

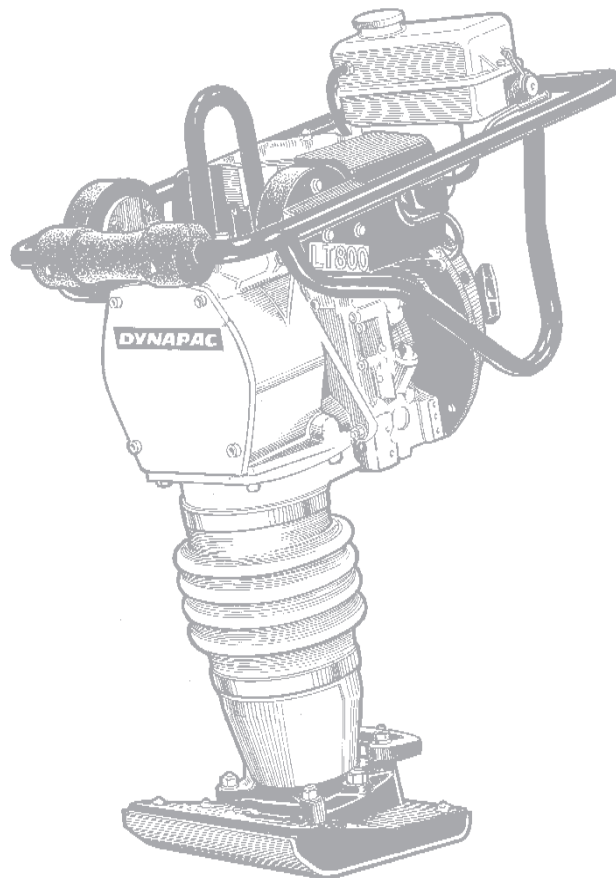
# **DYNAPAC**

## **Vibratory Tamper LT800**

### **Operation & Maintenance ILT800EN3**

**Diesel Engine:  
Hatz 1B20**

**These instructions apply from:  
PIN (S/N): \*7800001\***



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## WARNING SYMBOLS

WARNING



**WARNING:** Indicates danger or hazardous procedure that could lead to serious or mortal injury if the warning is neglected.

CAUTION



**CAUTION:** Indicates danger or hazardous procedure that could lead to machine or property damage if the warning is neglected.

## SAFETY INSTRUCTIONS

WARNING



**The safety instructions are included in this manual and must be studied by the operator. Always follow the safety rules and keep the manual available for future use.**

WARNING



**Read through the entire manual before starting any maintenance operations.**

WARNING



**Ensure good ventilation (air extraction) if the engine is run indoors.**

CALIFORNIA

### Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

## GENERAL

It is important that the machine is maintained correctly to ensure proper function. It should be kept clean so that any leakage, loose bolts and loose connections can be discovered in time.

Make a habit of inspecting the machine every day before starting up by checking all round it to detect any sign of leakage or other faults.



**SPARE A THOUGHT FOR THE ENVIRONMENT!**  
Do not let oil, fuel and other environmentally hazardous substances contaminate the environment. Always dispose of used filters, drained oil and any remaining fuel properly.


This manual contains instructions for periodic attention which should normally be carried out by the operator.

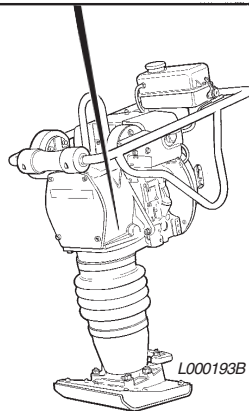


There are additional instructions relating to the engine, for which the manufacturer's instructions are detailed in the engine manual.

## MACHINE PLATE

Fill in all data below, when delivering and commissioning the machine.

<b>DYNAPAC</b> 			
Atlas Copco Construction Tools AB 105 23 Stockholm, Sweden			
Type	Operating mass kg	Rated power kW	Year of Mfg
Product Identification Number			
			4811 0000 23



.....  
Engine Model

.....  
Engine Number

## CE MARKING AND DECLARATION OF CONFORMITY

(Applies to machines marketed in EU/EEC)

This machine is CE marked. This shows that on delivery it complies with the basic health and safety directives applicable for the machine in accordance with machinery directive 2006/42/EC and that it also complies with other directives applicable for this machine.

A "Declaration of conformity" is supplied with this machine, which specifies the applicable directives and supplements, as well as the harmonized standards and other regulations that are applied.

## SAFETY INSTRUCTIONS (FOR ALL LIGHT PRODUCTS)

### Symbols

The signal words WARNING and CAUTION used in the safety instructions have the following meanings:



**WARNING:** Indicates danger or hazardous procedure that could lead to serious or mortal injury if the warning is neglected.



**CAUTION:** Indicates danger or hazardous procedure that could lead to machine or property damage if the warning is neglected.

