lamp: Turn signal "right" |
| 11 - Indicator lamp: Preheating | 25 - Operating hours counter and digital clock |
| 12 - free | 26 - Indicator lamp: Turn signal "left" |
| 13 - Hydraulic oil filter clogging indicator (opt.) | 27 - Rev meter |
| 14 - Signal lamp: Hydraulic oil temperature | |

Fuse box (4-7/2)

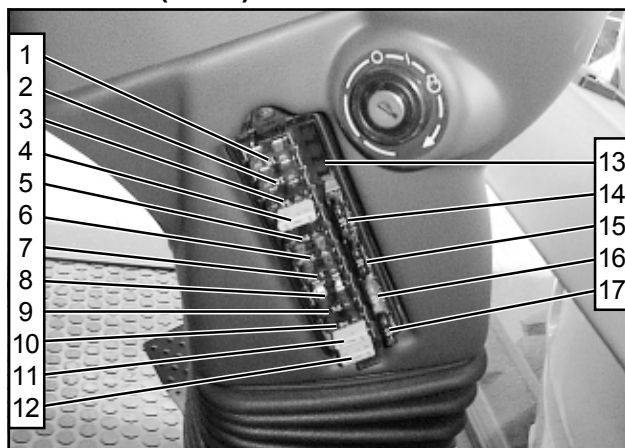


Figure 4-9

1 Window wiper/washer	15,0 A
2 Hydraulics	10,0 A
3 Turn indicator	7,5 A
4 Brake light	5,0 A
5 Controller engine	7,5 A
6 Traction drive	3,0 A
7 Traction drive	1,0 A
8 free	
9 Dipped beam	7,5 A
10 High beam	7,5 A
11 Tail light, left; parking light, left	5,0 A
12 Tail light, right; parking light, right	5,0 A
13 free	
14 Warning beacon (opt.)	15,0 A
15 Hazard flasher	7,5 A
16 Controller engine	25,0 A
17 Traction drive	15,0 A

opt. = optional equipment

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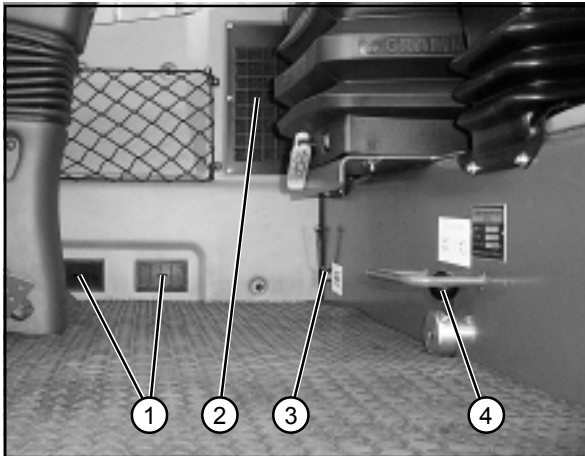


Figure 4-10

- 1 - Air outlet nozzle (heater)
- 2 - Suction flap for recirculation mode (air-conditioning system – option)
- 3 - Ball block valve for working and auxiliary hydraulics
- 4 - Switching lever for steering
 - to the left four-wheel steering
 - to the right: rear-axle steering

To the right of the driver's seat (4-11):

- 1 - Two pushbuttons for differential lock, wired in series
 - Pushbuttons pressed: Differential lock enabled
 - Pushbuttons not pressed: Differential lock disabled
- 2 - Lever for console adjustment
- 3 - Actuator for auxiliary hydraulics: (for loaders with bolt lock = **standard equipment**)
 - upper pushbutton: - Lock attachment
 - Close multipurpose bucket
 - bottom pushbutton: - Unlock attachment (only in conjunction with 4-5/7)
 - Open multipurpose bucket
- 3 - Actuator for auxiliary hydraulics: (for loaders with claw lock = **optional equipment**)
 - upper pushbutton: - Close multipurpose bucket
 - bottom pushbutton: - Open multipurpose bucket
- 4 - Hand lever for parking brake



NOTE

You can clearly hear the fan speed increase when applying the parking brake.

