

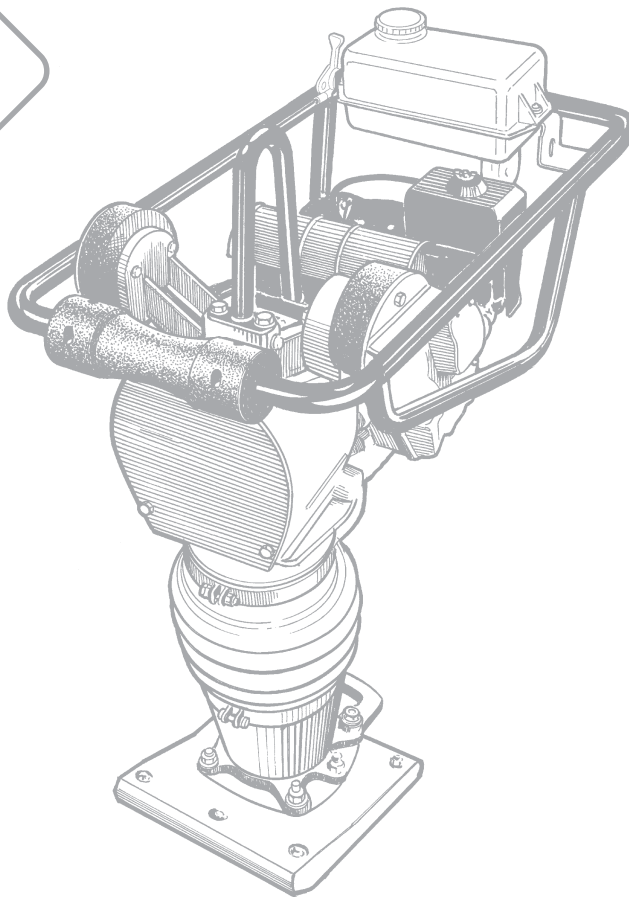
# **DYNAPAC**

## **Vibratory Tamper LT600/700**

### **Operation & Maintenance ILT600EN2, January 2004**

**Petrol Engine:**  
**Honda GX100 (LT600)**  
**Honda GX120 (LT700)**

**These instructions apply from:**  
**LT600 PIN (S/N) \*76000001\***  
**LT700 PIN (S/N) \*77000001\***



*Dynapac's LT600/700 tampers are suitable for compacting soil in trenches, around poles and in restricted spaces. It has been designed to comply with contractors' highest demands in terms of efficiency, simplicity and operators comfort.*

*The LT tampers are designed for operation in well ventilated spaces, as all combustion engine machines.*

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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.**

## 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.

CAUTION

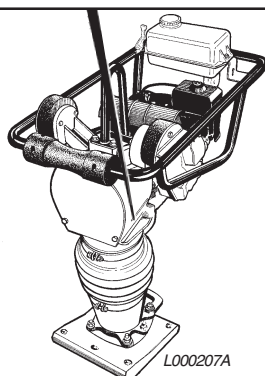


There are additional instructions relating to the engine, for which the manufacturer's instructions are detailed in the engine manual.

## MACHINE PLATE

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

<b>DYNAPAC</b>			
<b>Metso Dynapac AB</b>			
<b>Box 504, SE-371 23 Karlskrona Sweden</b>			
Type	Operating mass kg	Rated Power kW	Year of Mfg
Product Identification Number			
			358090SE



L000207A

.....  
Engine Model

.....  
Engine Number

## SAFETY INSTRUCTIONS (FOR ALL LIGHT PRODUCTS)

### Symbols

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

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.

### Important rules for your safety

WARNING



**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 effect your vision, reaction ability or judgement.

### Safety equipment

WARNING



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

WARNING



**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. Depending on operation, the course and duration of exposure, the recommended limit values for hand and arm vibration can be exceeded. Take suitable measures as required, eg, wear protective gloves, and do not vibrate already compacted material.

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 gets 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.

