Description

4 Description

4.1 Overview

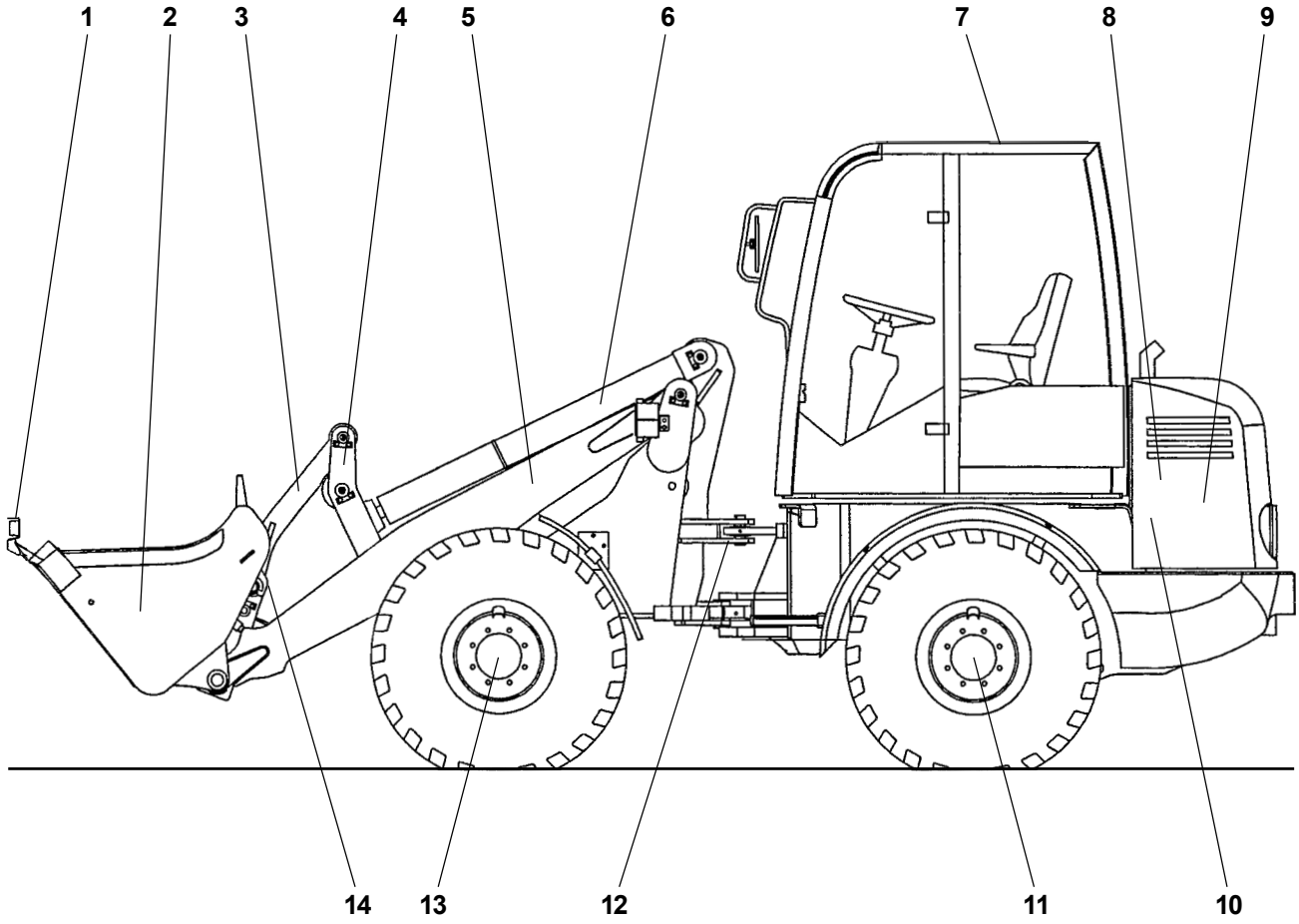

Figure 4-1

1 - Bucket protection
2 - Bucket/attachment
3 - Tip lever
4 - Deflection lever
5 - Bucket arm
6 - Tip cylinder
7 - Driver's cab
8 - Fuel tank (right loader side underneath the engine hood)
9 - Drive motor
10 - Hydraulic oil reservoir
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.

Tires

The following tires are permitted:

12.5 - 18	**AL 80**
14.5 - 20	**AL 100 / AL 100 turbo / AL 120**
405/70 R 20	**AL 80 / AL 100 / AL 100 turbo / AL 120**

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

NOTE

All four tires must be identical and have be 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 (4-12/2) and keeping it pressed.

