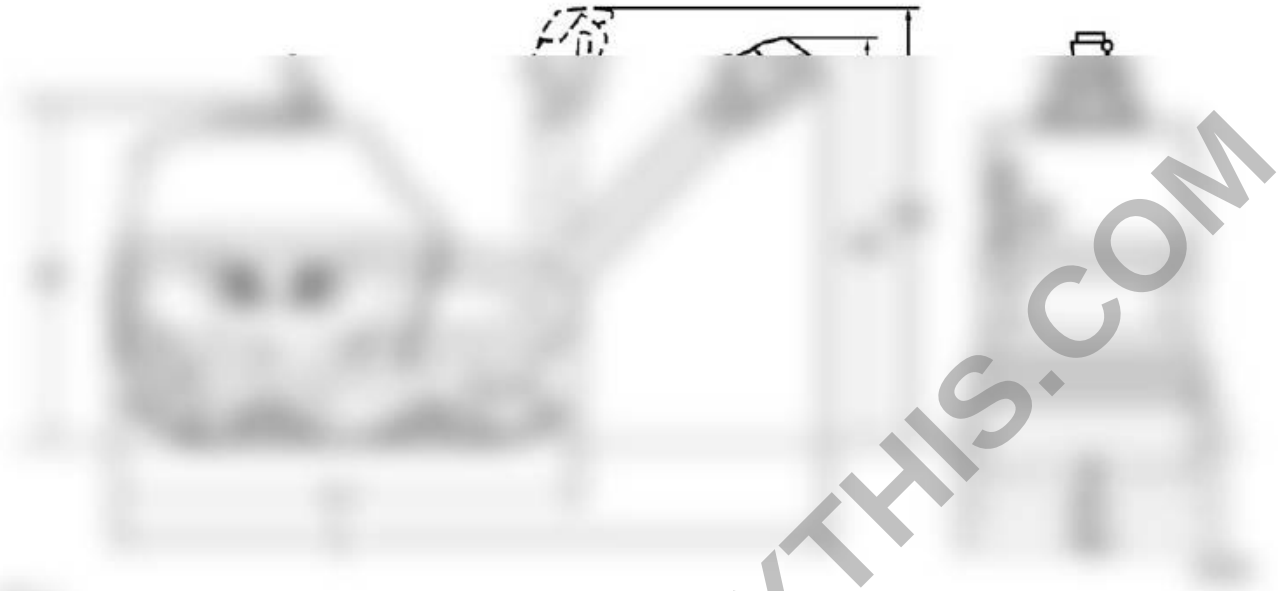


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5.5 Starting the engine

⚠ Danger

Exhaust gases are extremely dangerous!

Always ensure an adequate supply of fresh air when starting and operating in closed rooms and trenches!

⚠ Danger

Danger of accident!

Before starting make sure that there are no persons in the danger area of engine or machine and that all safety installations are in place.

Always hold on to the machine.

Always keep an eye on a running machine.

⚠ Danger

Loss of hearing!

Wear your personal noise protection means (ear defenders) before starting operation.

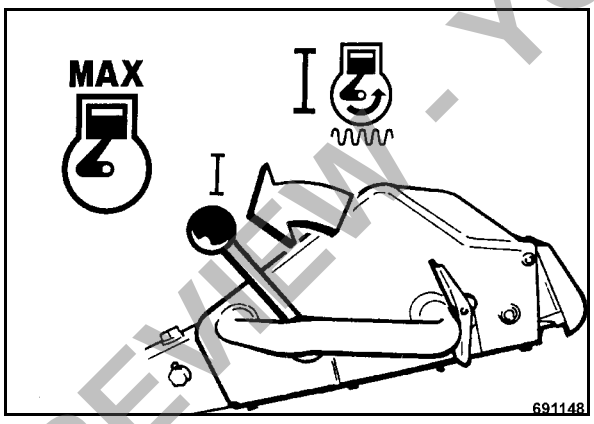


Fig. 18

- Set the throttle lever (Fig. 18) to position "MAX".

⚠ Caution

Starting attempts should not exceed 30 seconds uninterrupted or max. 3 times 10 seconds. After this time allow the starter to cool down to ambient temperature.

If the engine has not started after these attempts, determine the cause.

i Note

The starter switch is designed with a re-start lock. For a new starting attempt turn the ignition key first back to position "0".

