

Operation

5 Operation

5.1 Checks before start-up

- Engine oil level (see the operating instructions for the engine)
- Brake fluid level
- Hydraulic oil level
- Tyre pressure
- Profile depth
- Battery fluid level
- Lighting system
- Seat position
- Enable the swivel restriction. For this purpose, the toggle switch (4-11/14) top must be pushed and the switch locked.
 - » only if work is to be commenced «
- Swivel unit safeguard (1-4/arrow); remove if necessary
 - » only if work is to be commenced «
- Remove telescope arm prop [(e.g. bucket arm support (option) (1-2/arrow))] if necessary
- Open ball block valve for working and auxiliary hydraulics if necessary » only if work is about to begin «
- General state of the loader, e.g. check for leaks
- The presence of
 - a first aid kit
 - a warning triangle
 - a signal lamp
 must be verified.

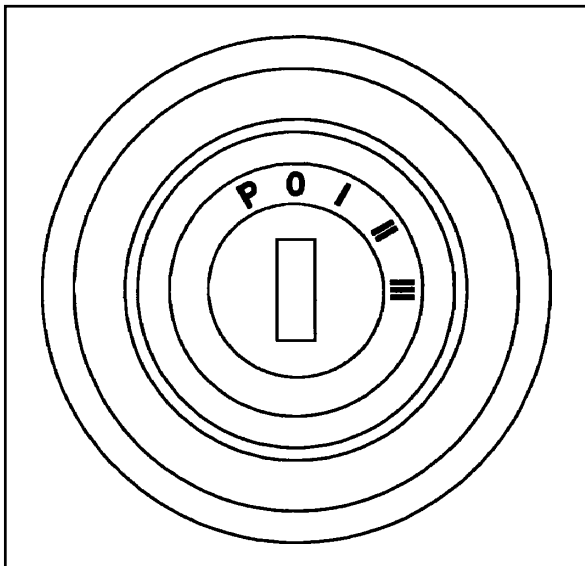


Figure 5-1

5.2 Commissioning

5.2.1 Start the diesel engine

- (1) Fasten the safety belt (5-8/2).
- (2) Engage the parking brake lever (4-10/4).
- (3) Set the drive switch (4-10/12) to "0" (starter interlock!).
- (4) Insert the ignition key into the starter switch (4-11/19) and turn the key clockwise to position "I" (5-1).

NOTE

- The indicator lamps for battery charge, parking brake and engine oil pressure light up. The fuel level and coolant temperature instruments deflect.
- Start the engine in the neutral position.

- (5) Turn the ignition key clockwise to position "III". 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 (4-11/25) 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 (4-11/25) 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 loader must be properly "warmed up" to avoid damage to certain assemblies. To do so, actuate all cylinders (lifting, tipping and swivelling and telescope cylinders) for some time (depending on the ambient temperature) with the machine idling.



Proper operation of the machine, even for subzero temperatures, can only be guaranteed 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.