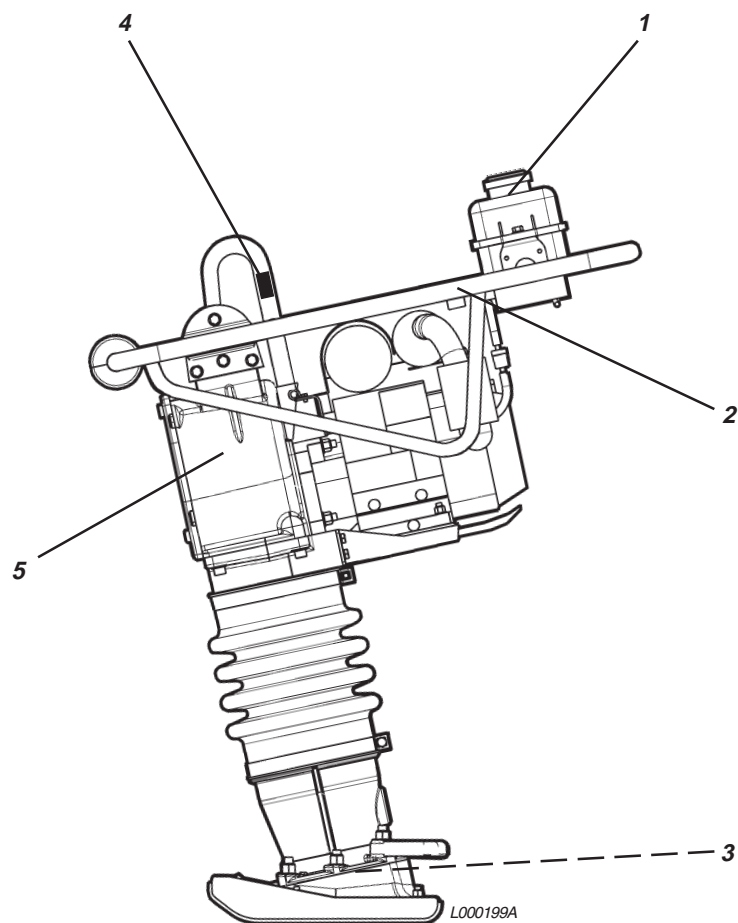
### **Repair**

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



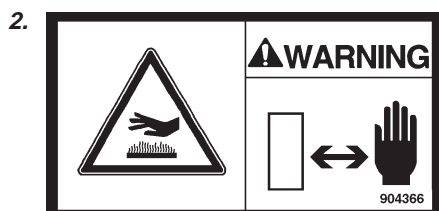
## SAFETY DECALS, LOCATION/DESCRIPTION



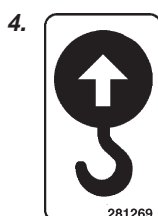
The operator is urgently requested to read the safety manual, and the operation and maintenance instructions before using the machine.

Fuel

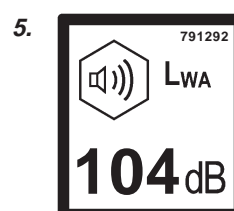
Use ear protectors



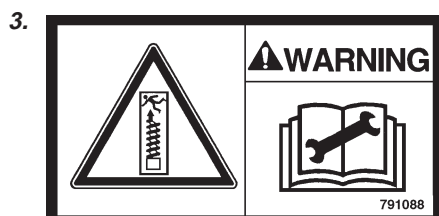
Warning: hot surfaces in the exhaust system. Do not touch the exhaust silencer



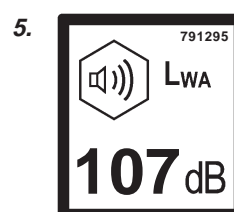
Lifting point



Guaranteed Sound Power level (LT600)



Compressed spring assembly. Read the service manual.



Guaranteed Sound Power level (LT700)



Turn off the fuel tap before laying the machine on its side, for example, for storage or transportation. When transporting the machine in a horizontal position, it is essential that no fuel leaks out. If necessary, empty the fuel tank prior to transportation.



## FUEL AND LUBRICANTS



### ENGINE OIL

Use SAE 15W / 40:  
0,4 lit. (0.4 qts) Shell Universal Engine Oil TX15W-40 or equivalent



### RAMMING CYLINDER OIL

Use SAE 10W / 30:  
0,9 lit. (0.9 qts) Shell Universal Engine Oil TX15W-40 or equivalent



### FUEL

Use normal quality gasoline (unleaded):  
2,5 lit. (2.6 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.**