CAUTION

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

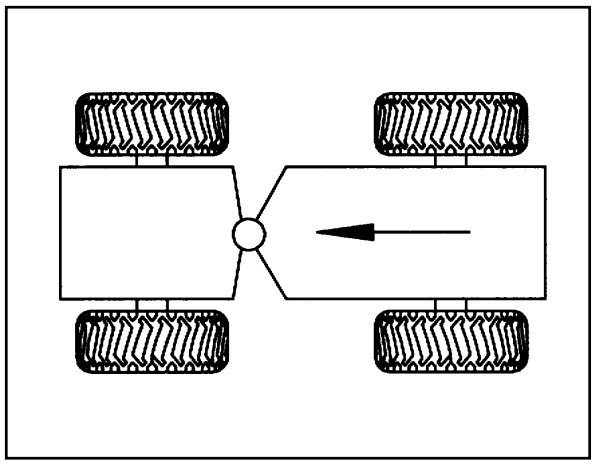

Figure 4-2

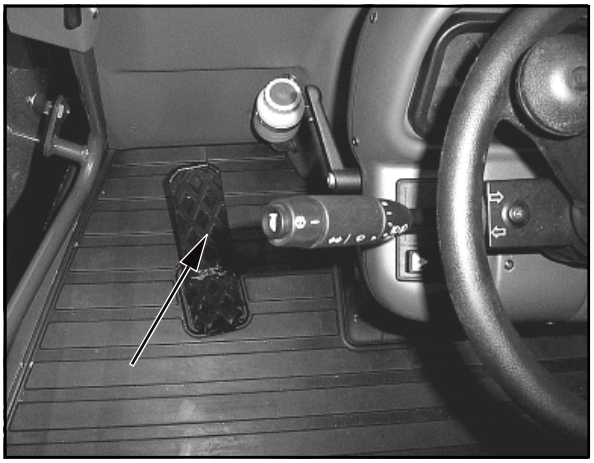

Figure 4-3

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 and parking brake

The service brake is actuated with a pedal (4-3/arrow) located to the left of the steering column. The service brake is actuated hydraulically by applying a pressure (max. 80 bar) through a feed bore. The brake piston movement simultaneously acts on the differential discs and on the brake discs. Thus braking occurs between the differential housing and the axle body. The differential lock ensures uniform braking, i.e. the brake force is evenly distributed between the two axle segments.

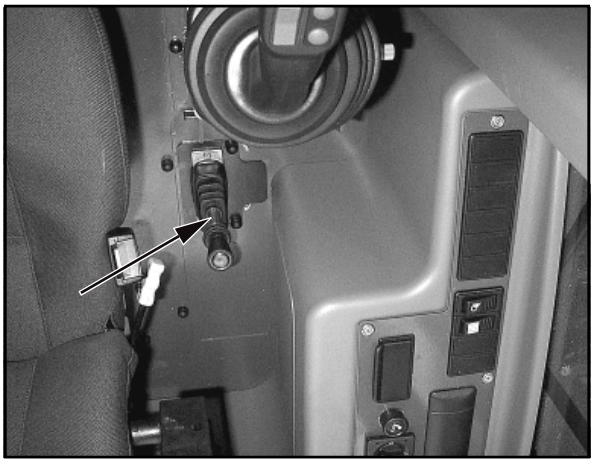

Figure 4-4

The parking brake is actuated with a hand lever (4-4/arrow) located to the right of the driver's seat. The negative parking brake is actuated by the Belleville springs acting on the brake pistons. To release the brake, a minimum pressure of 15 bar (max. 30 bar) must be supplied through a feed bore. This pressure allows the clearance between the brake discs and the differential lock to be opened by pushing back the brake piston, acting against the force of the Belleville springs.

The Belleville springs push back the spring-loaded brake piston and cause the loader's emergency stop if a pressure loss problem occurs in the hydraulic brake system. To release the negative spring-loaded brake after an emergency stop, the release screws provided for this purpose must be actuated.

