3.1 General notes

Please read this section thoroughly before operating this machine if you are not yet conversant with the indicators and control elements. All functions are described in detail hereunder.

Paragraph 4 Operation contains only concise descriptions of the individual operating steps.

3.2 Description of indicators and control elements

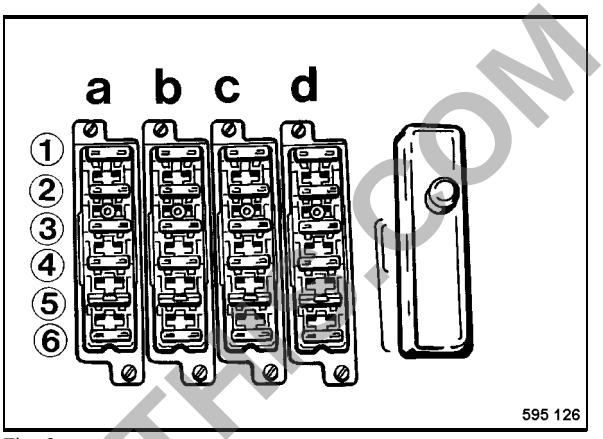


Fig. 6

Nr. 1 = Fuse box

Fuse box "a"

(1), 30A = (F05) socket
(2), 30A = (F11) head lights, StVZO
(3), 30A = (F13) starting
(4), 30A = (F19) working head lights, front, left
(5), 30A = (F22) working head lights, rear
(6), 30A = (F21) dash board illumination

Fuse box "b"

(1), 25A = (F40) cabin heater
(2), 30A = (F37) sprinkler system, pump
(3), 30A = (F07) hazard light
(4), 30A = (F09) rear parking light, left
(5), 30A = (F10) rear parking light, right
(6) = not used

Fuse box "c"

(1), 30A = (F14) engine solenoid
(2), 30A = (F26) instruments, travel speed ranges
(3), 30A = (F24) monitoring board
(4), 30A = (F25) solenoid valve, brake/travel
(5), 30A = (F03) vibration
(6), 30A = (F23) warning horn

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4.1 General notes

Please read section 3 Indicators and Control Elements thoroughly before operating the machine if you are not yet fully familiar with the indicators and control elements of the machine.

All indicators and control elements are described in detail in this chapter.

4.2 Tests before starting to operate

The following tests must be performed before each work day or before a longer work period.

⚠ Danger

Danger of accident!

Please observe strictly the safety regulations in chapter 2 of these operating and maintenance instructions!

- Park the machine on level ground.

Check:

- Fuel tank and fuel lines for leaks
- Bolted connections for tight fit
- Function of the steering
- Machine for cleanliness, damage
- Availability of the appropriate operating and maintenance instructions,
- Check if the machine has been properly serviced.

i Note

For a description of the following work refer to the section "maintenance every 10 operating hours"

- Engine oil level

i Note

Hydraulic systems, which are filled with Panolin HLP Synth. 46, the same oil must be used for filling up. In case of any other ester based oil consult the lubrication service department of the respective oil manufacturer.

- Hydraulic oil level, top up if necessary.
- Coolant level, top up if necessary.

⚠ Danger

Fire hazard!

Do not refuel in closed rooms

- Fuel level, top up if necessary.
- Water separator for fuel system, drain if necessary.

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5.1 General notes on maintenance

When servicing the machine pay careful attention to all applicable safety instructions.

Thorough maintenance of the machine ensures maximum reliability and prolongs the service life of importants components. The work involved is small when compared with the problems which may arise if these instructions are not observed.

The terms left/right are always related to travel direction forward.

- Clean machine and engine thoroughly before starting maintenance work.
- For maintenance work park the machine on level ground.
- Maintenance work must generally be carried out with the engine shut down.
- Depressurize hydraulic lines before working on them.
- Disconnect the battery and cover it with insulation material before starting to work on electrical components.
- Always attach the articulation lock (transport lock) before starting to work in the articulation area of the machine.

Environment

During maintenance catch all running oil, coolant and fuel and do not let it seep into the ground or into the sewage system. Catch oils, coolant and fuel and dispose of environmentally.

Notes on the fuel system

The lifetime of the diesel engine depends decisively on the cleanliness of the fuel.

