

5 Operation

5.1 Checks before start-up

- Engine oil level (see the operating instructions for the engine)
- Brake fluid level
- Hydraulic oil level
- Fuel level
- Tire pressure
- Profile depth
- Lighting system
- Seat position
- Ball block valve for the working and auxiliary hydraulics (1-3/arrow); open if necessary
»only if work is to be commenced«
- Bucket arm support (1-2/arrow); remove if necessary
- Articulation safeguard (1-4/arrow); remove if necessary
- General state of the loader, e.g. check for leaks

5.2 Starting up

5.2.1 Starting the diesel engine

- (1) Pull the lever for the parking brake (4-12/3).
- (2) Set the drive switch (4-12/6) to position "0" (starter interlock!).
- (3) Insert the battery main switch (4-11/3).
- (4) Insert the ignition key into the starter switch (4-13/19) and turn the key clockwise to position "I" (5-1).

NOTE

- The control lamp for battery charging, the parking brake indicator lamp and the engine oil pressure lamp light up. The fuel gauge, the engine oil temperature gauge and the operating hour meter function.
- Start the engine in position "0" of the drive switch (4-12/6).

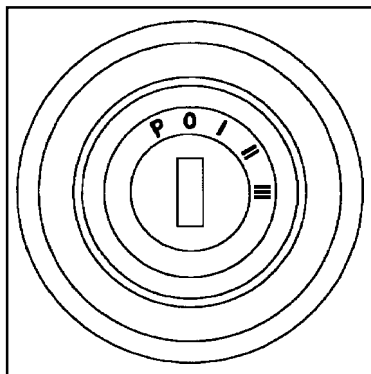


Figure 5-1



(5) Turn the ignition key clockwise to position "III" (5-1). As soon as the engine starts, release the ignition key.



NOTE

- If the engine has not started after two attempts, determine the cause using the malfunction table in the operating instructions for the engine (section 7.1).
- For operation at extremely low temperatures, see the operating instructions for the engine.
- The clogging indicator for the hydraulic oil filter (4-13/23) may light up prematurely after a cold start. It will go out when the hydraulic oil warms up. Operate the loader at a **low** speed until the indicator lamp goes out. Never subject the loader to full loads in this state.

5.2.2 Winter operation



CAUTION

If the outside temperature is below 0 °C, the machine must be properly "warmed up" to avoid damage to certain assemblies. To do so, actuate all cylinders (lifting and tipping cylinders) for some time (depending on the ambient temperature) with the machine idling.

Proper operation of the machine can only be guaranteed even for subzero temperatures if the following measures have been taken:

5.2.2.1 Fuel

At low temperatures, paraffin precipitating from the fuel can cause the fuel system to clog up.

For this reason, always use winter diesel fuel (suitable for temperatures down to -15 °C) when the outside temperature is below 0 °C.

NOTE

The fuelling stations normally start offering winter diesel fuel in good time before the cold season starts. Often, they offer diesel fuel that can be used down to temperatures of -20 °C (super-grade diesel fuel). If the temperature is below -15 °C or -20 °C, paraffin oil must be added to the diesel fuel. For the mixture ratio, refer to the diagram (5-2).

I = Summer diesel fuel
II = Winter diesel fuel
III = Super-grade diesel fuel

CAUTION

Only mix the ingredients in the tank! First, fill in the required amount of paraffin oil, then top up with diesel fuel.

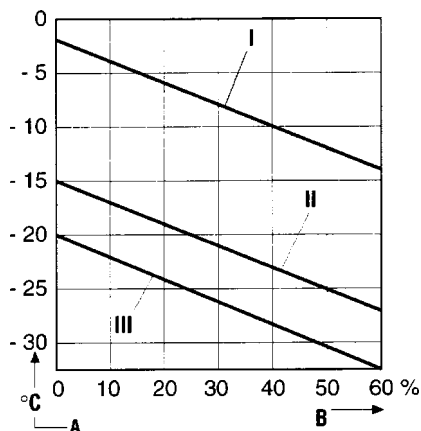


Figure 5-2

5.2.2 Changing the engine oil

See the operating instructions for the engine and the operating instructions for the machine (section 8.2.2).