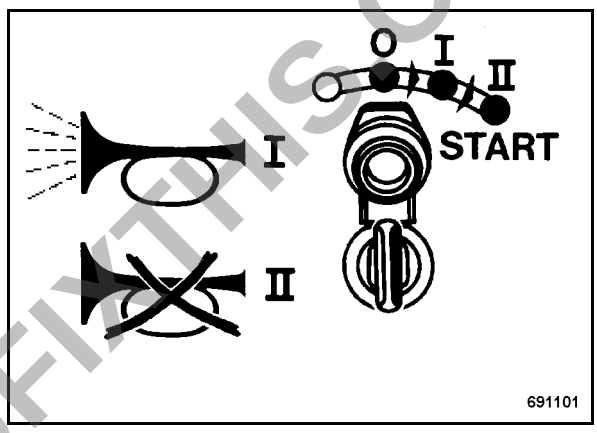


Fig. 19

- Turn the ignition key to position "I" (Fig. 19), the warning buzzer sounds.
- Then turn the ignition key further to position "II" to start the engine.
- As soon as the engine runs, return the ignition key to position "I". The warning buzzer stops.

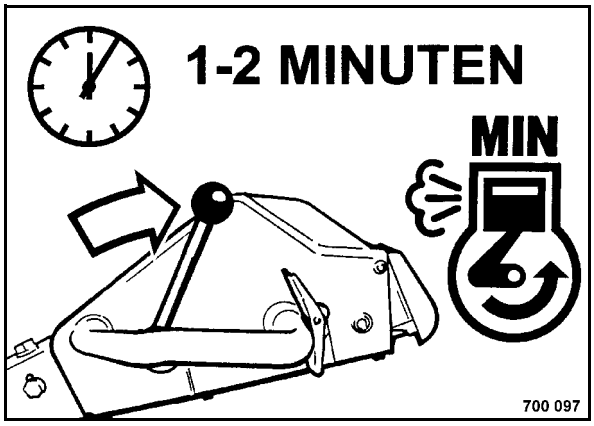


Fig. 20

- After starting take the throttle lever back to position "MIN" (Fig. 20).
- Run the engine warm for approx. 1 to 2 minutes in idle speed.

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6.5 Maintenance table

No.	Maintenance work	Comment	daily	monthly	half-annually	annually	every 2 years	as required
6.6	Clean the machine		X					
6.7	Check the engine oil level	Dipstick mark	X					
6.8	Check the fuel level		X					
6.9	Check the hydraulic oil level	Inspection glass	X					
6.10	Check the air filter service indicator	Rubber spout	X					
6.11	Clean the cooling fins and the cooling air intake openings			X				
6.12	Drain the sludge from the fuel tank			X				
6.13	Check condition of battery, grease poles				X			
6.14	Check, adjust the valve clearance				X			
6.15	Check the oil level in the exciter housing				X			
6.16	Change engine oil and oil filter	at least every 250 operating hours				X		
6.17	Replace the fuel filter					X		
6.18	Change the oil in the exciter housing	at least every 500 operating hours				X		
6.19	Check the rubber buffers					X		
6.20	Check the V-belt tension, if necessary replace the V-belt					X		
6.21	Change hydraulic oil and filter	at least every 500 operating hours					X	
6.22	Check, clean the air filter, replace if necessary	renew min. 1 x year						X
6.23	Tighten all bolted connections							X
6.24	Engine conservation							X

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7.3 Engine problems

Fault	Possible cause	Remedy
Engine does not start or does not start immediately, but can be cranked with the starter motor	Throttle lever in stop or idle speed position.	Set the lever to “Start” position.
	No fuel at the injection pump.	Fill in fuel
		Check the entire fuel system systematically.
	Insufficient compression - incorrect valve clearance	Check, adjust the valve clearance.
	- Wear on cylinder or piston rings	Have examined by a specialist.
	Injection nozzle out of order	Have examined by a specialist.
Additionally on engines with mechanical oil pressure monitoring	No oil pressure	Check the oil level.
		Activate mechanical oil pressure monitoring
With low temperatures	Temperature below starting limit.	Observe cold start instructions.
	Fuel gelled because of insufficient cold compatibility.	Pull the fuel hose off the fuel lift pump and check whether fuel runs out of the fuel pump clear and without gel. In case of gelled fuel you should either warm the engine up or drain the complete fuel supply system. Fill with a temperature resistant fuel mixture.
	Starter speed too low: - Oil with too high viscosity	Replace engine oil with oil of correct viscosity
	- Insufficiently charged battery	Check the battery, if necessary consult a specialist workshop
The starter is not switched on or the engine does not crank	Fault in the electric system: - Fuse defective	Check electric equipment and related components or consult the our customer service.
	- Battery or other cable connections not correctly connected.	
	- Cable terminals loose or oxidised	
	- Battery defective or not charged	
	- Starter defective	
	- Insufficiently charged battery	