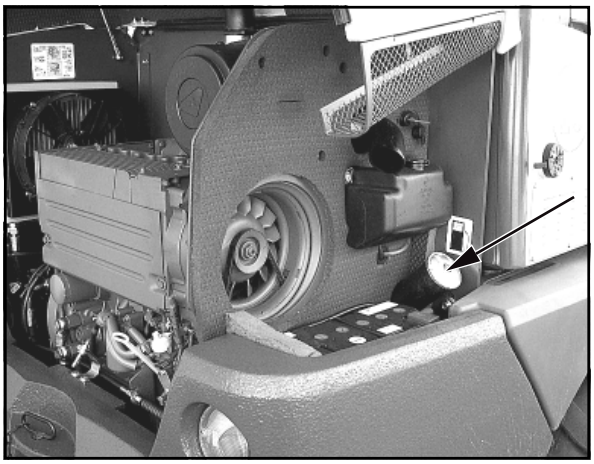

Figure 4-5

Fuel supply system

The fuel tank is located on the right-hand side of the loader rear. An electrical fuel gauge (4-9/2) 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 right loader side.

Air filter device

Dry air filter device with safety cartridge and dust discharge valve.

Lift and tip devices

Via a servo valve a double-acting gear-type pump drives
- one lift cylinder
- one tip cylinder

All movements of the bucket arm, the bucket, the attachments and the quick-change device are controlled from the operator's seat by pilot valves.
These pilot valves provide continuous speed control from "slow" to "fast".

Floating position

(option for AL 80)
The loader features a floating position. It is activated by moving the hand lever (4-12/6) beyond its pressure point to the front position. The hand lever remains in this position until it is pulled back.

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

NOTE
The floating position is disabled if the loader is equipped with a pipe break protection.

Pipe break protection

(option)
A pipe break safety valve is installed underneath each lift and tip 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.

Lifting device suspension

(option)
When the loader must be driven over larger distances, especially with a loaded bucket, the lifting device suspension (4-13/3) 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,** but not for working with the loader.

Bucket position indicator

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

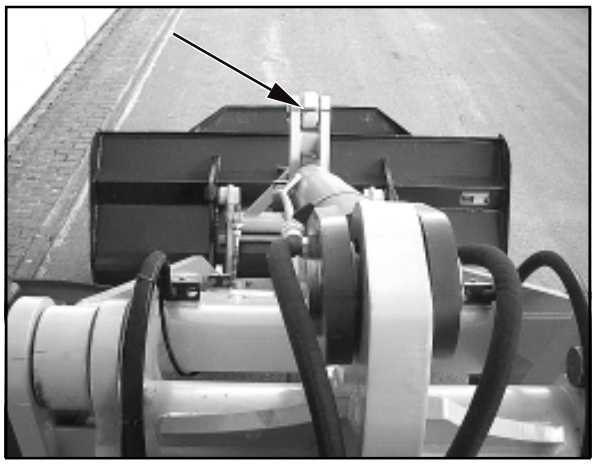

Figure 4-6

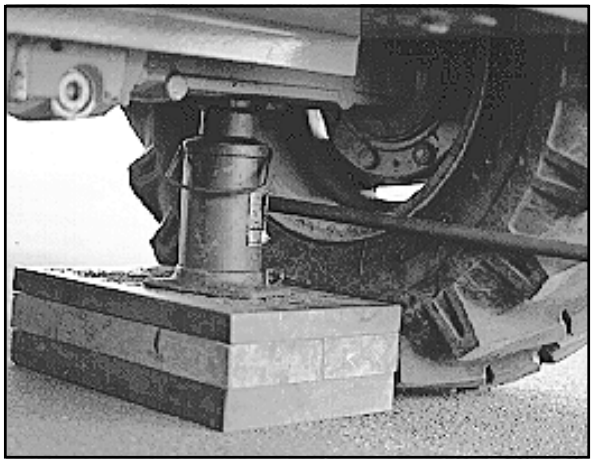

Figure 4-7

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 (4-12/5) to “0”.

(4) Apply the parking brake (4-12/7).

(5) Turn the ignition key to the left to position “0” (5-1).

(6) Close the ball block valve for the working and auxiliary hydraulics (1-2/arrow).

(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 to 440 Nm.

