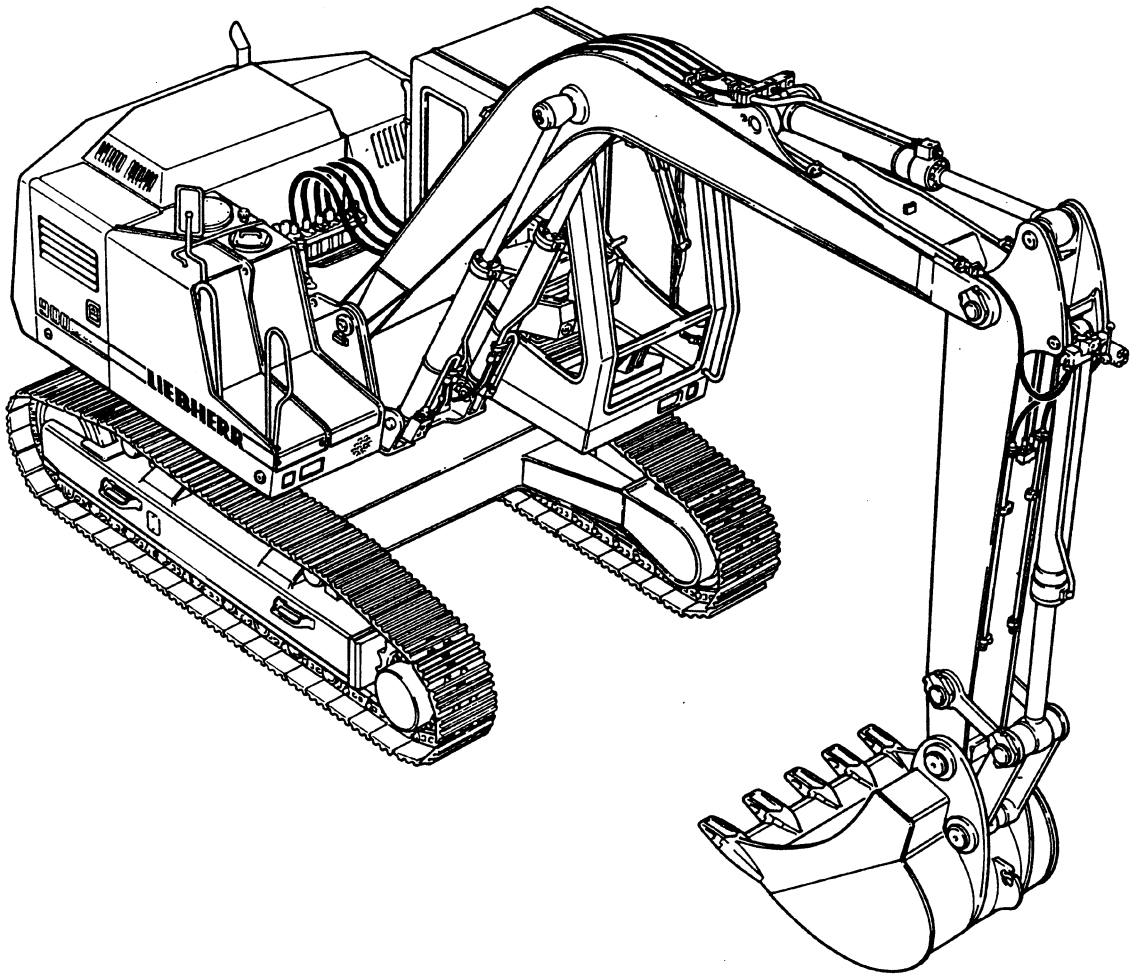
Operation and Maintenance Manual

R 900 Litronic

Serial-No. 101 - 3000



2. SAFETY INFORMATION

Working with an excavator can be dangerous, it could result in injury or death if proper precautions are not taken! **WE URGE YOU TO READ THIS MANUAL CAREFULLY!** This safety information is provided to operators and maintenance mechanics to ensure the safe operation and maintenance of the excavator. It is essential that you read and familiarize yourself with this information, which explains safety requirements and precautions and specific hazards of which you should be aware. This also applies to any personnel which might be working on the machine only occasionally, such as during set up or maintenance. It is essential that you read and familiarize yourself with this information, which explains safety requirements and precautions and specific hazards of which you should be aware.