- 5 - Pilot valve for working hydraulics
- 6 - Drive switch: forward/0/reverse
- 7 - Gear shifts:
 - left: 2nd gear shift:
 - centre: 1st gear shift:
 - right: Alpha max. (turtle symbol)

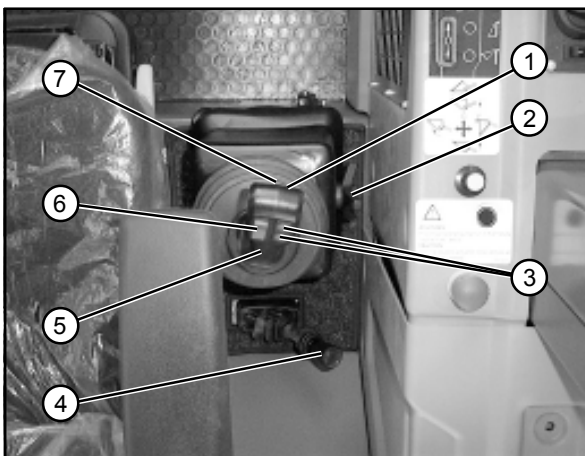


Figure 4-11

Operator's cabin right (4-12):

- 1 - Heater/ventilation/air-conditioning system (option)
- 2 - Inching speed control



NOTE

You can set the maximum speed in the range from 0 to 12 km/h in the "Alpha max." gear stage.

- 3 - Emergency stop switch (traction drive cut-out)



DANGER

Immediately apply the parking brake (4-11/4) when you have actuated the emergency stop switch.



NOTE

To restart the loader after the emergency stop switch was actuated, you must shut down the engine, remove the battery main switch (8-21/2), insert it again after approx. 10 seconds and restart the engine.

- 4 - Ash tray
- 5 - Cigarette lighter
- 6 - Latch for front side window

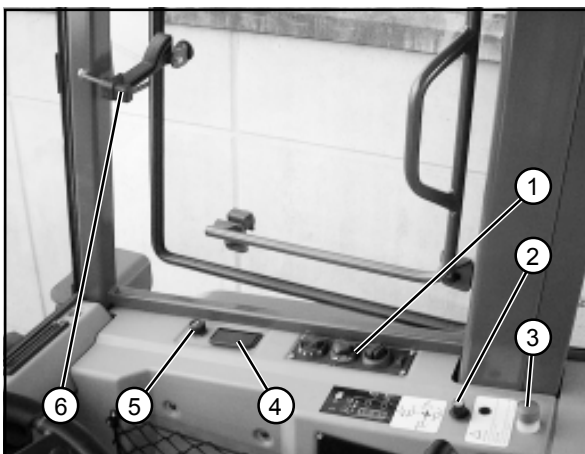


Figure 4-12

1. Opening the window:

First pull the window handle inwards and up by 90 degrees, then push it outwards. Finally push the window handle down until it locks. The handle will automatically lock in its front position.

2. To close the window:

First pull the handle to the rear to unlock it while pushing it upwards, then pull it inside. Finally push handle down by 90 degrees.



Figure 4-13

Pilot valve for auxiliary hydraulics (2nd auxiliary hydraulic circuit) » Optional equipment «



NOTE

If the loader has a 2nd auxiliary hydraulic circuit, the two buttons (4-11/3) have no function or are missing.

The working movements of the two buttons (4-11/3) (e.g. opening/closing the multi-purpose bucket – the lock/unlock attachment working functions in the case of loaders with bolt locks) are then carried out using the pilot valve for auxiliary hydraulics (4-14/arrow).

Loaders with bolt locks:

- Hand lever forward: Lock attachment
Close multipurpose bucket
- Hand lever to the rear: Unlock attachment
» only in conjunction with 4-5/7 «
Open the multipurpose bucket.

Loaders with claw locks:

- Hand lever forward: Close multipurpose bucket
- Hand lever to the rear: Open the multipurpose bucket.



Figure 4-14

Operator's cabin up right (4-12):

- 1 - Toggle switch for working lights, front
- 2 - Toggle switch for working lights, rear
- 3 - Toggle switch for heatable rear window
- 4 - Toggle switch for beacon light (option)
- 5 - Toggle switch for lifting device suspension
- 6 - Toggle switch for four-wheel drive shutdown
- 7 - Pushbutton for engine diagnosis
- 8 - Pushbutton for fan reversal unit (option)
- 9 - Pushbutton for teach function (option)
- 10 - Toggle switch for ECO-mode function
- 11 - free
- 12 - Pushbutton for teach function (4.10)
- 13 - free