- Keep the engine free of dirt and water as this could damage the injection elements of the engine.
- Zinc lined drums are not suitable for storing fuel.
- The fuel drum should rest for a longer period of time before drawing off fuel.
- Do not let the suction hose disturb the sludge on the bottom of the drum.
- Do not draw off fuel from near the bottom of the fuel drum.
- Fuel left in the fuel drum is not suitable for the engine and should only be used for cleaning purposes.

Notes on the engine performance

Combustion air and fuel injection rates of the diesel engine have been carefully adjusted and determine the engine's performance and temperature level as well as the quality of the exhaust gas.

If your machine has to operate permanently in "thin air" (at high altitudes) and with full power, you should consult the after sales service of BOMAG or the service department of the engine manufacturer.

Notes on the hydraulic system

Cleanliness is of utmost importance when servicing the hydraulic system. Make sure that no dirt or other contaminating substances fall into the system. Small particles can flute valves, cause pumps to seize and block restrictors and pilot bores, thereby causing costly repairs.

- If during the daily oil level check the oil level is found to have dropped, check all lines, hoses and components for leakages.
- Seal external leakages immediately. If necessary inform the responsible service station.
- Do not store hydraulic oil drums outdoors or at least under a cover. Water may penetrate through the bunghole when the weather changes.
- Always use the filtering and filling unit (BOMAG part-no. 007 610 01) to fill the hydraulic system. This unit is fitted with a fine filter, which cleans the hydraulic oil and prolongs the service life of the filter.
- Clean fittings, filler caps and their immediate surrounding area before removing them, so that no dirt can fall in.
- Do not leave the tank opening unnecessarily open, cover it so that no dirt can fall in.

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6.1 General notes

The following work must only be carried out by qualified and trained personnel or by the BOMAG sales service.

Please observe strictly the safety regulations in chapter 2 of these operating and maintenance instructions.

Faults occur frequently due to the fact, that the machine has not been properly operated or serviced. Therefore, whenever a fault occurs, read through these instructions on correct operation and maintenance. If you cannot locate the cause of the fault or cannot eliminate it yourself by following the trouble shooting charts, you should contact our customer service departments at our branch offices or dealers.

⚠ Danger

Danger of injury!

Keep away from rotating parts of the engine.

In events of emergencies all modules in the electric installation box can be bridged.

- Vibration module
- Generator module

i Note

Wiring diagrams and hydraulic diagrams can be found at the end of the spare parts catalogue.

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General

This BOMAG machine is built in accordance with the latest technical standard and the valid technical rules and regulations. There is, however, a risk of danger for persons and property if:

- the machine is used for purposes other than those it is intended for
- the machine is operated by untrained personnel
- the machine is modified or converted in an unprofessional way
- the applicable safety regulations are not observed.

Each person involved in operation, maintenance and repair of the machine must therefore read and apply these safety regulations. This should be confirmed by obtaining the signatures of the customer, if necessary.

Furthermore the following regulations and instructions are obviously also valid:

- applicable accident prevention instructions
- generally acknowledged safety and road traffic regulations
- country specific safety regulations. It is the duty of the operator to know and observe these regulations. This applies also for local regulations and the regulations for various types of manual work. If the recommendations in this manual differ from the regulations valid in your country, you must strictly observe the regulations in your country.

Intended use

This machine must only be used for:

- compaction of bituminous materials, e.g. road surface layers. (AC and AD machines only)
- medium and heavy compaction tasks in earth work (road sub-bases)
- This machine must only be operated with fully functional safety equipment.
- The machine should be checked by an expert once every year.

Unintended use

Dangers may, however, arise from the machine if it is used by untrained personnel in an unprofessional way or if it is used for purposes other than those mentioned in these instructions.

Do not work with vibration on hard concrete, on a cured concrete layer or heavily frozen ground.

Starting and operation of the machine in an explosive environment is prohibited.

Who is allowed to work with the machine?

The machine must only be operated by trained and authorized persons which are at least 18 years of age. The responsibilities for the operation of the machine must be clearly specified and complied with.

Persons under the influence of alcohol, medication or drugs must not operate, service or repair the machine.

Maintenance and repair tasks require specific knowledge and must therefore only be carried out by trained and qualified personnel.

Conversions and alterations to the machine

Unauthorized conversions to the machine are prohibited for safety reasons.

Original parts and accessories have been specially designed for this machine. We wish to make expressly clear that we have not tested or authorized any original parts or special equipment not supplied by us. The installation and/or use of such products can impair the active and/or passive driving safety. The manufacturer expressly excludes any liability for damage resulting from the use of non-original parts or accessories.