5.2.2.3 Changing the oil in the hydraulic system

CAUTION

The viscosity of the hydraulic oil changes according to the temperature; therefore, the ambient temperature in the place where the machine will be used determines what viscosity class (SAE class) must be chosen. If the hydraulic oil used matches the expected ambient temperature, optimum operating conditions can be attained. Therefore, use hydraulic oil of an appropriate grade if required. See section 8.2.12 for the oil change procedure required for the hydraulic system.



5.2.2.4 Anti-freezing agent for the windshield washer system



CAUTION

If the temperature is expected to drop below 0 °C, add a sufficient amount of anti-freezing agent to the water in the windshield washer system (4-11/5) to prevent it from icing up.

Heed the instructions provided by the manufacturer for the mixture ratio.

5.2.3 Driving the loader on public roads



CAUTION

- Driving on public roads is **only** permitted with an **empty** standard, multi-purpose or light-weight material bucket and **only** with bucket protection.
- A warning triangle and a first-aid kit must be provided in the loader.
- The drive stages of the distribution gear may only be selected when the loader is at a standstill (4-13/13) and only if the travel direction switch (4-12/6) is set to "0" » only for fast loaders - 30 km/h «.



NOTE

- The driver of the loader must possess a valid driver's license.
- The driver must carry his driving license (original) and the operating permit (original) with him.

Before driving on public roads, the following safety measures must be taken:

(1) Lower the bucket arm until the lowest point of the bucket arm or the bucket is at least 30 cm above the road (5-3).

(2) Close the ball block valve for the working and auxiliary hydraulics (1-3/arrow).

CAUTION

When closed (rear position), the ball block valve is perpendicular to the flow direction. This prevents the bucket arm from being lowered and the bucket from tipping while driving.



(3) Cover the bucket cutting edge and teeth with the bucket protector (5-3/arrow).

(4) Insert the plug of the bucket protector into the socket (5-4/arrow).

(5) Check that the lighting system functions correctly.

(6) Close both doors.



Figure 5-3

DANGER

- Driving on public roads with the bucket filled is forbidden.
- The working searchlights must be switched off (4-13/1).

(7) Release the parking brake (4-12/3).

(8) Preselect hydraulic drive stage II (4-12/7).

(9) Set the gear shift to "II" (4-13/13)

» only for fast loaders - 30 km/h «.

(10) Preselect the travel direction (4-12/6).

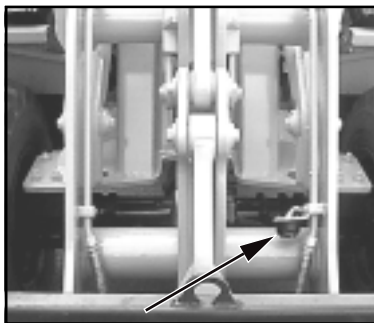


Figure 5-4

(11) Press the accelerator pedal (4-10/3).



NOTE

- The loader starts. The travel speed is determined by the position of the accelerator pedal.
- The service brake is activated by depressing the brake pedal (4-10/2).



DANGER

Changing the travel direction during driving is **not** allowed to avoid any danger to other road users.

5.2.4 Working with the loader

Normally, all work is executed in hydraulic drive stage II (4-12/7) and a gear stage that matches the working conditions (4-13/13) » only for fast loaders - 30 km/h «.



CAUTION

The drive stages of the distribution gear may only be selected when the loader is at a standstill (4-13/13) and only if the travel direction switch (4-12/6) is set to "0" » only for fast loaders - 30 km/h «.

For special tasks which ask for a more sensitive control of the speed or a higher engine speed at reduced travel speed, hydraulic drive stage "I" (4-12/7) can be selected. The travel speed can thus be reduced to 6 km/h (AL 70e) or 7 km/h (AL 85t, AL 100t and AL 100ti).

To attain full performance, the combined action of propulsion and of the working hydraulics is necessary. It is up to the operator to control the available power using the accelerator, the inching function and the hand lever for the working hydraulics.

NOTE

The hydraulic drive stage can be switched from I to II or vice versa while driving. However, switching from drive stage II to I is not recommended when driving at high speeds since the loader is then braked very abruptly.



- (1) Close both doors.
- (2) Release the parking brake (4-12/3).
- (3) Preselect the gear stage (4-13/13) » only for fast loaders - 30 km/h «.
- (4) Preselect the hydraulic drive stage (4-12/7).
- (5) Select the desired travel direction (4-12/6).
- (6) Press the accelerator pedal (4-10/3).