### Important rules for your safety



**The machine must not be modified without the prior consent of the manufacturer. Use only original parts. Use only the accessories recommended by Dynapac. If modifications not approved by Dynapac are carried out, these could result in serious injury to yourself or other personnel.**

- These recommendations are based on international safety standards.
- You must also observe any local safety regulations which may be in force. Read all instructions carefully before operating the machine. Keep the instructions in a safe place.
- Signs and stickers giving important information about safety and maintenance are supplied with every machine. Make sure that they are always legible. The ordering numbers for new stickers can be found in the spare parts list.
- Use of the machine and its accessories is restricted to the applications specified in the product literature.
- For reasons of product safety, the machine must not be modified in any way.
- Replace damaged parts immediately. Replace all wear parts in good time.

### Be alert

Always pay attention to what you are doing, and use your common sense. Do not use the machine if you are tired or under the influence of drugs, alcohol or other substances which can affect your vision, reaction ability or judgement.

### Safety equipment



**Long exposure to loud noise without ear protectors can cause permanent damage to hearing.**



**Long exposure to vibrations can damage the hands, fingers and wrists. Do not use the machine if you experience discomfort, cramp or pain. Consult a doctor before resuming work with the machine.**

Always use approved safety equipment. The operator, and people in the immediate vicinity of the working area, must wear:

- Safety helmet
- Safety goggles
- Ear protectors
- Dust mask in dusty environments
- High-visibility clothing
- Protective gloves
- Protective shoes

Avoid wearing loosely fitting clothing that might get caught in the machine. If you have long hair, cover it with a hair net. Vibrations from hand-held machines are transmitted into the hands via the handles of the machine. Dynapac's machines are equipped with vibration-relieved handles. However, depending on operation, the course and the duration of exposure, the recommended limit values for hand and arm vibration may be exceeded. Take suitable measures as necessary—wear protective gloves, do not vibrate already compacted material, etc. Be alert to acoustic signals from other machines in the working area.

### Working area

Do not use the machine near flammable material or in explosive environments. Sparks can be emitted from the exhaust pipe, and these can ignite flammable material. When you take a pause or have finished working with the machine, do not park it on or near flammable materials. The exhaust pipe can get very hot during operation, and can cause certain material to ignite. Make sure that there are no other personnel inside the working area while the machine is in use. Keep the worksite clean and free of extraneous objects. Store the machine in a safe place, out of unauthorized's reach, preferably in a locked container.

## SAFETY INSTRUCTIONS (FOR ALL LIGHT PRODUCTS)

### Filling with fuel (Gasoline/diesel)



**Petrol has an extremely low flash-point and can be explosive in certain situations. Do not smoke. Make sure that worksite ventilation is good.**

Keep away from all hot or spark-generating objects when handling fuel. Wait until the machine has cooled before filling the tank. Fill the tank at least 3 metres away from where you intend to use the machine. Avoid spilling petrol, diesel or oil on the ground. Protect your hands from contact with petrol, diesel and oil.

Open the tank cap slowly to release any overpressure that might exist in the tank. Do not overfill the tank. Inspect the machine for fuel leakage regularly.

Do not use a machine that is leaking fuel.

### Starting the machine



**Before starting read instruction book and make your self familiar with the machine and make sure that:**

- All handles are free from grease, oil and dirt.
- The machine does not show any obvious faults.
- All protective devices are securely fastened in their places.
- All control levers in "neutral" position.

Start the machine according to the instruction-book.

### Operation



**Keep your feet well clear of the machine.**



**Do not operate the machine in poorly ventilated spaces. There is a risk of carbon monoxide poisoning.**

Use the machine only for the purpose for which it is intended. Make sure you know how to stop the machine quickly in the event of an emergency situation.



**Always take extreme care when driving the machine on slopes. Always drive straight up and down on slopes. Do not exceed the maximum gradability of the machine according to the instruction book. Stay clear of machine when operating on a slope or in a trench.**

Do not touch the engine, the exhaust pipe or the eccentric element of the machine. They get very hot during operation and can cause burn injuries.

Do not touch V-belts or rotating parts during operation.

### Parking

Park the machine on ground as level and firm as possible. Before leaving machine:

- Apply the parking brake.
- Shut off the engine and pull the ignition key out.

### Loading/Unloading



**Never remain under or in the immediate vicinity of the machine when it is lifted by a crane. Only use marked lifting points. Always make sure that all lifting devices are dimensioned for the weight of the products.**

### Maintenance

Maintenance work must only be carried out by skilled personnel. Keep unauthorized persons away from the machine. Do not carry out maintenance work while the machine is moving or the engine is running.

## **SAFETY INSTRUCTIONS (FOR ALL LIGHT PRODUCTS)**

### **Working with the hydraulic system**

Regular maintenance of the hydraulic system is important. Minor damage or a split hose or coupling can have devastating consequences. Bear in mind that the hydraulic hoses are made of rubber and can deteriorate with age, which can result in splitting. In all cases of uncertainty with regard to durability or wear, replace the hoses with new original hoses from Dynapac.

### **Working with battery**

The battery contains poisonous and corrosive sulphuric acid. Wear protective glasses and avoid getting acid on your skin, clothes or on the machines. If you get sulphuric acid on yourself, rinse the skin with water. If you get acid in your eyes, rinse them with water for at least 15 minutes and seek immediate medical treatment. The gas that is emitted by the battery is explosive. When fitting or replacing a battery, always take care so that you do not short-circuit the battery poles.