- Careful adherence to these safety guidelines will permit safe operation and maintenance and potentially prevent personal injury to yourself and others, and possible damage to the excavator.
- Important safety notes such as **DANGER, CAUTION** or **NOTE** are used throughout this manual to emphasize important or critical instructions.
  In this manual, **DANGER, CAUTION** or **NOTE** are defined as follows :

⚠ DANGER

Denotes an extreme intrinsic hazard which could result in a high probability of death or serious injury if proper precautions are not taken.

⚠ CAUTION

Denotes a reminder of safety practices or directs attention to unsafe practices if proper precautions are not taken.

☞ NOTE

NOTE describes operation and maintenance procedures which should be followed to keep your excavator operation and to insure long machine life and/ or to facilitate certain procedures.

In addition to these instructions you must follow the safety regulations applicable to your work environment and job site and any federal, state and local safety requirements (A model excavators must also follow local and federal highway regulations).

For EC countries, guidelines 89 / 655 / EWG contain the minimum safety guidelines for users.

DESTINED USE

The excavator with the standard backhoe, grapple or bucket attachment may only be used to loosen, pick up, move, load and dump soil, gravel, rock, or other material and to load trucks, barges, conveyor belts, or rock crushing systems.

Special guidelines are applicable for machines used for lifting applications and special safety devices must be installed.

Any other use above and beyond the applications described above, such as breaking out rock or demolishing buildings, pounding in posts etc. requires special attachments and safety devices.

Transporting personnel or loads etc. is not considered destined use and is therefore prohibited. The manufacturer / dealer is not responsible for any resulting damage. Any risk must be carried by the user himself.

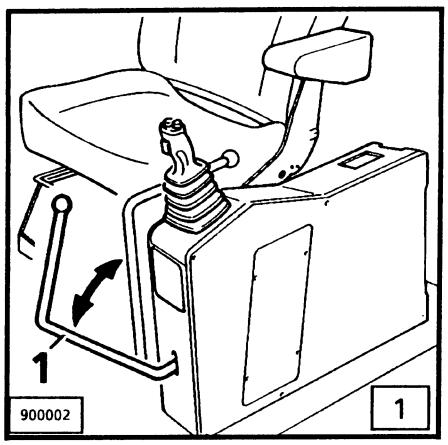
Destined use is considered part of observing and adhering to all regulations and inspection and maintenance guidelines given in this Operation and Maintenance Manual.

3. CONTROLS AND INSTRUMENTATION

THE OPERATOR'S SEAT

VIBRATION DAMPER ON THE OPERATOR'S SEAT

The determined vibration speed a_{zw}, measured according to ISO 2631, part 1 is between 0.5 and 2.5 m/s^2 when used as specified.



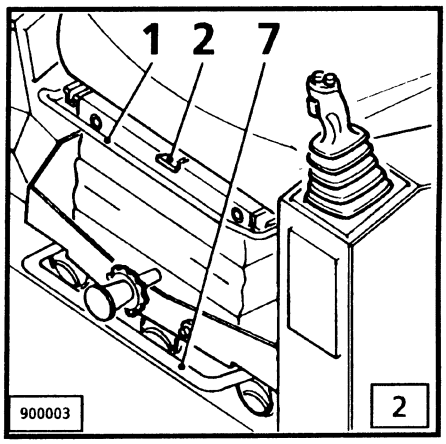
ADJUSTING THE OPERATOR'S SEAT

Before adjusting the seat, tilt up the safety lever (fig. 1) to relieve the servo pressure.

Horizontal seat adjustment :

To move the seat **forward / backwards without moving the two joysticks**, pull the lever (fig. 2, pos.1) up and slide seat to desired position.

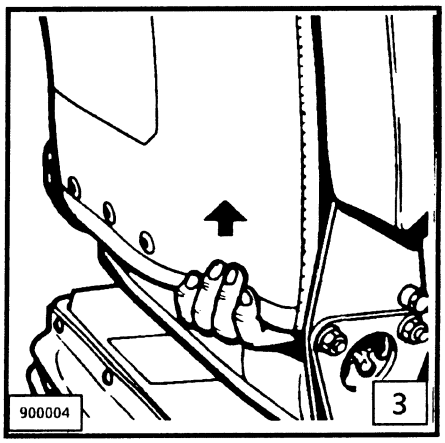
To move the complete seat forward/backward **with the joysticks**, pull the lever 7 up.



