Description

4 Description

4.1 Overview

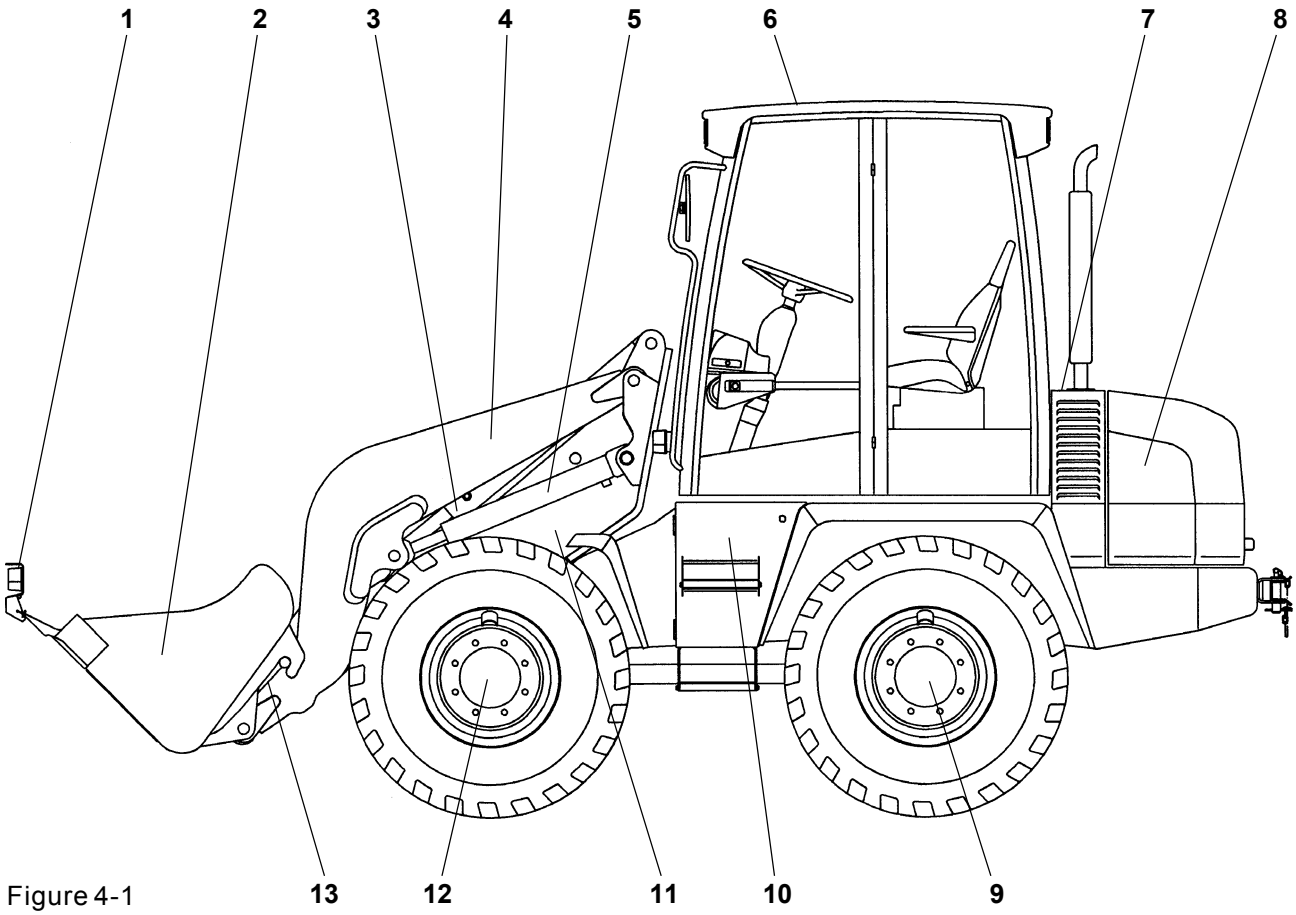

Figure 4-1

1 - Bucket protection
2 - Bucket/attachment
3 - Tip cylinder
4 - Bucket arm
5 - Lift cylinder
6 - Operator's cabin
7 - Hydraulic oil reservoir/filling cap
8 - Drive unit
9 - Rear axle
10 - Battery/tool compartment
11 - Revolving seat
12 - Front axle
13 - Quick-change device
14 - Fuel tank, ladder
right-hand side of vehicle (not shown)

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 axle distribution gear. The torque of the axial piston engine is transmitted by the cardan shaft to the front and rear axles, both with planetary gears.