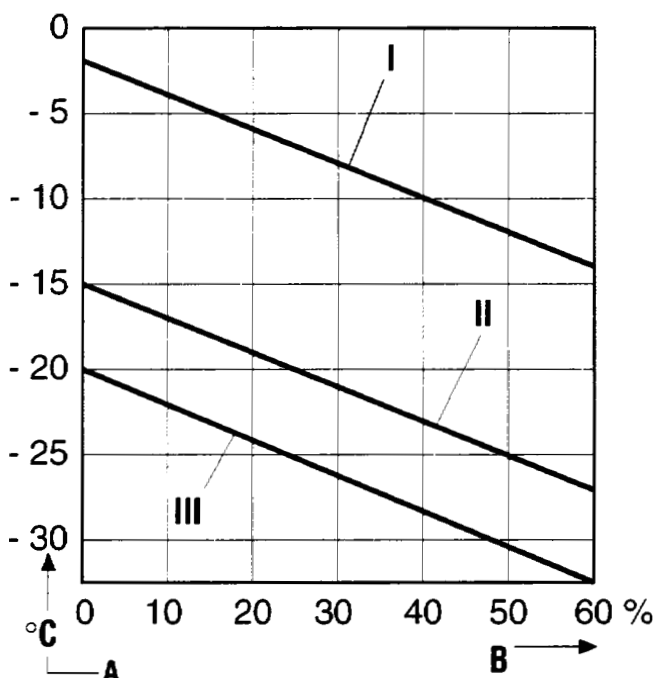


Figure 5-2

5.2.2.2 Engine oil change

See the operating instructions for the engine and the operating instructions for the machine (section 8.2.4).

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 location 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 higher grade hydraulic oil if required. See section 8.2.6 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 (4-9/3) 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 lightweight bucket and **only with** bucket protection.
- The telescope must be fully retracted.
- Driving on public roads with a filled bucket is forbidden.
- When the road lights (which are used solely to light up the road) are switched on, the highest permissible speed is 30 km/h.
- The working searchlights must be switched off (4-11/1).
- According to § 52 (4) Nr. 1 of the German Motor Vehicle Construction and Use Regulations, the warning beacon (optional equipment) may be switched on only if the loader is marked by red and white warning stripes.
- The distribution gear drive stages must only be switched at standstill, and only when the drive direction lever (4-10/12) is in the "0" position (applies to fast loaders only).

The driver of the loader must possess an appropriate, valid driver's license.

- Class V old for slow loaders
» **20 km/h variant** «
- Class III for fast loaders
» **30 km/h and 35 km/h variants** «

The driver must carry his driver's license (original) and the operating permit (original) with him.

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

5.2.3.1 Carrying a bucket

(1) Lower the telescope arm until the lowest point of the telescope 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 (1-2/arrow).

CAUTION

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

(3) Block the swivel unit by inserting the blocking wedge (1-3/arrow) into the swivel block (1-4/arrow) and secure it with the spring locking lever.

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

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

(6) Perform a function check.

(7) Lock both doors.

(8) Switch the switching lever for the steering to the "rear-wheel steering" position (4-9/2).

(9) Release the parking brake (4-10/4).

(10) Choose gear step II (4-11/13) - only for the fast loader.

CAUTION

The distribution gear drive stages must only be switched at standstill, and only when the drive direction lever (4-10/12) is in the "0" position.

(11) Preselect hydraulic drive stage II (4-10/13).

(12) Select the travel direction (4-10/12).

(13) Press the accelerator pedal (4-8/2).

NOTE

The loader starts. The travel speed is determined by the position of the accelerator pedal.

CAUTION

- The service brake is activated by depressing the brake pedal (4-8/3).
- Changing the travel direction during driving is **not** allowed to avoid any danger to other road users.



Figure 5-3



Figure 5-4



5.2.4 Working with the loader

Normally, all work is executed in hydraulic drive stage II (4-10/13) and a gear stage that matches the working conditions (4-11/13) (applies to fast loaders only).



CAUTION

The distribution gear drive stages must only be switched at standstill, and only when the drive direction lever (4-10/12) is in the "0" position (applies to fast loaders only).

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" (4-10/13) can be selected. The travel speed can thus be reduced to 6 km/h.

To attain full performance, the combined action of propulsion and 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) Lock both doors.
- (2) Release the parking brake (4-10/4).
- (3) Select the transmission stage (4-11/13) (applies to fast loaders only).
- (4) Select the hydraulic drive stage (4-10/13).
- (5) Select the travel direction (4-10/12).
- (6) Press the accelerator pedal (4-8/2).



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 the forward and the reverse direction.



CAUTION

- Observe the load indicator (4-5) during operation, in particular when picking up loads. The load indicator continuously informs the driver of the current load state of the telescope loader.
- If the hydraulic oil temperature indicator lamp (4-11/26) 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.