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

4.4 Controls

1 - Brake hydraulic oil reservoir
2 - Lock lever for steering column adjustment
  - to the front/rear
  - in axial steering column direction
3 - Foot pedal for service brake/ inching
4 - 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
5 - free
6 - free
7 - Toggle switch for hazard flasher system

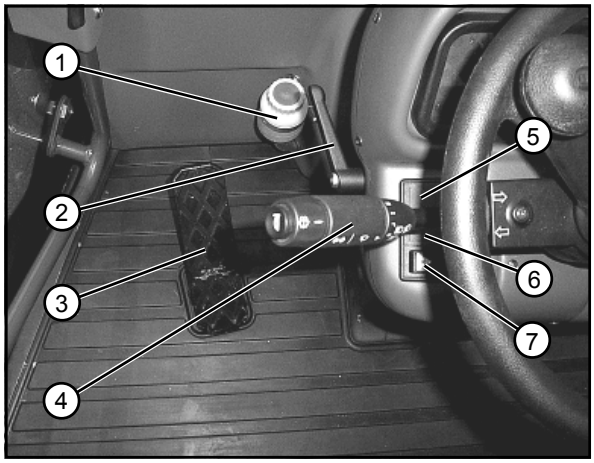

Figure 4-8

1 - Indicator lamp assembly
2 - Fuel gauge
3 - Engine oil temperature gauge
4 - Operating hours meter
5 - RPM meter
6 - Service interval indicator lamp (option)
7 - Turn signal indicator lamp
8 - High beam indicator lamp
9 - Engine oil pressure indicator lamp
10 - Low cooling water indicator lamp
11 - Parking brake indicator lamp
12 - Hydraulic oil temperature indicator lamp
13 - Transmission stage indicator lamp »fast« (only for fast loaders)
14 - Battery charge indicator lamp
15 - Glow start system (option)
16 - free
17 - Hydraulic oil filter clogging indicator
18 - Transmission stage indicator lamp »slow« (only for fast loaders)

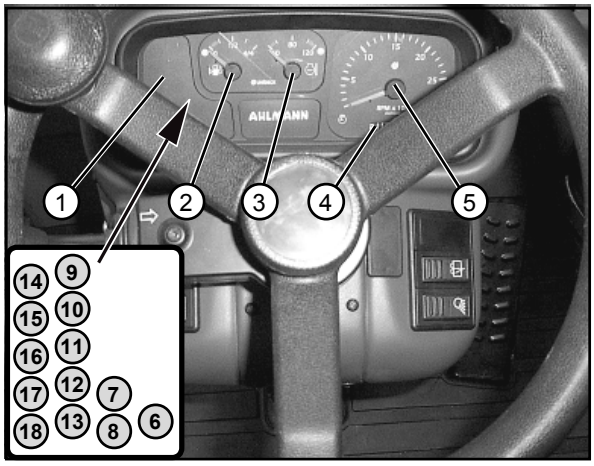

Figure 4-9

1 - Pushbutton for releasing the quick-change device (option)
2 - Toggle switch for rear windshield wiper/washer
3 - Accelerator
4 - Starter switch
5 - Toggle switch for driving lights
  - Position I: Parking light
  - Position II: Road light

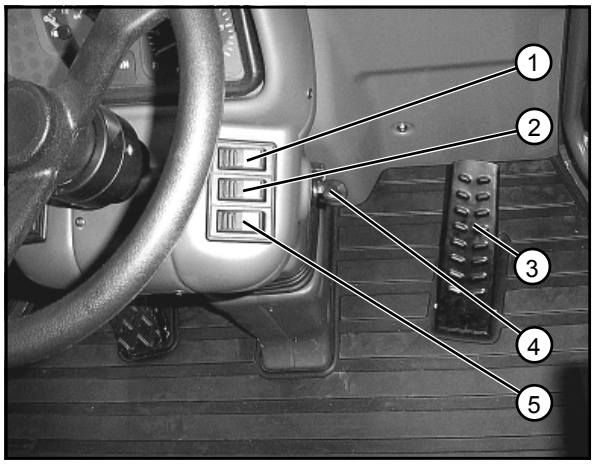

Figure 4-10

Figure 4-11

1 - Door release
2 - Storage compartment
3 - 2-pole socket

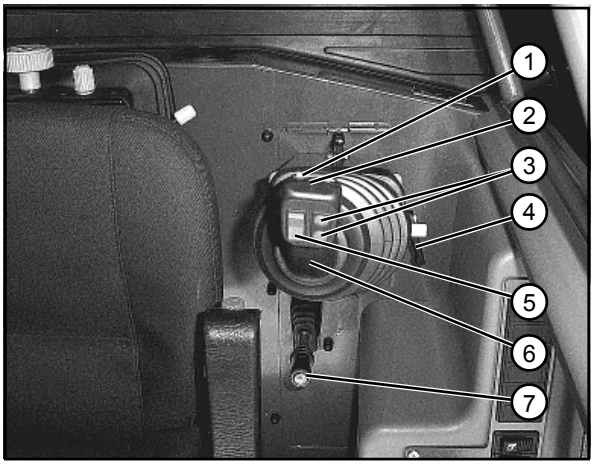

Figure 4-12

1 - Hydraulic drive stages:
  - right - Stage I: slow
  - left - Stage II: fast
2 - Two pushbuttons for differential lock, wired in series
  - 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.