Figure 4-15

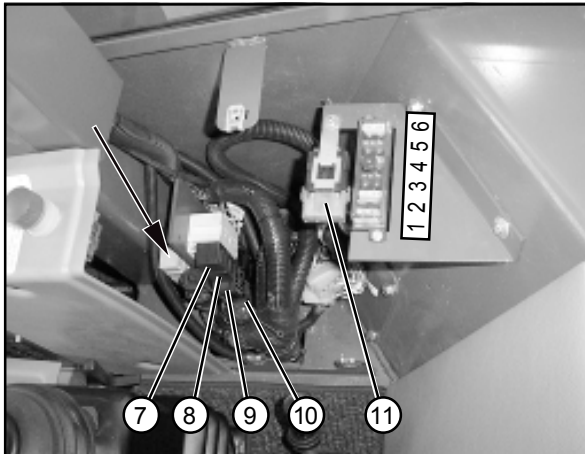


Figure 4-16

4.9 Fuses



NOTE

Fuses, relays, the turn signal relay, the interval timer, etc. are located at the right behind the driver's seat (4-16). To access them, push the seat to its frontmost position, tilt the backrest forward and remove the cover.

Fuses:

1 - Working lights, rear	10.0 A
2 - Reversing beacon	5.0 A
3 - Heatable rear window	15.0 A
4 - Power supply for driver's seat	15.0 A
5 - Drive-away interlock	5.0 A
6 - Cigarette lighter/interior lighting	20.0 A

Relays (4-16/arrow): (from top to bottom)

- R1 - Auxiliary hydraulics: close bucket
- R2 - Auxiliary hydraulics: open bucket
- R3 - Differential lock
- R4 - Traction drive cut-out
- R5 - Reversing beacon/reversing buzzer
- R6 - Starter interlock

7 - Relay: Engine controller	
8 - Relay: Working lights, front	
9 - Interval timer	
10 - Turn signal relay	
11 - Fuse: Working lights, front	40,0 A

4.10 Teach function

4.10.1 How to activate the teach function

The teach function is required to write the minimum and maximum values to the traction drive controller after a potentiometer was replaced.



NOTE

To perform a teach-in, the engine of the loader must have been running until immediately before teaching in the potentiometers to obtain an inch signal via the brake pressure reservoirs. You must align all three relevant potentiometers at the same time even if only one was exchanged (accelerator, brake/inch pedal and potentiometer for speed limitation). All of them must be in the zero position (minimum value)!

1. Start the ignition and keep the pushbutton for the teach function (4-15/12) pressed. The error indicator (4-8/3) lights up permanently as soon as the controller has booted.
2. Release the pushbutton for the teach function (4-15/12) when the controller has booted (error indicator » 4-8/3 « is lit permanently).
3. Briefly press the pushbutton for the teach function (4-15/12) not later than 5 seconds after releasing the pushbutton for the teach function (4-15/12) and before the error indicator (4-8/3) goes dark and starts flashing.
4. This will activate the teach function for potentiometer alignment. The error indicator (4-8/3) now being in the flash mode signals that the controller is ready for alignment.
5. You must now align all three relevant potentiometers to their maximum value even if you replaced only one of them. To do so, fully press down accelerator and brake/inch pedal and turn the potentiometer for speed limitation all the way to the right, then release or turn back all the way.
6. Press the pushbutton for the teach function (4-15/12) briefly three times to write the values into the controller and to conclude the teach-in.
7. Check all functions and repeat the procedure if necessary.

4.10.2 How to activate the emergency traction mode (when there is an accelerator fault)

1. When an accelerator fault is pending, set the drive direction switch (4-11/6) to the neutral position once as soon as the loader stops.



NOTE

A loader standstill is detected when a hydraulic motor speed of less than 50 rpm is detected. From this point onwards, you can press the pushbutton for the teach function (4-15/12) to activate a parameter-defined replacement value.

2. Preselect the drive direction (4-11/6) while keeping the pushbutton for the teach function (4-15/12) and the accelerator (4-7/3) pressed.



NOTE

The speed with the default value for the accelerator replacement value (30%) is

- in the 1st gear: approx. 1 km/h
- in the 2nd gear: approx. 6 km/h

4.10.3 How to activate the emergency traction mode (when there is a fault with the EP magnet of the hydro motor)



NOTE

When there is a fault with the EP magnet of the hydro motor, the hydro motor controller remains disabled, and driving is restricted to a maximum pump control value of 40%. The actual position of the hydro motor depends on the type of the fault and the hydraulic mechanical conditions.

- On level ground, the speed in the 1st gear is approx. 4 km/h.
- Negotiating inclines is possible with severe restrictions only.