Seat cushion tilt adjustment :
To adjust the seat cushion, push knob 2 to the left.

Back rest tilt adjustment :

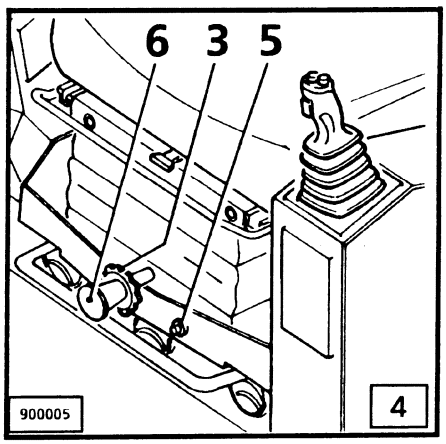
To adjust the backrest, push the backrest up with both hands and adjust the tilt (fig. 3).



Seat height adjustment :

To adjust, turn knob 3 (fig. 4).
Turn the knob clockwise to lower the seat and counter-clockwise to raise the seat.

Seat suspension adjustment :
The suspension should match the operator's weight.
To adjust, turn knob 6 clockwise to increase the suspension or counterclockwise to decrease the suspension. The adjustment is at is optimum point when the pin 5 is even with the seat.



Armrest tilt adjustment :
The armrest can be adjusted by turning the screw on the back to adjust tilt. Turn the screw clockwise to raise the armrest in the front, counterclockwise to lower the armrest in the front.

STARTING THE ENGINE WITH FLAME GLOW PLUG AT AMBIENT TEMPERATURES BELOW -12° C (10° F)

Starting the engine with the flame glow plug makes it easier to start the engine at low temperatures.
Turn the throttle control lever 14 to starting position -2- 2 (fig. 10) .
Turn the ignition key to preheat position -2- (fig. 9).
The indicator light 70 (fig. 14) will light up and turn off after about 30 seconds.
Start the engine by turning the ignition key to starting position. As soon as the engine has started, let go of the ignition key and return the throttle control lever to idle.

If the engine does not start, return to contact position.

Do not crank the engine for more than 10 seconds! If the engine does not start, repeat the starting procedure at 2 minute intervals to allow the starter motor to cool off.

NOTE

Do not use the flame glow plug is the engine is hot or at operating temperature!

STARTING THE ENGINE AT AMBIENT TEMPERATURES BELOW -18° C (0° F) OR STARTING PROBLEMS

At these temperatures we recommend use of the Original LIEBHERR cold start system. This system can be controlled from the cab and replaces the glow plug.

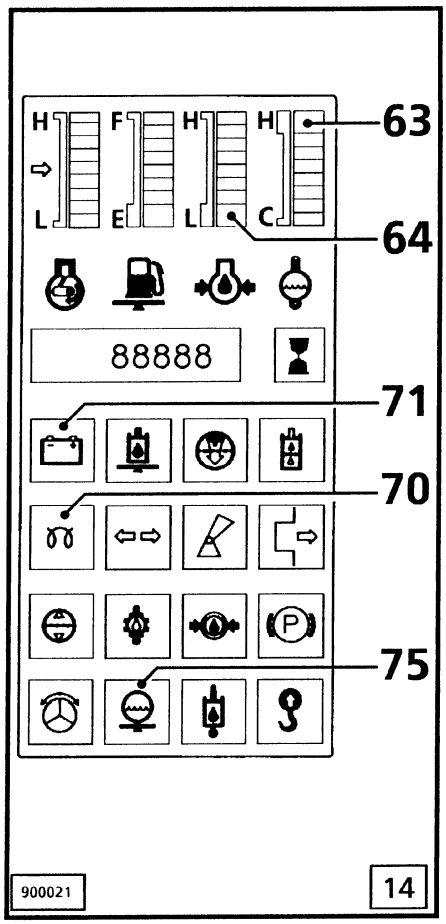
AFTER THE ENGINE IS RUNNING

The following indicator lights must turn off after the engine is running (fig. 14):
- 64 - Engine oil pressure
- 71 - Charge indicator

If the engine oil pressure indicator light 64 does not turn off, the engine has to be turned off immediately. If the engine overheats or the coolant level is low, indicator lights 63 or 75 (fig. 14) light up and at the same time an acoustical signal is given.
The engine has to be turned off immediately in this case.