DANGER

If driving with the telescope arm swivelled is required in special cases, the bucket/attachment must be positioned close over the wheel and the travel distance must be kept as short as possible. If unevenness of the ground causes the support system to lift a wheel off the ground, the telescope arm must be briefly swivelled in the direction of travel so that the axle block can be cancelled.

5.2.5 Heater and ventilation system

5.2.5.1 Setting the air flow

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



Figure 5-5

(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 a vertical or front position.

NOTE

Ball valve vertical - cold.

Ball valve to the front - warm.

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



Figure 5-7

5.3 Decommissioning the loader

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 attachment on the ground.
- (3) Set the drive switch (4-10/12) to "0".
- (4) Apply the parking brake (4-10/4).



DANGER

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

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 heater and ventilation system

- (1) Shut off the hot 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) Secure the hand lever for the working and auxiliary hydraulics (1-2/arrow).
- (2) Remove the ignition key and lock the doors.



DANGER

The right driver's cab door may be used as an emergency exit only.

5.4 Adjusting the driver's seat

5.4.1 Isri seat

- (1) Adjust or swing forward the backrest using the hand lever (5-8/3).
- (2) Fasten the safety belt (5-8/2).
- (3) Adjust the seat height and rear inclination by pulling the hand lever (5-8/4) upwards.
- (4) Adjust the seat height and front inclination by pulling the hand lever (5-8/5) upwards.
- (5) The seat suspension can be adjusted to the driver's weight (40 - 130 kg) with the handwheel (5-9/1).
- (6) Adjust the height of the arm rest by turning the knob (5-8/1).
- (7) Readjust the position of the pilot valve for the working and auxiliary hydraulics (4-10/9) if necessary.
- (8) 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.

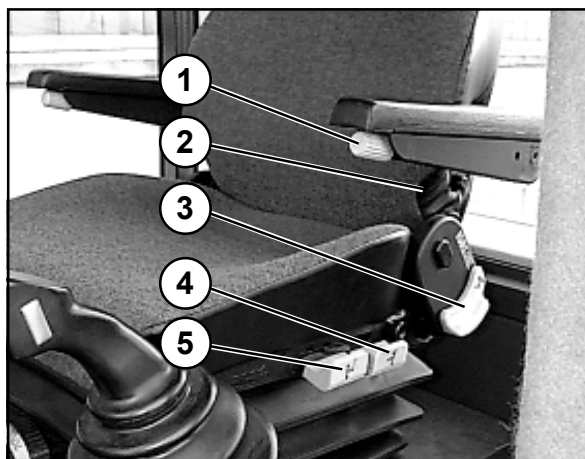


Figure 5-8

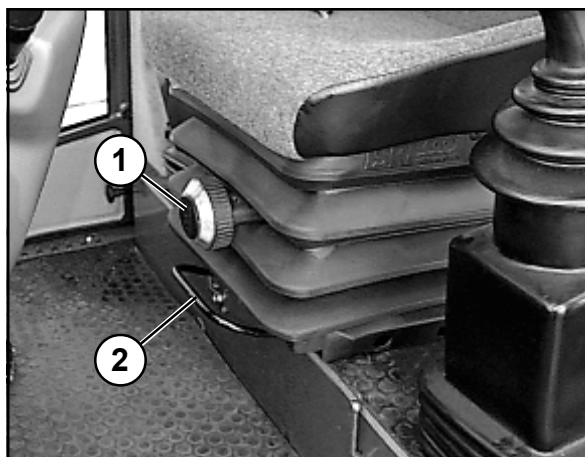


Figure 5-9

5.4.2 Grammer seat

(1) Weight adjustment:

Adjust the seat to the driver's weight by actuating the weight adjustment lever. The set driver's weight is visible in the inspection window (5-10).