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6.13 Check the battery condition, grease the poles 51

6.14 Check, adjust the valve clearance 52

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General

This BOMAG machine has been built in compliance with the latest technical standard and complies with the applicable regulations and technical rules. However, dangers for persons and property may arise from this machine, if:

- it is used for purposes other than the ones it is intended for,
- it is operated by untrained personnel,
- it is changed or converted in an unprofessional way,
- the safety instructions are not observed.

Each person involved in the operation, maintenance and repair of the machine must therefore read and comply with these safety regulations. If necessary, this must be confirmed by obtaining the signature of the customer.

Furthermore, the following obviously also applies:

- applicable accident prevention instructions,
- generally accepted safety and road traffic regulations,
- country specific safety regulations. It is the duty of the operator to be acquainted with these instructions and to apply these accordingly. This applies also for local regulations concerning different types of handling work. Should the recommendations in these instructions be different from the regulations valid in your country, you must comply with the safety regulations valid in your country.

Intended use

This machine must only be used for:

- Compaction of all types of soils
- Repair work on all types of soil
- Paving of walkways
- Work in trenches
- Underfilling and compaction of hard shoulders

Unintended use

Dangers may arise from the machine when it is used for purposes other than the one it is intended for.

Any danger caused by intended use is the sole responsibility of the customer or driver/operator, the manufacturer cannot be made liable.

Examples for unintended use are:

- Dragging the machine along as a measure of transportation
- Throwing the machine off the transport vehicle
- Attaching an additional weight to the machine

It is not permitted to stand on the machine while working.

Any transport ropes fastened to the machine must be removed before operation.

Starting and operation of the machine in explosive environments and in underground mining is prohibited.

Remaining dangers, remaining risks

Despite careful work and compliance with standards and regulations it cannot be ruled out that further dangers may arise when working with and handling the machine.

Both the machine as well as all other system components comply with the currently valid safety regulations. Nevertheless, remaining risks cannot be ruled out completely, even when using the machine for the purpose it is intended for and following all information given in the operating instructions.

A remaining risk can also not be excluded beyond the actual danger zone of the machine. Persons remaining in this area must pay particular attention to the machine, so that they can react immediately in case of a possible malfunction, an incident or failure etc.

All persons remaining ion the area of the machine must be informed about the dangers that arise from the operation of the machine.

Regular safety inspections

Have the machine inspected by an expert (capable person) as required for the conditiosn the machine is working under, but at least once every year.

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Please fill in

. . . . . .

Machine type (Fig. 1)

. . . . . .

Serial-number (Fig. 1 and 2)

. . . . . .

Engine type (Fig. 3)

. . . . . .

Engine number (Fig. 3)

i Note

Supplement the above data together with the commissioning protocol.

During commissioning our organisation will instruct you in the operation and maintenance of the machine.

Please observe strictly the safety regulations and all notes on risks and dangers!