DANGER

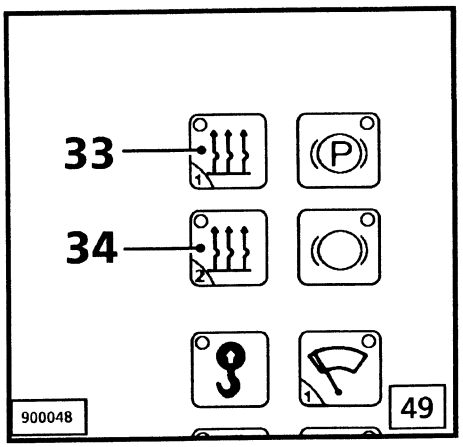
- Only run the engine if good ventilation is provided. Open doors and windows, if necessary, to provide sufficient ventilation.
- Run the engine until the hydraulic oil is at operating temperature. Low engine and hydraulic oil temperatures cause the excavator to be sluggish and unresponsive.
- Carefully move the machine outside and check the function of the travel and swing brakes.
- Check if all attachment functions are operating properly.



THE HEATER / VENTILATION

VENTILATION

The ventilation can be turned on or off via button 33 (fig. 49).

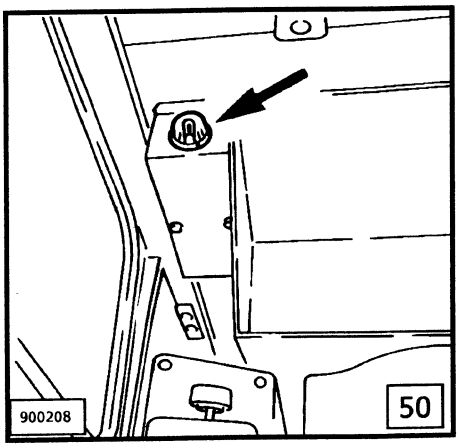


HEATER

The heater is turned on via button 34 (fig. 49). The green indicator light on the temperature regulator for the heating unit (fig. 50) will light up.

Turn the temperature regulator knob (fig. 50 and fig. 51) to the right to select the lowest room temperature (1) and continue turning via the medium range (2-3) to reach the maximum heating temperature (4).

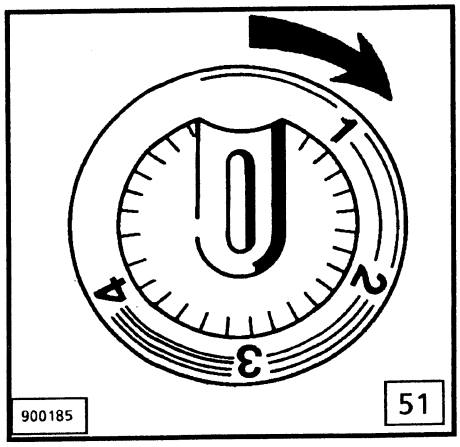
When button 34 (fig. 49) is turned off, the green indicator light goes off. The fan continues to run to cool down. This cool-down period automatically ends after approx. 3 minutes.



CAUTION

Do not turn the heater on again while it is in the cool-down period. Please check the fan noise!

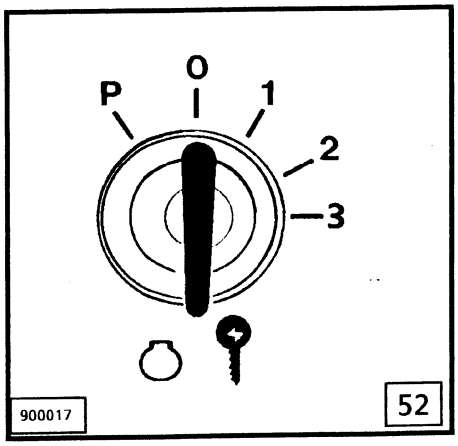
The heater must be turned off during machine refueling. Never operate the heater in a closed area, such as a garage or workshop area!