NOTE

- The travel speed and the thrust force are altered exclusively by depressing the accelerator pedal.
- When driving up gradients, the travel speed decreases in spite of full throttle in favour of the thrust force.
- The thrust forces and travel speeds are the same in forward and reverse direction.





Figure 5-5

CAUTION

- The hydraulic quick-change device must only be **locked** if an attachment has been mounted.
- If the control lamp for the hydraulic oil temperature (4-13/24) lights up during operation, the loader must be switched off immediately, the cause must be determined by a hydraulics expert and the malfunction must be eliminated.

5.2.5 Heating and ventilation system

5.2.5.1 Adjusting the amount of air

(1) Turn the rotary switch (5-5/arrow) for the blower to position 0, 1 or 2, depending on the amount of air desired.

(2) Adjust the direction of the air flow by means of the lateral nozzles (5-6/arrow).



Figure 5-6

5.2.5.2 Switching on the heater

(1) Depending on the heat required, turn the ball valve lever (5-7/arrow) to the front or to the side.

NOTE

Lever to the front - warm.
Lever to the side - cold.

(2) Adjust the amount of air as described under 5.2.5.1.

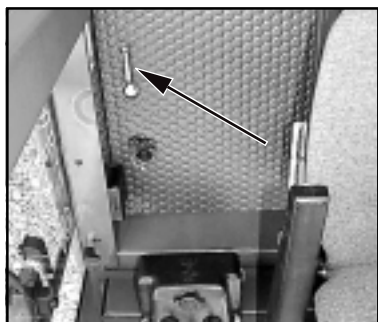


Figure 5-7

5.3 Stopping loader operation

5.3.1 Parking the loader

- (1) Stop the loader on solid ground; if possible, not on a slope.
- (2) Place the bucket or the front-mounted attachment on the ground.
- (3) Set the drive switch (4-12/6) to "0".
- (4) Apply the parking brake (4-12/3).

DANGER

If parking on a gradient cannot be avoided, wheel chocks must be used and placed on the sloping side of the front axle wheels in addition to applying the parking brake, and the articulation safeguard must be inserted. On slopes, the wheel chocks must be placed on the sloping side of the rear axle wheels.



5.3.2 Switching off the diesel engine

CAUTION

If the diesel engine is very hot or has been subjected to heavy loads, let the engine idle for a short time before switching it off.



Turn the ignition key to the left to position "0" (5-1) and remove the key.

NOTE

In position "P", the parking light and the dashboard illumination remain switched on.



5.3.3 Switching off the heating and ventilation system

- (1) Shut off the warm air supply (5-7/arrow).
- (2) Turn the rotary switch (5-5/arrow) for the blower to position "0".

5.3.4 Leaving the loader

- (1) Close the ball block valve for the work and auxiliary hydraulics (1-3/arrow).
- (2) Remove the ignition key and lock the doors.
- (3) Remove the battery main switch (4-11/3).

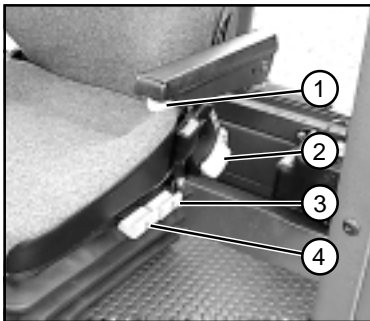


Figure 5-8

5.4 Adjusting the operator's seat

- (1) Adjust or swing forward the back support using the hand lever (5-8/2).
- (2) Adjust the rear seat height and inclination by pulling the hand lever (5-8/3) upwards.
- (3) Adjust the front seat height and inclination by pulling the hand lever (5-8/4) upwards.
- (4) Adjust the height of the arm rest by turning the knob (5-8/1).
- (5) The seat suspension can be adjusted to the driver's weight (40 ... 130 kg) using the hand wheel (5-9/1).
- (6) The operator's seat can be adjusted in the horizontal direction to suit the driver's requirements by pulling the handle (5-9/2) upwards and moving the seat forward or backward.

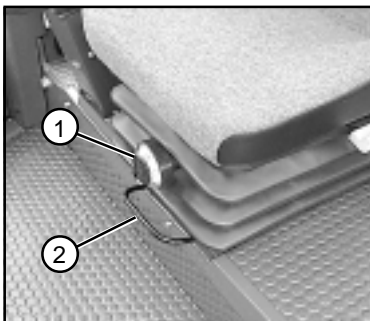


Figure 5-9