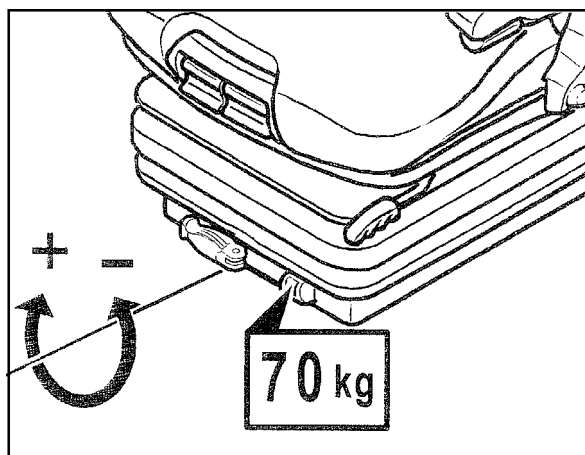


Figure 5-10

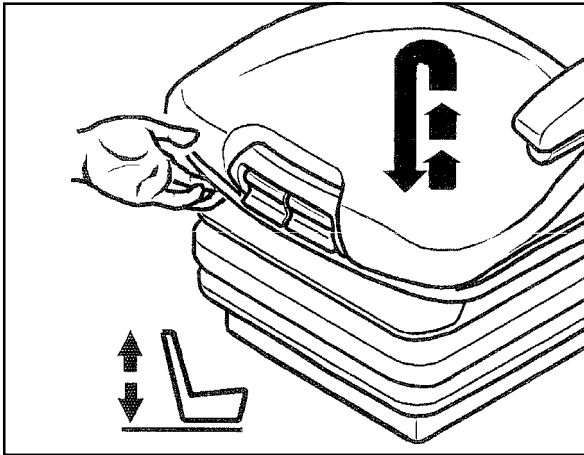


Figure 5-11

(2) Height adjustment:

The height can be adjusted in several steps. Lift the driver's seat to the desired height until it can be heard to engage. The seat returns to the lowest position when it is lifted over the topmost position (stop) (5-11).

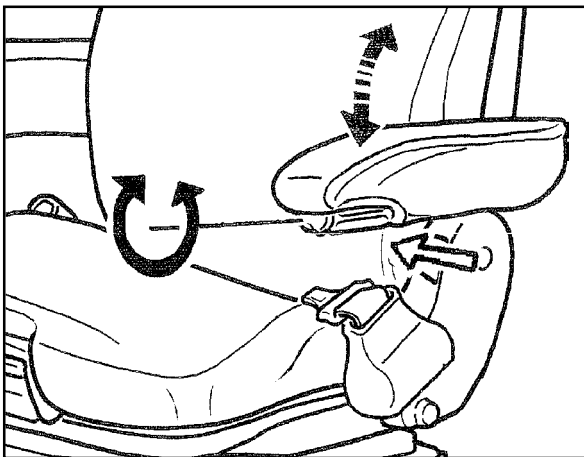


Figure 5-12

(3) Armrest inclination:

Turn the handwheel (5-12/arrow) to adjust the armrest in longitudinal direction.

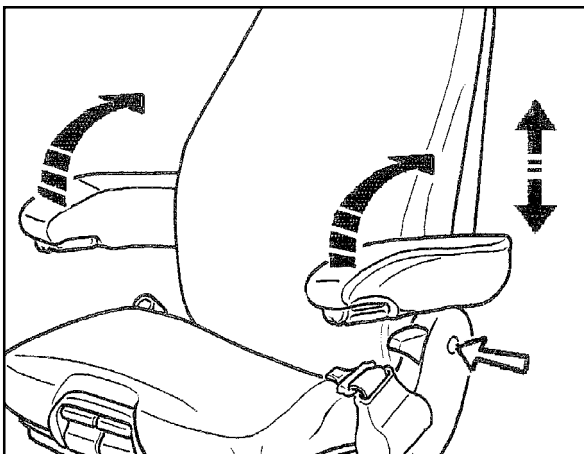


Figure 5-13

(4) Armrests:

If desired, you can swing the armrests to the rear and adjust their height.