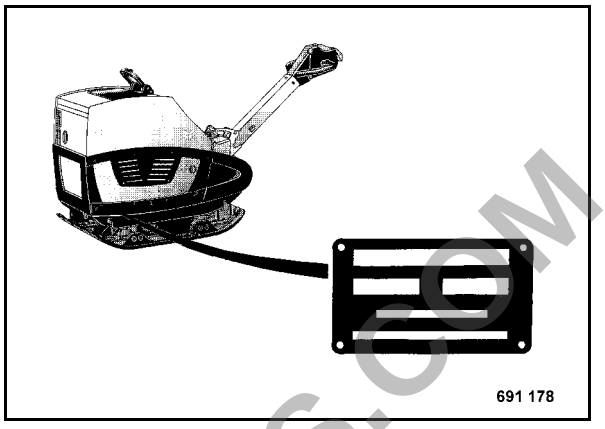


Fig. 1

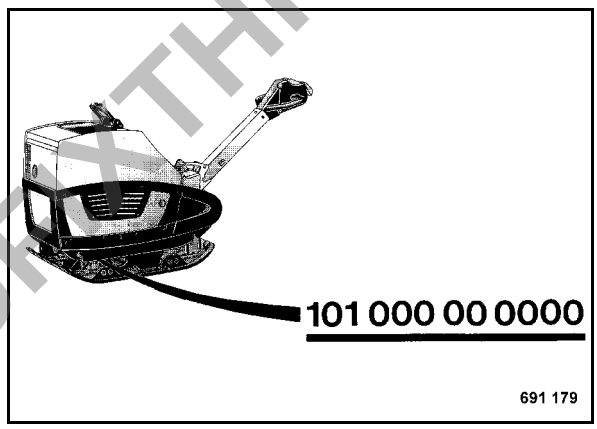


Fig. 2

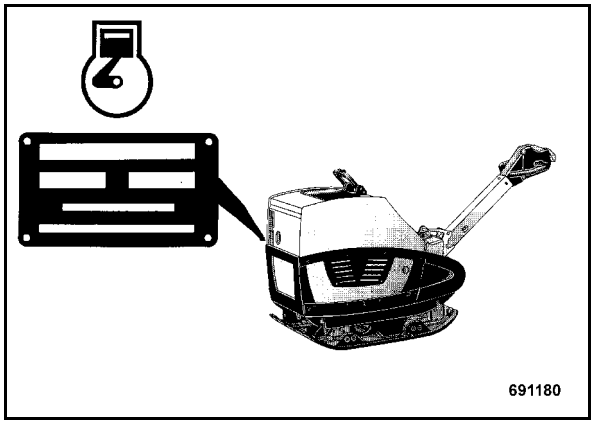


Fig. 3

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6.1 General notes on maintenance

When performing maintenance work ensure strict compliance with the respective safety instructions and particularly the safety regulations mentioned in the corresponding section of these operating and maintenance instructions.

Thorough maintenance of the machine guarantees far longer safe functioning of the machine and prolongs the lifetime of important components. The effort needed for this work is only little compared with the problems that may arise when not observing this rule.

- Always clean machine and engine thoroughly before starting maintenance work.
- For maintenance work stand the machine on level ground.
- Do not touch hot engine parts.
- Perform maintenance work only with the engine shut down.

Environment

During maintenance work catch all oils and fuels and do not let them seep into the ground or into the sewage system. Dispose of oils and fuels environmentally.

Keep used filters in a separate waste container and dispose of environmentally.

- Open the hood to perform maintenance work.

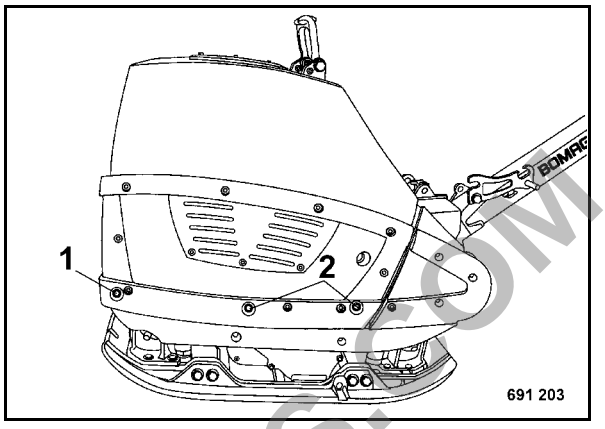


Fig. 42

- Loosen the hood fasteners (1) on both sides and remove the fasteners (2) from both sides (Fig. 42).
- Fold the hood back.

Notes on the fuel system

The lifetime of the diesel engine depends to a great extent on the cleanliness of the fuel.

- Keep fuel free of contaminants and water, since this will damage the injection elements of the engine.
- Drums with inside zinc lining are not suitable to store fuel.
- The fuel drum must rest for a longer period of time before drawing off fuel.
- Under no circumstances must the drum be rolled to the tapping point just before drawing out fuel.
- When choosing the storage place for fuel make sure that spilled fuel will not harm the environment.
- Do not let the hose stir up the slurry at the bottom of the drum.
- Do not draw off fuel from near the bottom of the drum.
- The rest in the drum is not suitable for the engine and should only be used for cleaning purposes.

Notes on the performance of the engine

On diesel engines both combustion air and fuel injection quantities are thoroughly adapted to each

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