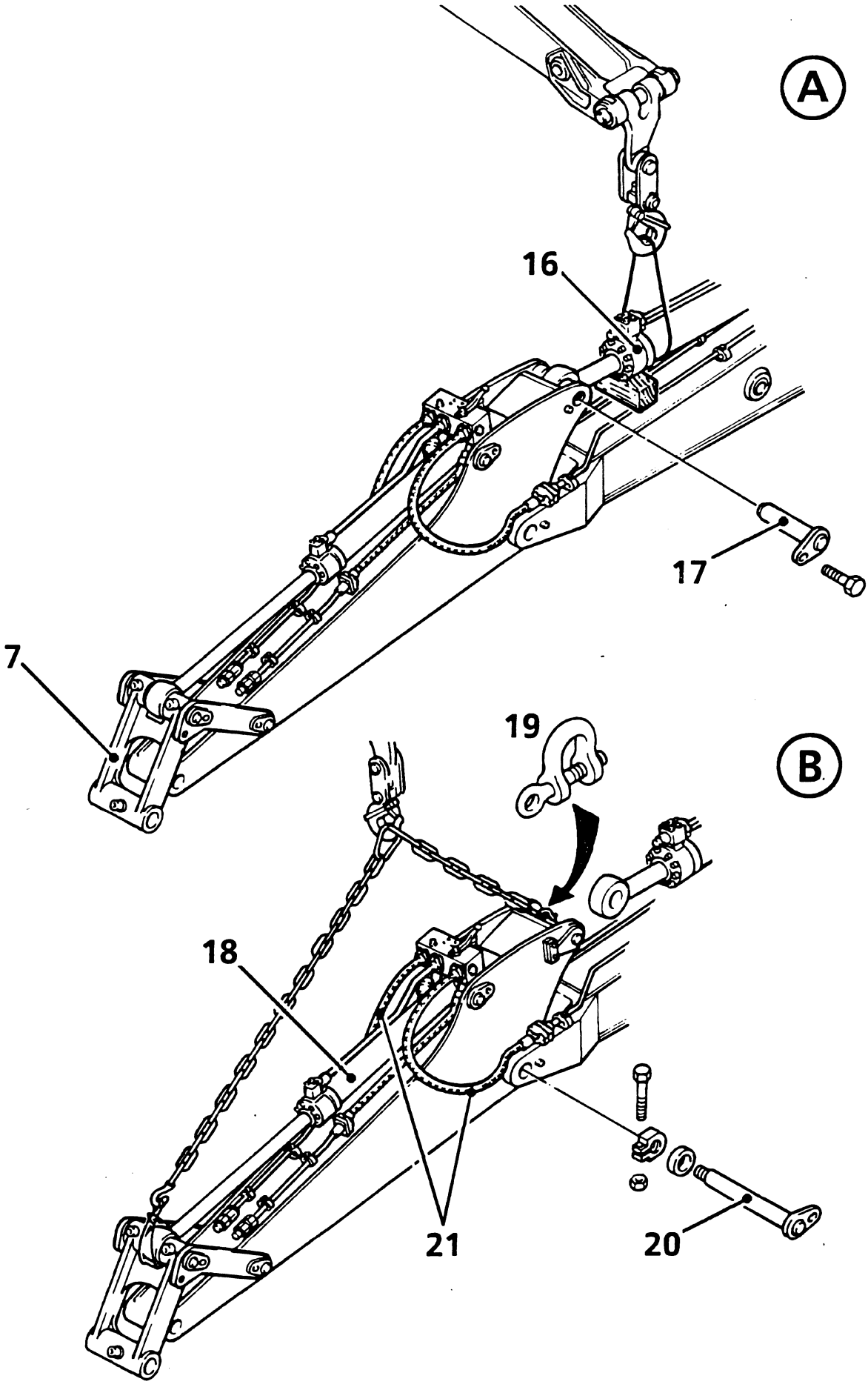


For additional information as well as any heater problems, check the 'Eberspächer Heater' Operation Manual.

HEATING WITH THE ENGINE SHUT DOWN

To keep the heating system in operation while the engine is shut down put your ignition key on position **1** (fig. 52).