CAUTION

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

The front axle is equipped with a wet lamella self-locking differential (locking value 45%).
As standard, the rear axle is delivered without a self-locking differential. A self-locking differential (locking value 45%) is special equipment.

Tires

The following tires are permitted:
12.5-18
15.5/55 R 18
and 335/80 R 18

All four tires are of equal size. For the travel direction, if available, see Figure 4-2.

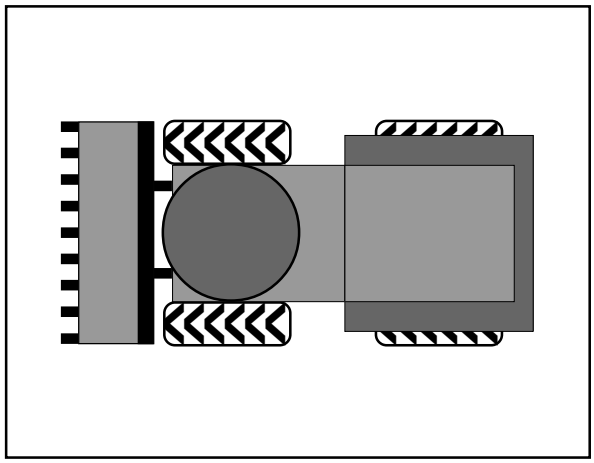

Figure 4-2

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.
Four-wheel and rear-wheel steering can be selected.

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”.

Electrical system

consisting of:
2 main headlights, front
2 work lights, front
2 work lights, rear
Hazard flasher system

Figure 4-3

Turn indicator lights
Contour lights
Brake lights
Tail lights
Interior lighting
License plate lights
(only for fast machines)
7-pole socket, front
Rear window heater
Signal horn
Wiper/washer, front and rear
Interval wiper, front
Back-up alarm (opt.)
Beacon light (opt.)
Radio (opt.)

(Opt. = optional features)

Battery

The battery/tool compartment contains a maintenance-free battery (4-3/arrow) according to DIN with an increased cold start performance. The batteries are to be kept clean and dry. Lightly grease the terminals with acid-free and acid-resistant grease.

CAUTION

Electric arc welding on the loader is to be only performed when the battery terminal connections have been disconnected.

First remove the negative terminal connection, then the positive. When reconnecting, proceed in reverse order.

Fuel supply system

The fuel tank is located on the right frame side bar. An electrical fuel gauge (4-8/7) in the operator's cabin monitors the fuel level in the tank. The filler neck is located on the right side in the cabin access area.

Air filter device

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

Lift and tip devices

- Two lift cylinders and
- one tip cylinder

are fed by two double-acting gear-type pumps via a control valve.
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. The pilot valves provide continuous speed control from "slow" to "fast".

Swivel mechanism and axle support

Two single-acting swing cylinders are fed by a separate gear-type pump via a control valve. The revolving seat is connected with the cylinders by a chain drive. There is no play at all. The swivel and the lifting movements of the bucket arm can take place simultaneously and independently.

The bucket assembly can be swung 90° to the left or right.

When the bucket assembly is swivelled, the axle support is automatically switched on when the bucket arm setting is ca. 30°. The support cylinder on the load side, acting on the rear axle, is thus loaded with hydraulic pressure from the load pressure via the support valve; it acts counter to the swivelled load.

NOTE

The axle support is deactivated when the arm is swung back.

Float position

The loader is equipped with a floating position function. To use this, the hand lever (4-7/12) must be unlocked (1-2/ arrow) and must be pressed beyond its pressure point into the forward poisition. In this position, the hand lever is locked in and can be unlocked again by pressing it in the opposite direction.

DANGER

The floating position function must only be switched on in the lowermost bucket arm position.

NOTE

If the loader has a pipe break safety device, the floating position function is deactivated.

Pipe break safety device

(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.

ATTENTION

The lift cylinders' pipe break protection is disabled when the lifting suspension is switched on.