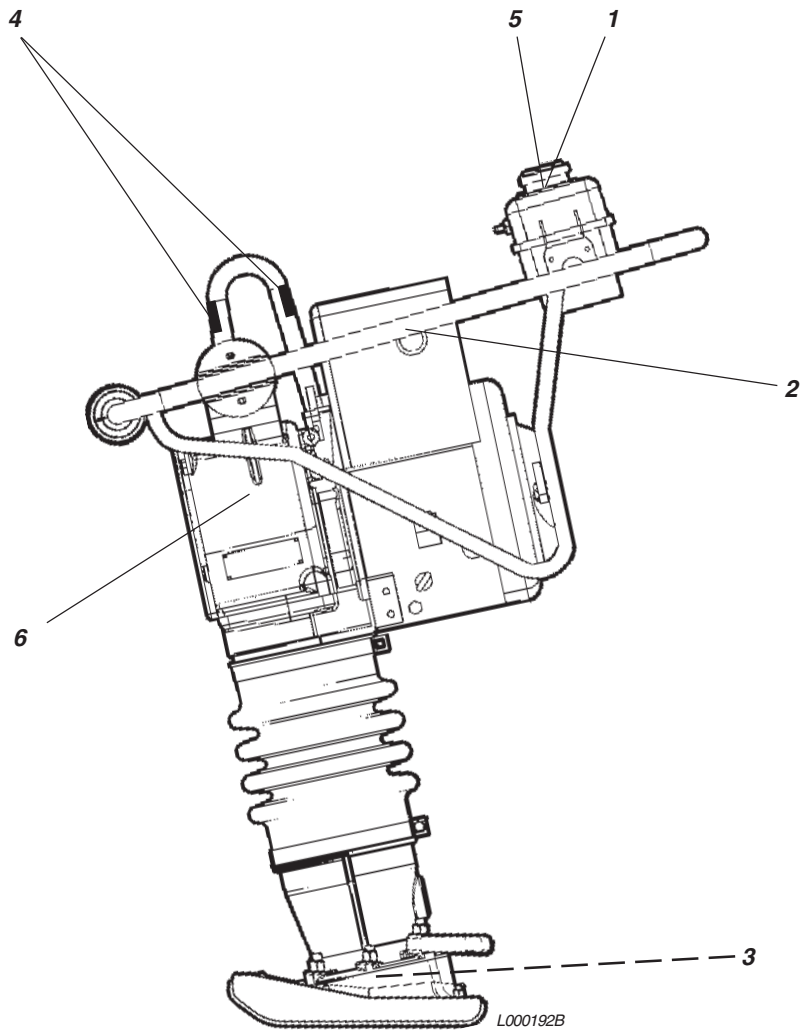
### **Repair**

Never use a machine that is damaged. Qualified repair work requires trained personnel, please contact your nearest authorized workshop.

### **Extinguishing fires**

If there is a fire in or on the machine, it is best to use an ABE-class fire extinguisher. However, a BE-class CO<sub>2</sub> extinguisher is also suitable.

# SAFETY DECALS, LOCATION/DESCRIPTION





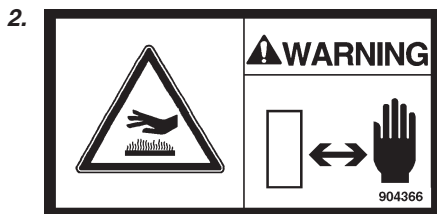
## SAFETY DECALS, LOCATION/DESCRIPTION



The operator is urgently requested to read the safety manual, and the operation and maintenance instructions before using the machine.

Fuel

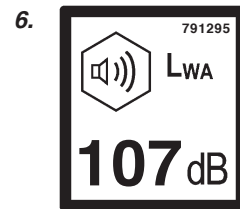
Use ear protectors



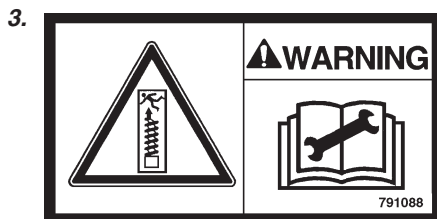
Warning: hot surfaces in the exhaust system. Do not touch the exhaust silencer



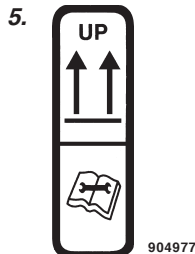
Lifting point



Guaranteed Sound Power level



Compressed spring assembly. Read the service manual.



When the machine needs to be laid down for storage or transportation, be sure that it is laid horizontal with front down. It may not differ more than 40 mm (1.6 in) from one side to the other. Laying the machine in other direction may cause a fuel spill, which may lead to fire. It may also cause the oil in the crankcase to enter the combustion chamber and/or the air cleaner causing starting difficulties.