Safety notes in the operating and maintenance instructions:

⚠ Danger

Sections marked like this point out possible dangers for persons.

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Machines marked with the CE -sign are in accordance with the latest improved safety regulations for the market within the European Union.

For machines to be used outside this area and where these regulations are not binding, BOMAG recommends the application of the same safety standards.

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Do not work with vibration on hard concrete, on a cured concrete layer or heavily frozen ground.

When passing under flyovers, bridges, tunnels, electric power lines etc. keep a sufficient distance.

Driving on slopes and gradients

Do not drive up and down gradients, which exceed the max. gradability of the machine.

On lopes always drive directly up or down. Change to the lower speed range before approaching the slope.

Wet and loose soils reduce the ground adhesion of the machine and inclinations and slopes considerably. Higher risk of accident!

Behaviour in traffic

Match the speed of the machine to the working conditions.

Always allow loaded transport vehicles to pass.

Switch the lights on when the visibility is poor.

Keep clear of edges and embankments.

Check the effect of vibration

When compacting with vibration check the effect of the vibration on nearby buildings and underground supply lines (gas, water, sewage, electric power supply), stop vibratory compaction if necessary.

Do not work with vibration on hard (frozen, concrete) ground. Risk of bearing damage!

Parking the machine

Park the machine on level and firm ground.

Before leaving the machine:

- straighten the articulated joint to allow easy access to and from the machine.
- return the travel lever to neutral position
- apply the parking brake
- shut the engine down and pull the ignition key out.
- lock the cabin
- secure the machine against unauthorized use.

Do not jump off the machine, use access steps and hand rails.

Always secure parked machines, which could be in the way, with appropriate measures.

Parking on slopes and gradients

Secure the machine against rolling, place metal chocks in front of and behind the drums.

Filling the fuel tank

Do not inhale fuel fumes.

Refuel only after shutting the engine and the auxiliary heater down.

Do not refuel in closed rooms.

No open fire, do not smoke.

Do not spill any fuel. Catch running out fuel, do not let it seep into the ground.

Wipe off spilled fuel. Keep fuel free of dirt and water.

Mix diesel fuel and gasoline (no super-grade gasoline) only inside the tank. Fill in the necessary quantity of gasoline first, then add the diesel fuel. Gasoline - diesel mixes are as inflammable as gasoline!

Leaking fuel tanks can cause explosions. Ensure tight fit of the fuel tank lid, replace immediately if required.

Fire protection measures

Become familiar with the location of fire extinguishers. Observe all fire alarm and fire fighting possibilities.

Maintenance

Observe the maintenance tasks described in the operating and maintenance instructions, including the exchange of parts.

For service and repair work in the engine compartment support the engine compartment hood.

Maintenance work must only be carried out by qualified and authorized personnel.

When performing maintenance work above body height use the access steps on the machine or any other safe ladders and working platforms. Do not use machine parts as access steps.

Keep unauthorized persons away from the machine.

Do not perform maintenance work with the machine driving or the engine running.

Park the machine on horizontal, level and stable ground.

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- Scrapers, adjust if necessary.
- Tire pressure. Pressure see technical data.

⚠ Caution

Ensure equal pressure in both tires.

4.3 Starting the engine

⚠ Danger

Danger of accident!

Always wear your seat belt.

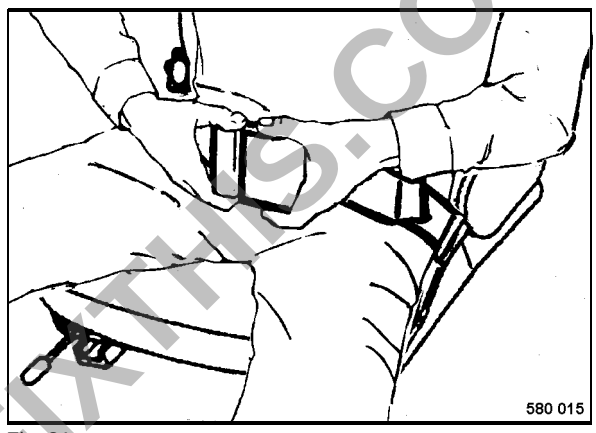


Fig. 31

- Wear your seat belt (Fig. 31).