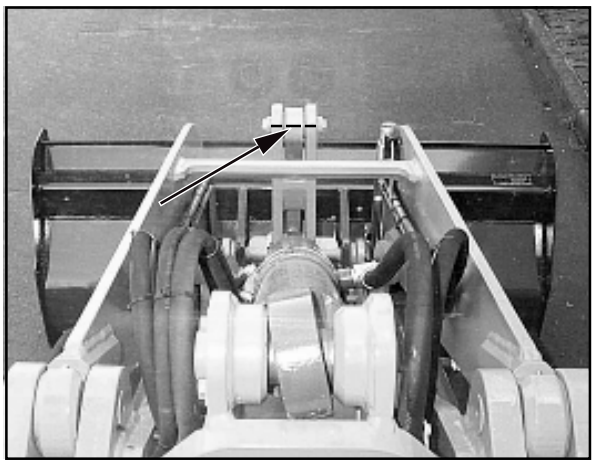

Figure 4-4

Lifting device suspension

(option)
When the loader must be driven over larger distances, especially with a loaded bucket, the lifting device suspension (4-8/15) should be activated to avoid resonant motion. This becomes even more important with increasing unevenness of the terrain and increasing speed of the loader.

Bucket position mark

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

Equipment

Operator's cabin

Standard ROPS design with ECC conformity certificate. Comfortable entry and exit from both sides, good all-round vision, lockable doors, sun visor, front and rear windscreen wipers/washers, rear window heater, multi-speed heating/ventilation system, heating and ventilation filters.

Driver's seat

The driver's seat has a hydraulic suspension and is provided with weight compensation. Horizontal and seat height positioning as well as for backrest and seat inclination permit optimum individual adaptation. The seat belt, the fold-up arm rests and the ergonomically formed seat and back rest assure a safe and comfortable seat position.

4.3 Changing a wheel

(1) Park the machine on solid ground.

(2) Set the drive switch (4-7/13) to “0”.

(3) Apply the parking brake (4-7/14).

(4) Changing a front wheel:
- Lift and mechanically prop up bucket arm [e.g. by inserting the bucket arm support (option) (1-1/arrow)] and lower bucket arm until it rests on the bucket arm support.
- Block the swivel mechanism by inserting the blocking wedge (1-3/arrow) in the swivel blocking device (1-4/arrow) and secure using the spring cotter pin.

(4) Changing a rear wheel:
Place the attachment on the ground.

(5) Turn the ignition key (4-8/19) to the left to the “0” position.

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

(7) Secure the machine by placing two wedges under one wheel of the axle where **no** wheel is to be changed.

(8) Loosen the wheel nuts of the wheel to be changed until further loosening does not require a large torque.

(9) Fit an appropriate jack (minimum capability = 2.0 t) from the side under the axle bridge in the vicinity of the axle fixture so that it is centered and cannot slip. Lift the front/ rear axle from the side until the wheel does not have any contact to the ground.

DANGER

- Block the jack by a suitable support to prevent any penetration into the ground.
- Make sure that the jack is fitted well.

(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 off the wheel from the wheel hub by moving it back and forth. Remove the wheel and roll it aside.

(13) Push the new wheel on to the planetary axle.

NOTE

- Pay attention to the profile position.
- If the profile position of the replacement wheel does not fit, the replacement wheel must only be used until an appropriate one can be fitted as soon as possible.

(14) Fit the wheel nuts by hand: if necessary, grease them beforehand.

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

(16) Tighten the wheel nuts with a torque wrench to 300 Nm.

CAUTION

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

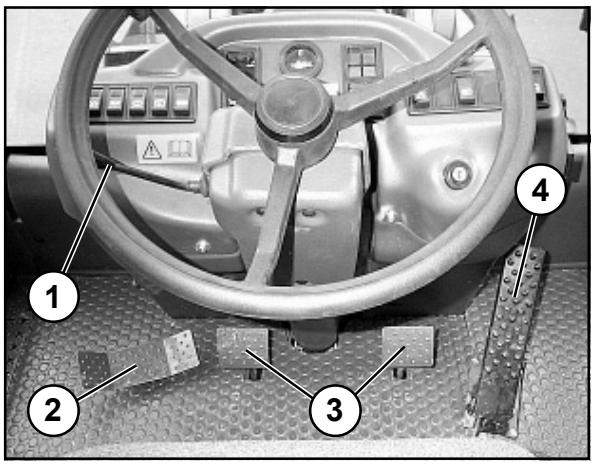

Figure 4-5

4.4 Controls

1 - Steering column switch
- to the front: Turn indicator, right
- to the rear: Turn indicator, left
- up - Low beam
- down - High beam
- pushbutton - Signal horn