## FUEL AND LUBRICANTS



### ENGINE OIL

Use SAE 15W / 40:  
0,9 lit. (0.9 qts) Shell Universal Engine Oil



### RAMMING CYLINDER OIL

Use SAE 15W / 40:  
0,9 lit. (0.9 qts) Shell Universal Engine Oil



### FUEL

Use diesel oil which satisfy EN 590 or DIN 51601  
3,0 lit. (3.2 qts)

WARNING



**Stop the engine before refilling the fuel tank. Never refuel near an open flame or sparks which could start a fire. Don't smoke. Use pure fuel and clean filling equipment. Take care not to spill fuel.**

### Service parts P/N

#### Hatz 1B20

Engine air filter element	93 81 50
Engine oil filter	93 70 01
Engine fuelfilter	93 78 73

## TECHNICAL DATA

	LT 800 (11")	LT 800 (13")
<b>Weight</b>		
Operating weight, kg (lbs)	84 (185)	85 (187)
<b>Compaction data</b>		
Vibr. frequency, Hz	12	12
Vibr. frequency, vpm	720	720
Length of stroke, mm (in)	65-75 (2.5-2.9)	65-75 (2.5-2.9)
<b>Operating data</b>		
Speed of travel, m/min (feet/min)	13-16 (43-52)	13-16 (43-52)
<b>Volumes</b>		
Fuel tank, lit. (qts)	3,0 (3.2)	3,0 (3.2)
Crank case, lit. (qts)	0,9 (0.9)	0,9 (0.9)
Excentercylinder, lit. (qts)	0,9 (0.9)	0,9 (0.9)
Fuel consumption, l/h (qts/h)	0,7 (0.74)	0,7 (0.74)
<b>Engine</b>		
Model	Hatz 1B20	Hatz 1B20
	Manual start	Manual start
Output, kW (hp)	3 (4.0)	3 (4.0)
Engine speed, vpm	3050	3050

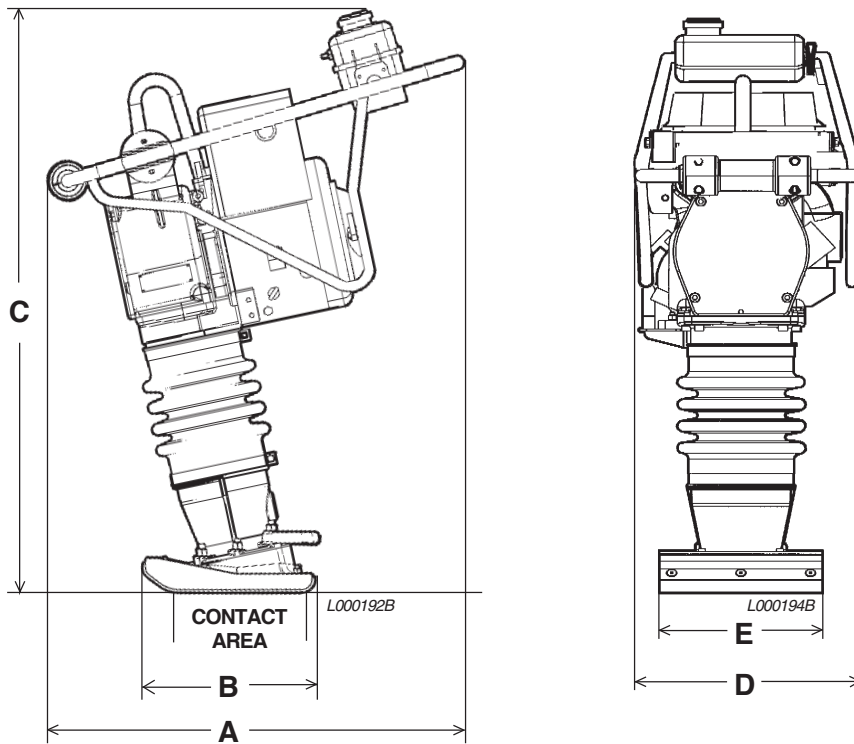
## TECHNICAL DATA

### Noise levels

The below noise and vibration levels have been determined in accordance with the operating cycle on a macadam base described in EU Directive 2000/14/EC

Measured sound power level, $L_{wA}$ dB (A)	106
Guaranteed sound power level, $L_{wA}$ dB (A)	107
Sound pressure level at operator's ear (EN 500-4), $L_{pA}$ dB (A)	96
Hand and arm vibrations (EN500-4), $a_{hv}$ m/s <sup>2</sup>	
Standard handle	11,9
Low vibration handle	-
Hand and arm vibrations, permitted working hours per day, (calculated on action value of 2.5 m/s <sup>2</sup> as per 2002/44/EC),	
Standard handle	0,2
Low vibration handle	-
Values may differ from those above depending on operating conditions.	
Uncertainty factor for gravel bed $K_{wa}$ dB(A)	1,5 - 2,5
$K_{pa}$ dB(A)	2,5 - 3,5

## TECHNICAL DATA - DIMENSIONS



	<b>LT 800 (11")</b>	<b>LT 800 (13")</b>
<b>A</b> mm (inch)	810 (31.9)	810 (31.9)
<b>B</b> mm (inch)	330 (13.0)	330 (13.0)
<b>C</b> mm (inch)	1074 (42.3)	1074 (42.3)
<b>D</b> mm (inch)	422 (16.6)	422 (16.6)
<b>E</b> mm (inch)	280 (11.0)	330 (13.0)
<b>Contact area,</b> m <sup>2</sup> (sq feet)	0,065 (0.70)	0,075 (0.81)

## THE MACHINE'S RANGE OF APPLICATIONS

Dynapac LT vibratory rammers are designed for the compaction of fill, including also fill that contains clay. Applications include house foundations, and bearing courses for roads and parking areas etc.