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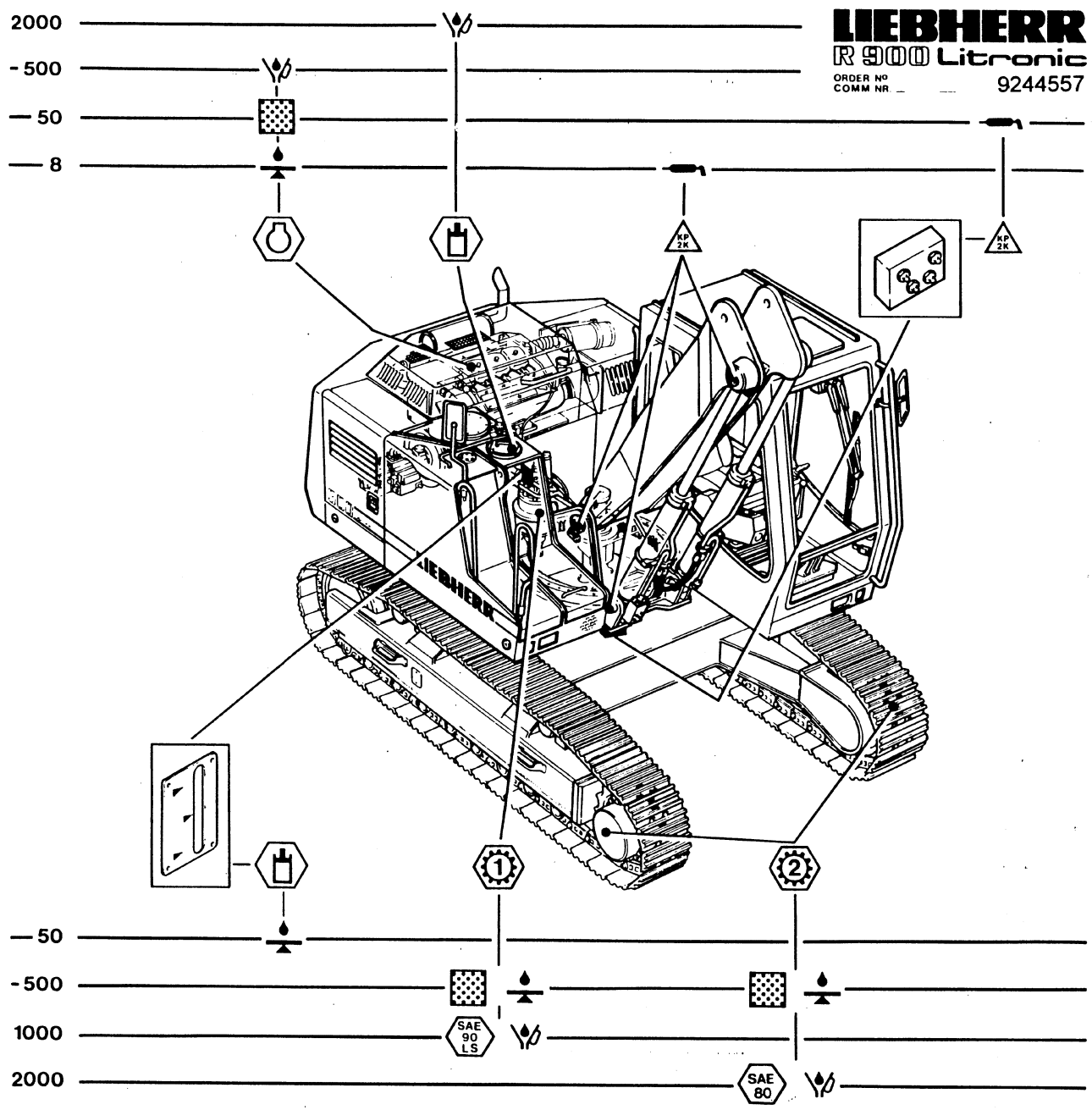


LIEBHERR
R 900 Litronic
ORDER Nº
COMM NR. 9244557

Dieselmotor: Engine: Moteur thermique:	13,5 l 3,6 US gal	
Hydraulikanlage: Hydraulic system: Circuit hydraulique:	320,0 l 85,0 US gal	
Drehwerksgetriebe: Swing gear: Réducteur d'orientation:	2,0 l 0,5 US gal	
Fahrgetriebe: Travelling gear: Mécanisme de translation:	3,0 l 0,8 US gal	