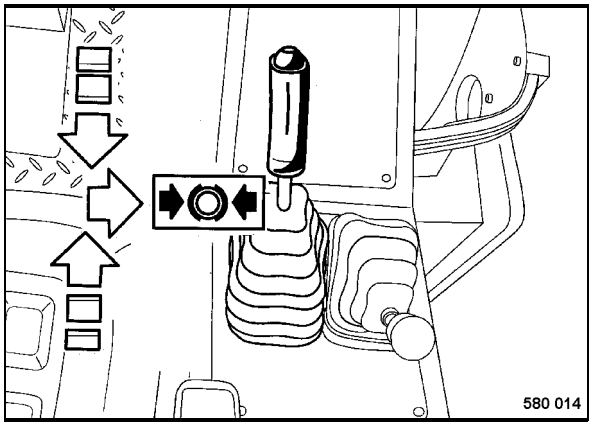


Fig. 32

- Check, whether the travel lever (Fig. 32) is locked to the right in braking position.

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Notes on the cooling system

On high performance diesel engines the preparation and control of the coolant is of special importance, since the non-observance may cause engine damage as a result of corrosion, cavitation or freezing.

The coolant is prepared by mixing the cooling water with a cooling system protection agent (ethylene glycol / propylene glycol).

Mixing of cooling system protection additives to the cooling water is necessary in all climatic zones. It prevents corrosion, lowers the freezing point and raises the boiling point of the coolant.

5.2 Fuels and lubricants

Engine oil

The use of high quality brand HD-oils in connection with the specified filter and oil change intervals prolongs the lifetime of the engine and increases its performance.

Do not use any running-in oil for new or overhauled engines.

Oil viscosity

It is recommended by CUMMINS to use preferably oils of the viscosity class SAE 15W-40.

To ensure perfect cold starting it is important to choose the viscosity (SAE grade) of the engine oil with respect to the ambient temperature.

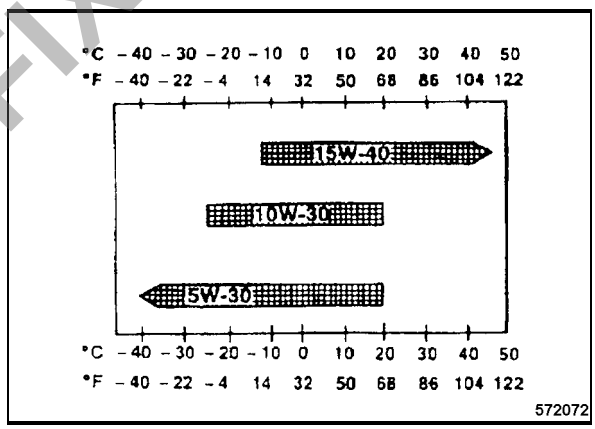


Fig. 68

Although cold starting abilities may be impaired if the temperature occasionally drops below the limit (e.g. use of SAE 15W/40 down to -15°C), this will not cause any damage to the engine.

Having to change the lubrication oil due to changes in temperature can be avoided by using multigrade oils. The oil change intervals given below are also valid for multigrade oils.

Oil quality

Lubrication oils are differentiated according to their performance and quality class. The commonly used specifications are those according to API (American Petroleum Institute) and CCMC (Committee of Common Market Automobile Constructors).

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5.18 Checking the oil level in the axle

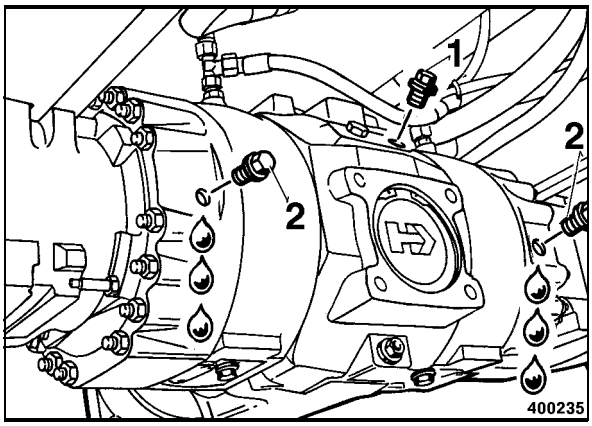


Fig. 88

- Unscrew the level control plug 2 (Fig. 88) and check the oil level.

The oil level must reach the lower edge of the bore.

- Top up oil if necessary, unscrew the filler plug (1) to do so.

For quality of oil refer to the table of fuels and lubricants.

- Screw the filler and control plug in again.