2 - Foot pedal for swiveling
3 - Double pedal for service brake/inching
4 - Accelerator pedal

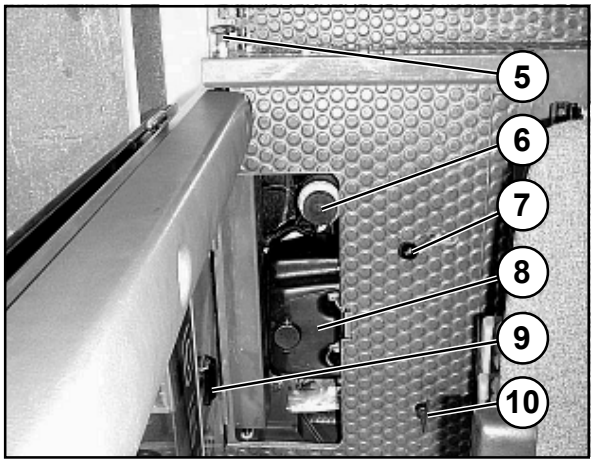

Figure 4-6

5 - Door handle
6 - Brake hydraulic oil reservoir
7 - Switch lever for steering
8 - Water tank for wiper system
9 - Maintenance door
10 - Battery main switch

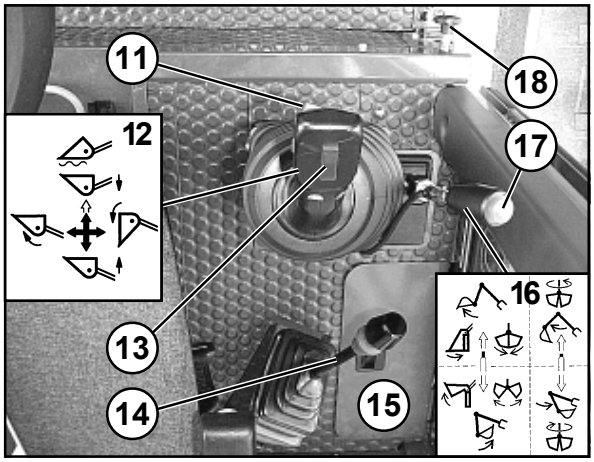

Figure 4-7

11 - Hydraulic driving steps:
- right - speed I: slow
- left - speed II: fast

12 - Pilot valve for working hydraulics
13 - Drive switch:
Forward/0/reverse
14 - Parking brake hand lever
15 - Maintenance door
16 - Pilot valve for auxiliary hydraulics
17 - Push-button auxiliary hydraulics (option)
18 - Door handle