It can be used to advantage in pipe trenches and for compacting round posts etc.

LT rammers must only be used in well-ventilated areas, as is the case for all combustion engine machines.

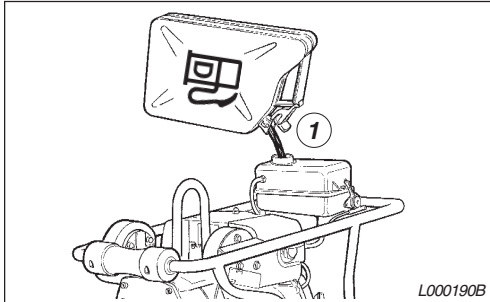
When operating LT rammers follow the instructions in the manual, and do not sit or hang from the machine when it is working.

This will interfere with the machine's functionality and result in inferior compaction, and may also damage the machine.

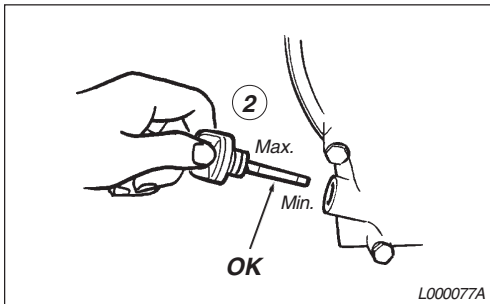
Do not lift the machine in any way when it is in operation, and do not operate on steeper slopes than what is recommended in this manual.

## OPERATION

### Before start

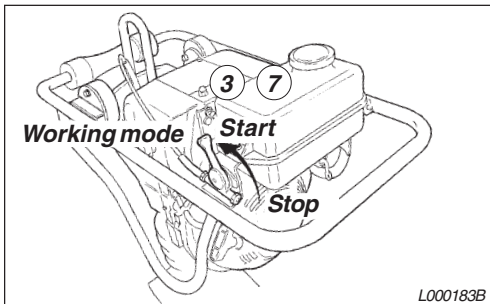


1. Fill the fuel tank.  
Tank volume 3,0 lit. (3.2 qts)

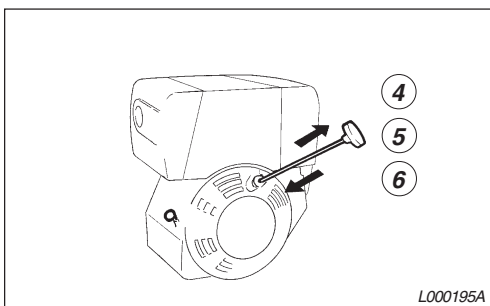


2. Check the engine oil level.  
Oil volume 0,9 lit. (0.9 qts)

### Starting the engine



3. Set speed control lever to max. START position.



4. Pull the starting cable out by the handle until you feel a slight resistance. Let the cable run back; in this way the entire length of the starting cable can be used to start the engine.
5. Grip the handle with both hands.
6. Commence pulling the starting cable vigorously and at an increasing speed (do not jerk it violently) until the engine starts.

#### CAUTION

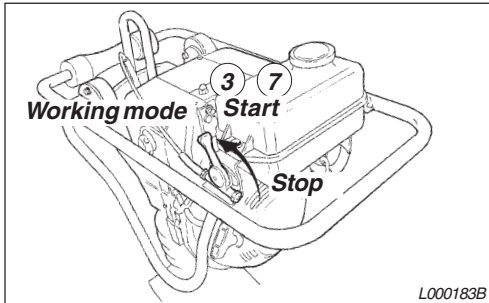


If after several attempts of starting the exhaust begins to emit white smoke, move the speed control lever to the stop position and pull the starting cable out slowly 5 times. Repeat the starting procedure.

7. After the engine starts, set the speed lever to the idle position and warm it up without load for a few minutes.

# OPERATION

## Operating

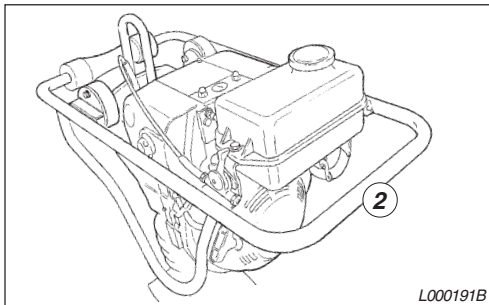


1. Move the throttle to the working mode and the tamper will begin to move.

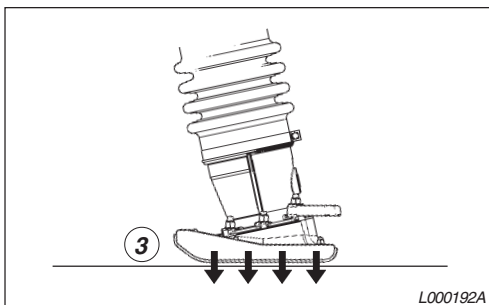
CAUTION



During operation, the engine must always work at full throttle (working mode).