### Spare parts for service (spare part number)

Air filter for engine  
Fuel filter for engine  
Spark plug

### LT600 Honda GX100

93 89 32  
93 54 38  
93 89 34

### LT700 Honda GX120

93 62 64  
93 54 38  
92 48 42

## TECHNICAL DATA

	LT600	LT700
<b>Weight</b>		
Operating weight, kg (lbs)	64/65 (141/143.3)	74 (163.2)
<b>Compaction data</b>		
Vibr. frequency, Hz	12	12
Vibr. frequency, vpm	720	720
Length of stroke, mm (in)	65-75 (2.5-3.0)	70-90 (2.8-3.5)
Impact force (kN)	15	19
<b>Operating data</b>		
Speed of travel, m/min (feet/min)	15-18 (49-59)	15-18 (49-59)
<b>Volumes</b>		
Fuel tank, lit. (qts)	2,5 (2.6)	2,5 (2.6)
Engine, lit. (qts)	0,3 (0.3)	0,4 (0.4)
Ramming cylinder, lit. (qts)	0,9 (0.9)	0,9 (0.9)
Fuel consumption, l/h (qts/h)	0,69 (0.73)	0,87 (0.92)
<b>Engine</b>		
Model	Honda GX100	Honda GX120
	Manual start	Manual start
Output, kW (hp)	2,2 (3.0)	2,9 (3.9)
Engine speed, vpm	3800-3900	3600-3700
Idling	1600-1900	1400-1600

### Noise and Vibrations

The following sound levels and vibration levels are determined based on the operating cycle on a macadam course as described by EU directive 2000/14/EC.

Guaranteed acoustic power level

$L_{WA}$ dB (A)	104	107
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Sound-pressure level at the operator's ear (ISO 6396)

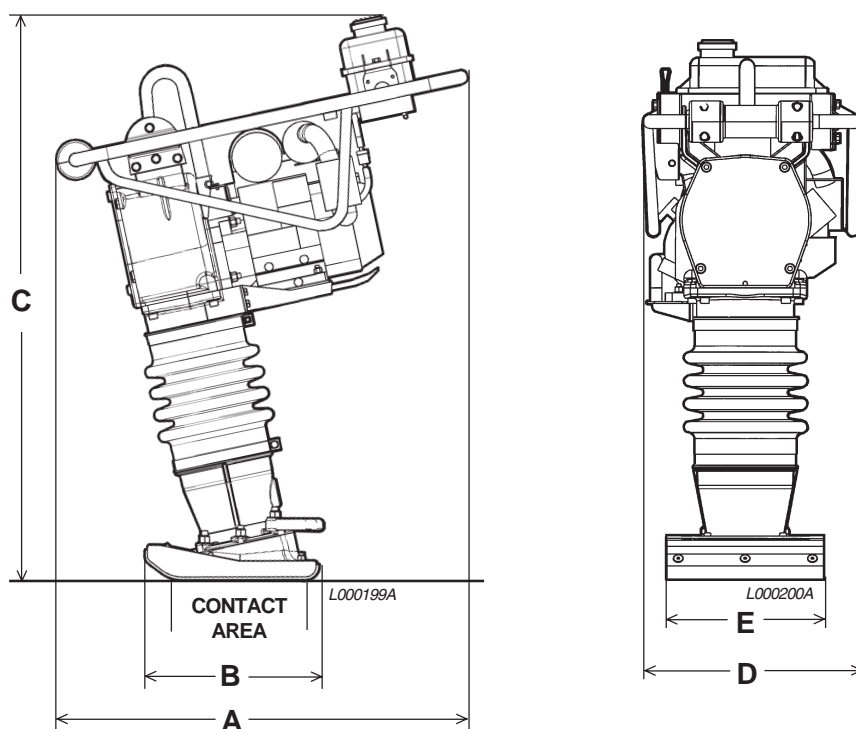
$L_{pA}$ dB (A)	91	96
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Hand and arm vibration (ISO 5349-1)

$a_{hv}$ m/s <sup>2</sup>	9	12
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These values may differ during operation due to the specific operational conditions.