4.5 Instrument panel

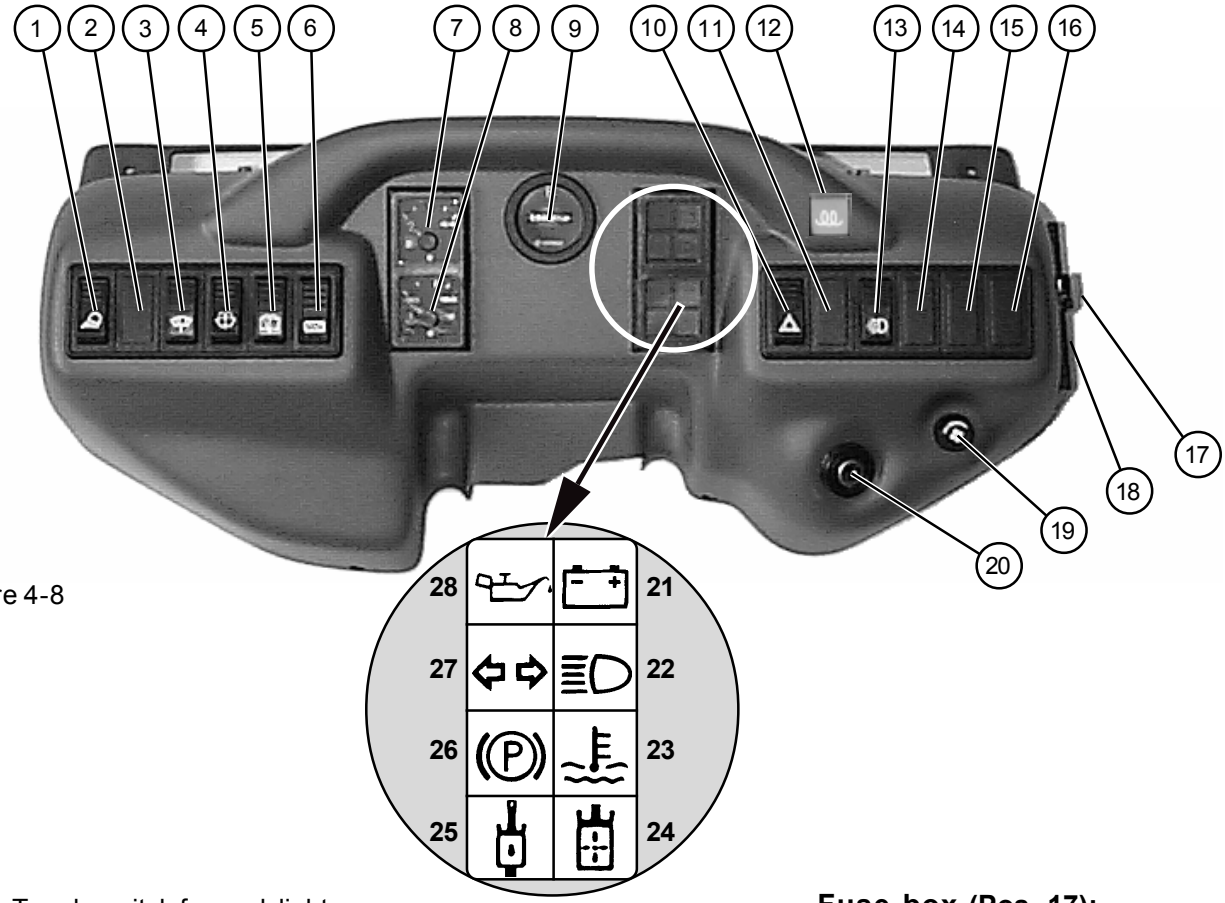

Figure 4-8

1 - Toggle switch for work lights
2 - Push-button: release of quick-change device
3 - Toggle switch for interval wiper, front
4 - Push-button: front washer
5 - Toggle switch/push-button for rear wiper/washer
6 - Toggle switch for rear window heater
7 - Fuel gauge
8 - Engine oil temperature display
9 - Operating hours meter
10 - Toggle switch for hazard flasher system
11 - Toggle switch for beacon light (optional)
12 - Control lamp: Preheating (optional)
13 - Toggle switch for road lights
14 - Gear switch (only for fast loaders)
15 - Not assigned
16 - Toggle switch for lifting device suspension (optional)
17 - Socket
18 - Fuse box
19 - Rotary switch for heating/ventilation system
20 - Starter switch
21 - Control lamp for battery charging
22 - Control lamp for high beam
23 - Control lamp for cooling water temperature
24 - Hydraulic oil filter clogging indicator
25 - Control lamp for hydraulic oil temperature
26 - Control lamp for parking brake
27 - Control lamp for directional indicator
28 - Control lamp for engine oil pressure

Fuse box (Pos. 17):

10	9	8	7	6
	14	13	12	11	
5	4	3	2	1

1	Traction drive	10,0 A
2	Turn indicator	7,5 A
3	Hydraulics, brake lights	20,0 A
4	Heater	20,0 A
5	Rear window heater	20,0 A
6	High beams	15,0 A
7	Low beams	15,0 A
8	Tail light, left parking light, left	5,0 A
9	Tail light, right parking light, right	5,0 A
10	Hazard flasher	15,0 A
11	Windshield wiper/washer	20,0A
12	Engine cut-off	5,0 A
13	Working lights	20,0 A
14	Warning beacon (option), signal horn, socket, interior lighting	30,0A