2. Guide the tamper with guide handle.



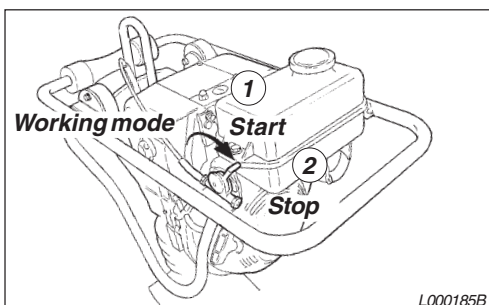
3. Take care that the shoe hits parallel to the ground.
4. Do not fight or overpower the machine.

WARNING



**Never work on hard surfaces (solid rock, hardened concrete or such). When working in trenches always make sure that they are wide enough. When working in a narrow trench, if the ramming shoe should get caught between the walls of the trench, the rammer may mis-strike and can be severely damaged. The ramming shoe may especially be damaged severely. Make certain that the rammer is steered only by using the hand grip. It should only be pushed. The rammer must not be pressed into the materials being compacted. Excessive pressure to the operation handle will lead to the unsatisfactory compaction due to the fact that the jumping action is hindered. If the machine falls over while working, switch off the engine before raising it.**

## Stopping the engine

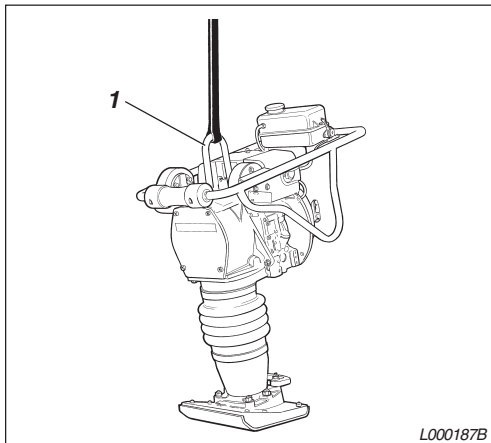


1. Throttle in idle position. Let engine run a few minutes.
2. Throttle in stop position.



# INSTRUCTIONS FOR LIFTING

## Transport and lifting



WARNING



**Keep well clear of the hoisted machine.**

CAUTION



Use only the frame lifting hook (1) for lifting the machine.

CAUTION



All lifting devices must be dimensioned in order to fulfil all regulations. Before lifting check that ramming shoe is correctly attached and not damaged.

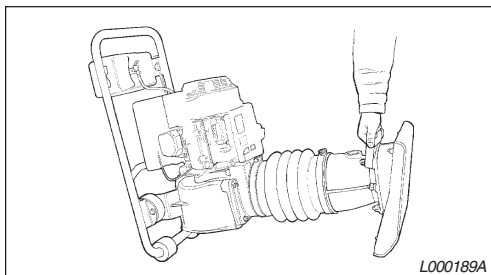
The weight is noted on the machine data plate; see the "Machine data plate" section.

CAUTION



Lay the machine down when switched off and not in use.

## Transport handle



WARNING



**Always lash the machine securely for all transportation.**

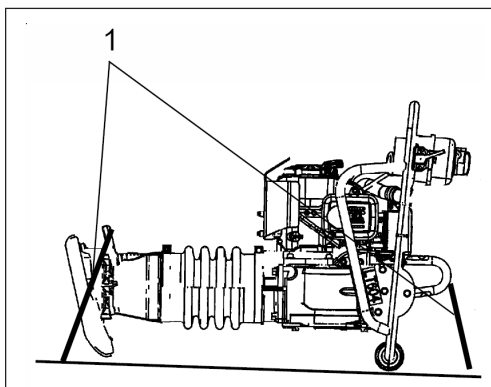
Secure the machine in the lifting hook and the lower lifting handle.

For moving short distances, the machine can be tilted forward so that it rests on the plastic wheels on the handle. Lift the transport handle and roll the machine forward or backward.