5.19 Checking the oil level in the axle reduction gear

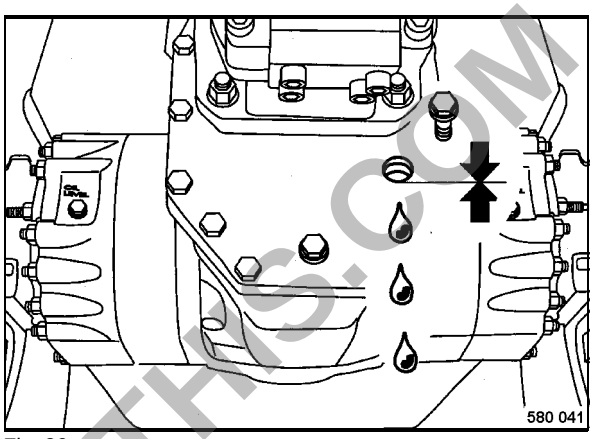


Fig. 89

- Unscrew the filler and level control plug (Fig. 89) and check the oil level.

The oil level must reach the lower edge of the bore, top up oil if necessary.

For quality of oil refer to the table of fuels and lubricants.

- Screw the filler and control plug in again.

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5.38 Changing the hydraulic oil and the breather filter

i Note

See also section 5.1 "Notes on the Hydraulic System".

⚠ Caution

Apart from the normal oil change intervals the hydraulic oil must also be changed after major repairs in the hydraulic system.

Change the hydraulic oil only at operating temperature.

Clean the area around the hydraulic oil tank, the filler opening and the breather filter.

Do not use any detergents to clean the system.

Do not start the engine after draining the hydraulic oil.

Change the hydraulic oil filter element with every hydraulic oil change.

⚠ Danger

Danger of scalding!

Danger of scalding by hot oil.

Environment

Catch running out oil and dispose of environmentally.

i Note

The hydraulic oil filter element should only be changed after the test run.

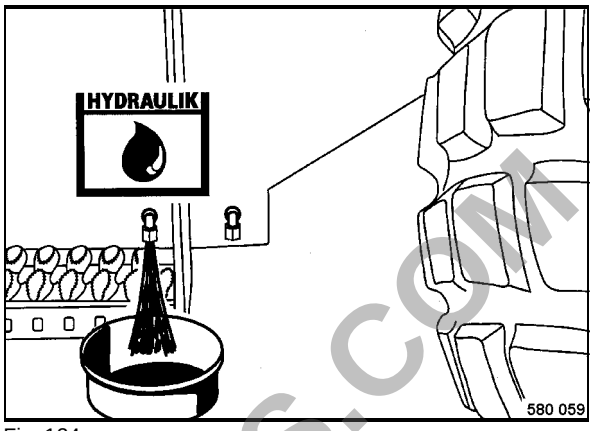


Fig. 124

- Unscrew the plug (Fig. 124) and drain the hydraulic oil off.
- Check the sealing ring (1), replace if necessary and screw the plug tightly back in.

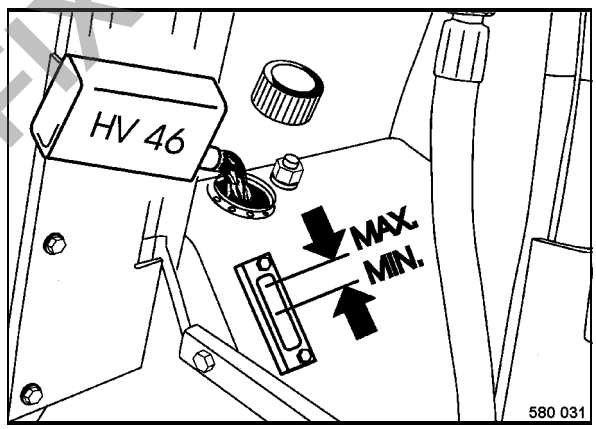


Fig. 125

- Take the filler cap (Fig. 125) off.
- Fill in hydraulic oil through the screen.

i Note

We recommend to fill the hydraulic system with the filling and filtering unit (BOMAG part-no. 079 930 35) with fine filter. This filters the hydraulic oil and prolongs the utilization time of the hydraulic oil filter and protects the hydraulic system.

- Check the oil level in the inspection glass.

Nominal value:

approx. 3 cm below the upper edge of the inspection glass

For quality and quantity of oil refer to the table of fuels and lubricants.

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