To adjust the armrest height, remove the round cap (5-13/ arrow) in the covering.

Loosen the hex nut (wrench size 13 mm), set the armrest as desired and tighten the nut again. Push the removed cap onto the nut again.

(5) Adjusting the backrest:

Use the locking lever (5-14/arrow) to adjust the backrest.

NOTE

The locking lever must engage in the desired position. It must be impossible to move the backrest to another position when the lever has engaged.

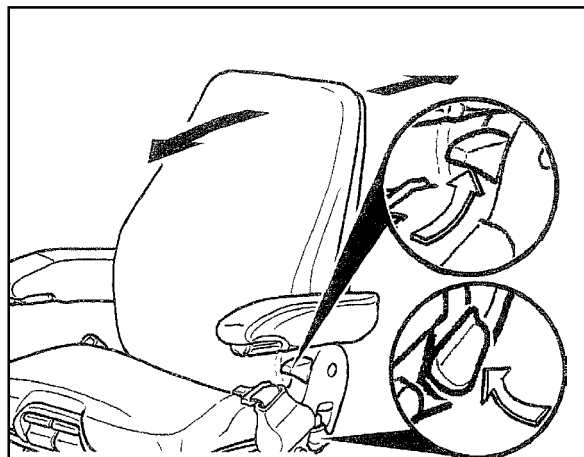


Figure 5-14

(6) Longitudinal adjustment:

You can adjust the seat in longitudinal direction when you pull the lever (5-15) upwards.

NOTE

The locking lever must engage in the desired position. It must be impossible to move the driver's seat to another position when the lever has engaged.

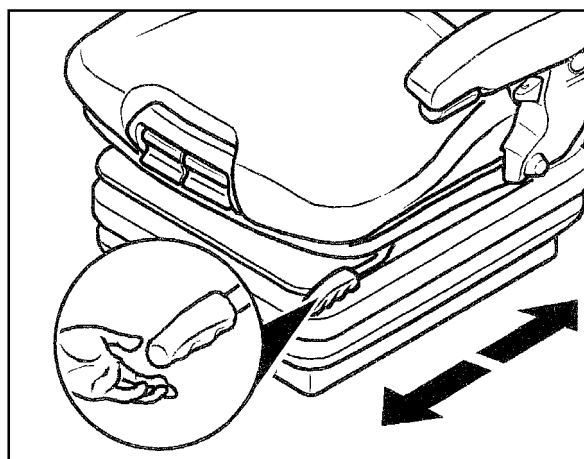


Figure 5-15

5.5 Switching the steering type**CAUTION**

- The wheels of the rear axle must be straight before the switching lever (5-16/arrow) can be applied.
- Switching the steering is only allowed when the loader is at a standstill. To switch the steering type, move the hand lever towards you (rear-wheel steering) or away from you (four-wheel steering).

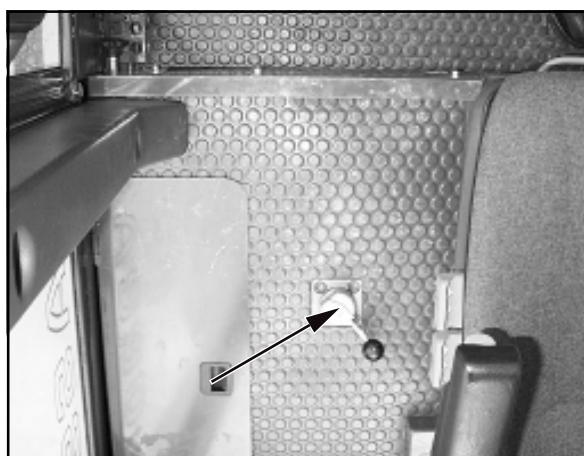


Figure 5-16