WARNING

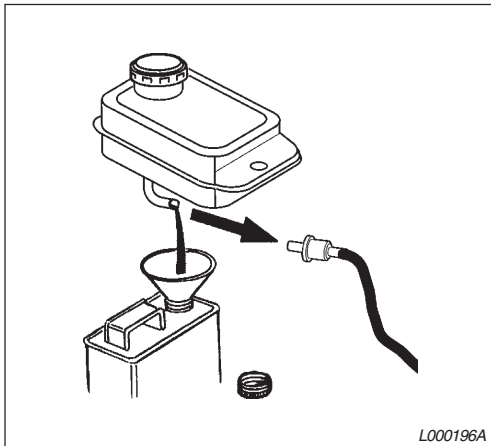



**Keep your feet clear of the machine.**



*Fig. Machine ready for transport  
1. Straps.*

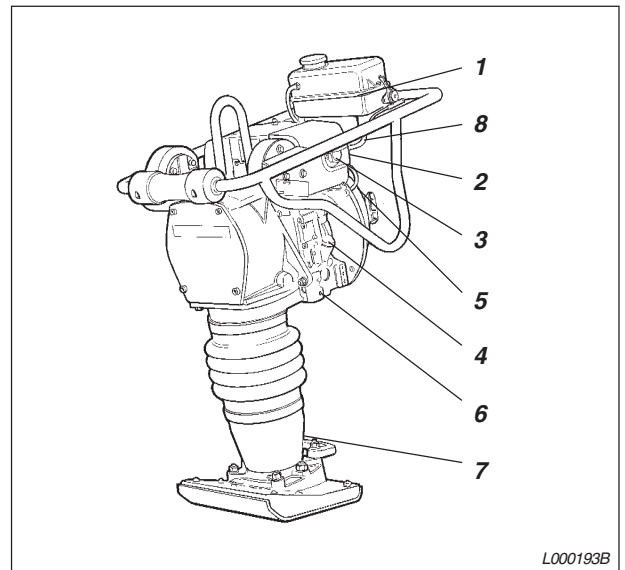
## LONG TIME STORAGE



1. Clean the machinery. Remove mud and dirt from the ramming shoe.
2. Clean the air cleaner.
3.  Drain all fuel from the fuel tank and carburetor. Collect the contents in a receptacle and dispose of it properly.
4. Pull the starter grip lightly until pressure is felt.
5. Clean up oil and dust accumulation on rubber parts.
6. Apply a light coat of oil on the ramming shoe to prevent rust formation.
7. Put the cover entirely on the machine, and store the machine in dry, dust-free area.

## MAINTENANCE – SERVICE POINTS

1. Fuel tank
2. Fuel filter
3. Air filter
4. Oil dipstick
5. Engine oil filter
6. Oil drain plug
7. Rammer oil sightglass
8. Engine throttle wire




L000193B

Fig. 1

### Every 10 hours of operation (daily)

Item in fig.1	Maintenance	see page	Comments
1	Check and replenish fuel	15	
4	Check and replenish engine oil	21	
	Check for oil leakage		
	Check/retighten bolted joints (rammer foot)	21	
3	Check air cleaner elements	21	
7	Check ramming system lubrication with sight glass	21	

### The first 20 hours of operation

Item in fig.1	Maintenance	see page	Comments
6	Change engine oil	22	
5	Clean / replace oil filter		See engine manual
3	Clean / replace air cleaner elements		See engine manual
	Check and adjust the engine valve clearance		See engine manual
7	Change oil in the eccentric element after the first 20 hours of operation.		
	 Change oil in the eccentric element after the <b>first</b> 20 hours of operation.		

## MAINTENANCE – SERVICE POINTS

### Every 100 hours of operation

Item in fig.1	Maintenance	see page	Comments
3	Clean / replace air cleaner elements	22	See engine manual
8	Lubricate the engine throttle wire and all control	22	

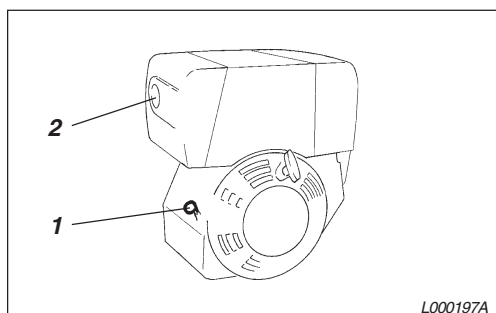
### Every 300 hours of operation

Item in fig.1	Maintenance	see page	Comments
6	Change engine oil	23	See engine manual
5	Clean / replace oil filter		
	Check fuel injection pump		See engine manual
	Check fuel injection nozzle		See engine manual
	Adjust valve head clearance for intake and exhaust valves		See engine manual
2	Change fuel filter and clean the fuel tank		See engine manual

### Every 1000 hours of operation

Item in fig.1	Maintenance	see page	Comments
	Lap intake and exhaust valves	23	See engine manual
	Replace piston rings		See engine manual
7	Change ramming system oil		

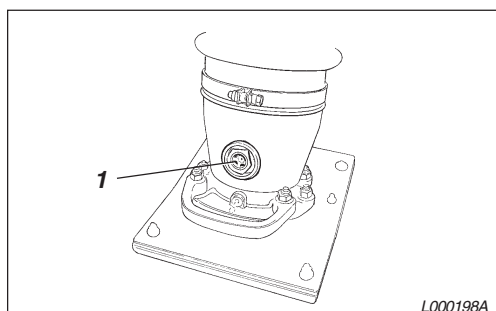
## MAINTENANCE – EVERY 10 HOURS OF OPERATION



1. Oil dipstick
2. Air cleaner

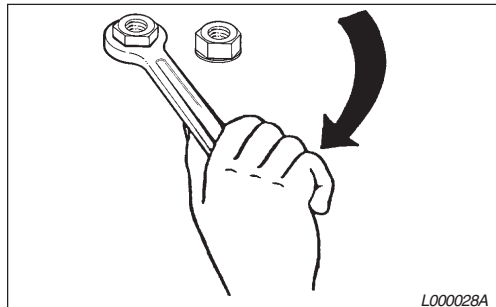
1. Check oil level (1) in the engine.
2. Check air cleaner (2).

We recommend reading the detailed engine instructions supplied with the machine.