Allgemeine Schmierstellen
Lubrication points
Points de Graissage

Ölstand prüfen
Oil level check
Vérification des niveaux

Ölwechsel
Oil change
Vidange

Erster Ölwechsel
First oil change
Premiére vidange

Schmierung
Lubrication
Graissage

R 900 Litronic

HYDRAULIC LINES AND HOSES

- Hydraulic lines and hoses may never be repaired!
- All hoses, lines and fittings must be checked regularly, but at least 1 x per year for leaks and any externally visible damage! Any damaged sections must be replaced immediately! Excaping oil can cause injuries and fires!
- Even if hoses and lines are stored and used properly, they undergo a natural aging process. For that reason, their service lift is limited.
  Improper storage, mechanical damage and improper use are the most frequent causes of hose faulires.

  The service life of a hose may not exceed six years, including a storage period of not more than 2 years (always check the manufacturer's date on the hoses).

  Using hoses and lines close to the limit ranges of permitted use can shorten the service life (for example at high temperatures, frequent working cycles, extremely high impulse frequencies, multi shift or around the clock operations).
- Hoses and lines must be replaced if any of the following points are found during an inspection:
  - Damage on the external layer into the inner layer (such as chaffings, cuts and rips);
  - Brittleness of the outer layer (crack formation of the hose material);
  - Changes in shape, which differ from the natural shape of the hose or line, when under pressure or when not under pressure, or in bends or curves, such as separation of layers, blister or bubble formation;
  - Leaks;
  - Non observance of installation requirements;
  - Damage or deformation of hose fittings, which might reduce the strength of the fitting or the connection between hose and fitting;
  - Any movement of hose away from the fitting;
  - Corrosion on fittings, which might reduce the function or the strength of the fitting;
  - Storage or service life has been exceeded.

  When replacing hoses or lines, always use Original replacement parts.
- Route or install the hoses and lines proberly. Do not mix up the connections!

REPLACE THE SAFETY ELEMENT (fig. 38)

The safety element 6 should be replaced at least once a year or after the main element has been replaced 3 times.

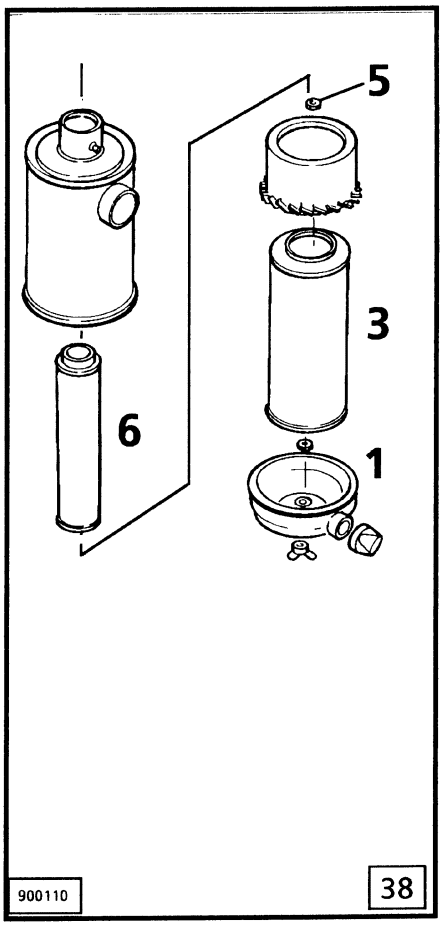
Visually check the safety element. It should be replaced if it looks dirty.

This safety element should only be replaced by an authorized LIEBHERR mechanic!

Remove the main element as described before. Remove nut 5 and remove safety element 6.
Carefully clean the inside of the filter housing with a damp rag.
Clean the sealing surfaces and check for damage.

Carefully insert the new safety element and reinstall nut 5.

Install the main filter element 3 as described on previous page and close the filter housing.



CHECK THE AIR INTAKE HOSE (fig. 39)

The air hose between filter and engine intake pipe 7 must be checked for damage and leaks whenever the filter element is replaced.

If necessary, retighten clamps 8.