3 - Actuator for auxiliary hydraulics:
  - upper pushbutton: - Lock attachment
    - Close multipurpose bucket
  - bottom pushbutton: - Unlock attachment » only in conjunction with 6-4/ arrow or 4-10/1 (opt) «
    - Open the multipurpose bucket.
4 - Lever for console adjustment
5 - Drive switch:
forward/0/reverse
6 - Pilot valve for working hydraulics
7 - Hand lever for parking brake

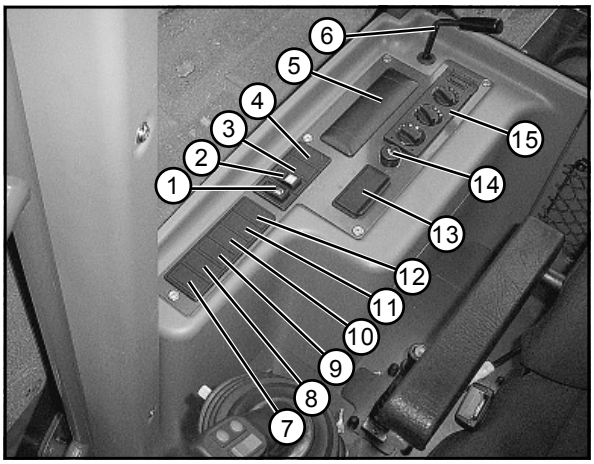

Figure 4-13

1 - Toggle switch for work lights
2 - Toggle switch for rear window heater
3 - Toggle switch for lifting device suspension (option)
4 - Toggle switch for permanent auxiliary hydraulics (option)
5 - Radio (option)
6 - Door release
7 - free
8 - free
9 - free
10 - free
11 - Pushbutton for gear shift (only for fast loaders)
12 - Toggle switch for warning beacon (option)
13 - Ash tray
14 - Cigarette lighter
15 - Heater/ventilation/air-conditioning system (option)

4.5 Fuses

NOTE

Fuses, relays, turn signal relay, interval timer, etc. are located at the right behind the driver's seat (4-17). To access them, push the seat to its frontmost position, tilt the backrest forward and remove the cover.

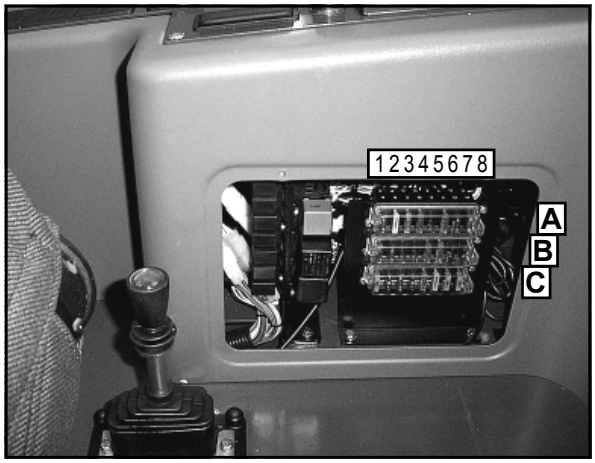

Figure 4-14

Fuse strip A:

1	-	Hydraulics	20.0 A
2	-	Heater	20.0 A
3	-	Air conditioning system (option)	25.0 A
4	-	Motor stopper	5.0 A
5	-	free	
6	-	Brake lights	5.0 A
7	-	Rear window heater	20.0 A
8	-	Traction drive	10.0 A

Fuse strip B:

1	-	Turn indicator	7.5 A
2	-	Windshield wiper/washer	20.0 A
3	-	free	
4	-	free	
5	-	Parking light, left	5.0 A
6	-	Parking light, right	5.0 A
7	-	Light indicator diode	
8	-	Light indicator diode	

Fuse strip C:

1	-	Hazard flasher	15.0 A
2	-	Warning beacon (opt.), headlamp flasher	30.0 A
3	-	2-pole socket	20.0 A
4	-	Cigarette lighter	30.0 A
5	-	Interior lighting	5.0 A
6	-	Working lights	30.0 A
7	-	Dipped beam	15.0 A
8	-	High beam	15.0 A

opt. = optional equipment