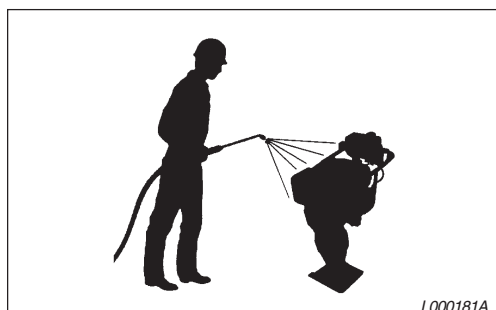


1. Sight glass

3. Check ramming system lubrication with sight glass (1). The level should be at the middle of the sight glass.



4. Check and, where necessary, tighten screws and nuts.

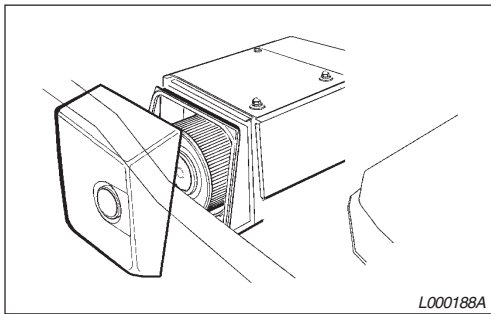


5. Keep machine clean.

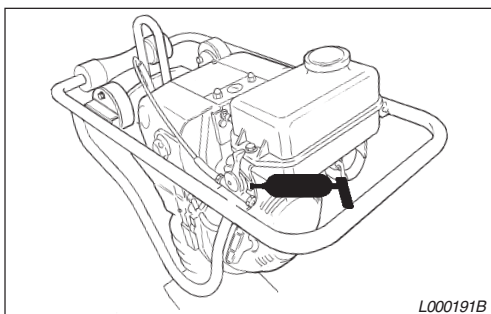


Never aim a water jet directly at the cap of the fuel tank. This is especially important when using a high-pressure jet. Put a plastic bag over the filler cap of the fuel tank and secure with a rubber band.

## MAINTENANCE – EVERY 100 HOURS OF OPERATION

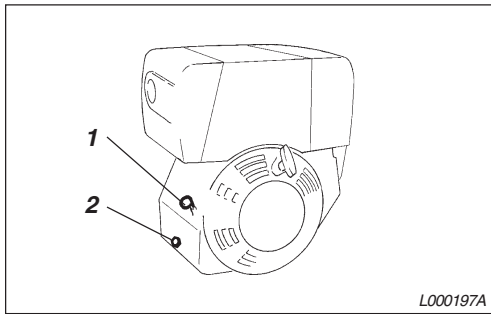


1. Replace air cleaner element (see engine manual).



2. Lubricate controls and the engine throttle wire.  
Recommended lubricant: Shell Alvania EP2.

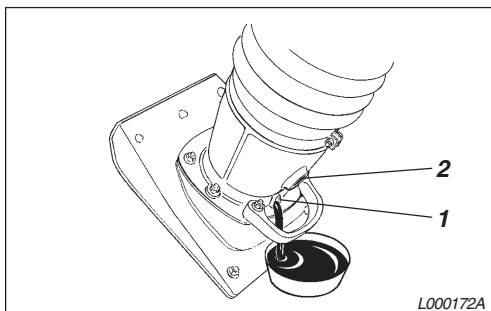
## MAINTENANCE – EVERY 300 HOURS OF OPERATION



1. Oil dipstick
2. Oil drain plug

1. Change oil (first change after 20 hours, together with engine oil filter).
2. Replace oil filter (see engine manual).
3. Replace fuel filter and clean the fuel tank (see engine manual).

## MAINTENANCE – EVERY 1000 HOURS OF OPERATION



1. Oil drain plug
2. Sight glass

1. Lap intake and exhaust valves (See engine manual).
2. Replace piston rings (See engine manual).
3. Change oil in the eccentric system. Screw out the drain plug (1) and empty the oil into a receptacle.



Save the oil in a can and dispose of it properly.

4. Refit the plug tight, making sure that the rubber seal is undamaged.
5. Remove the sight glass (2) and fill with fresh oil as follows. Refit the sight glass and tighten firmly. The oil level should be at the middle of the sight glass.

## TROUBLESHOOTING

TROUBLE	POSSIBLE CAUSE	REMEDY
<b>Engine stalls or does not start</b>	Insufficient fuel	Fill with gasoline
<b>Engine does not accelerate, is hard to start or runs erratically</b>	Air filter is dirty	Clean/replace the air filter
	Motor oil low	Fill with motor oil
	Silencer is clogged	Clean silencer
	Gasket is leaking	Change gasket
<b>Engine overheats</b>	Motor oil low	Refill with lube oil
	Restricted air flow	Clean/replace the air filter
<b>Engine runs, but rammer does not tamp</b>	Clutch damaged	Repair or replace clutch
	Broken connection rod or crankgear	Replace
	Broken pinion or clutch drum	Replace
<b>Engine runs, but rammer erratic</b>	Clutch damaged	Repair or replace clutch
	Oil or grease on clutch	Dismantle and remove oil/grease
	Soil buildup on ramming shoe	Clean shoe
	Broken or worn springs	Replace springs





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