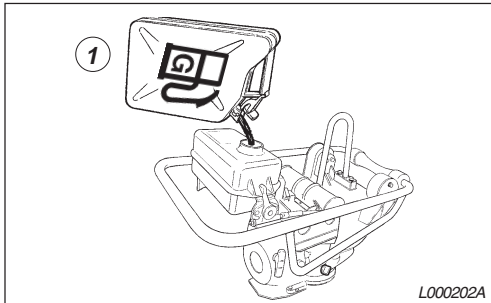
## TECHNICAL DATA – DIMENSIONS



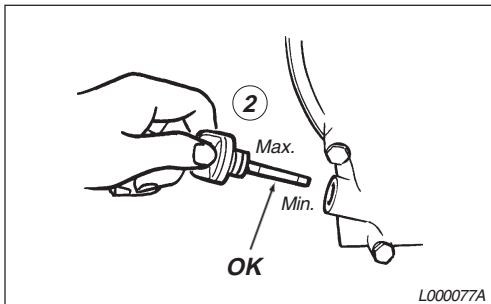
	LT600	LT700
<b>A</b> mm (in)	810 (31.9)	810 (31.9)
<b>B</b> mm (in)	330 (13)	330 (13)
<b>C</b> mm (in)	1074 (42.3)	1074 (42.3)
<b>D</b> mm (in)	422 (16.6)	422 (16.6)
<b>E</b> mm (in)	230 (9.1)	280 (11)
<b>Contact area, m<sup>2</sup> (sq feet)</b>	0,053 (0.57)	0,065 (0.70)

## OPERATION

### Before start

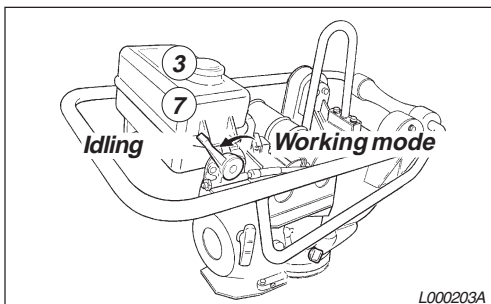


1. Fill the fuel tank.  
Tankvolume 2,5 lit. (2.6 qts)

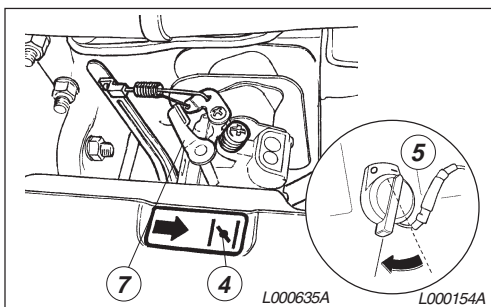


2. Check the oil level in the engine while the tamper is upright.


### Starting the engine

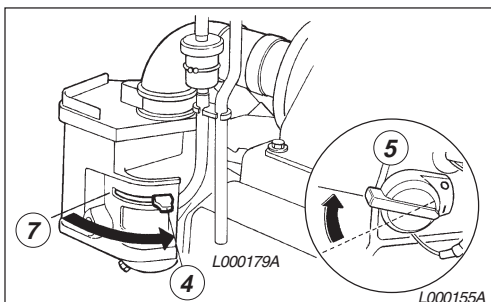


3. Set the speed control to idling mode.




#### LT600 (Honda GX100)

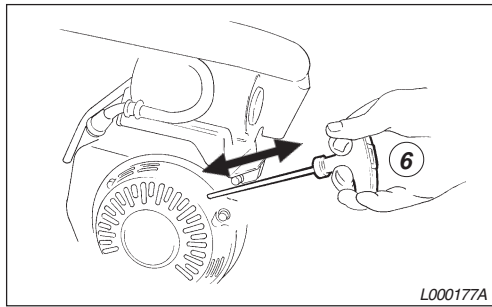
4. Open the Fuel Cock and move the choke lever to the CLOSED  position. The choke may not be needed if the engine is warm or the air temperature is high.
5. Set the engine switch to start mode, **I**.




#### LT700 (Honda GX120)

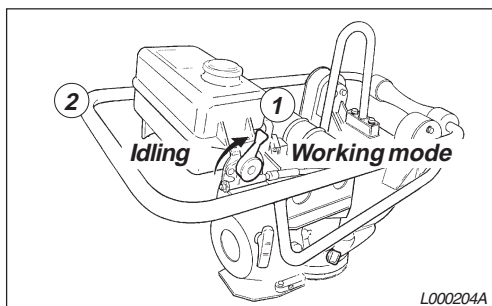
4. Open the Fuel Cock and move the choke lever to the CLOSED  position. The choke may not be needed if the engine is warm or the air temperature is high.
5. Set the engine switch to start mode, **I**.

## OPERATION



6. Pull slowly on the magnapull starter handle (4) until you feel it engage, then let the handle return a short distance and pull sharply to start the engine. Do not allow the starter grip to snap back against the engine. Return it gently to prevent damages to the starter.
7. When the Choke Lever has been moved to CLOSED  position at the time of starting, move it to OPEN position. Let the engine run without load at idle for a few minutes for warm up.

### Operating



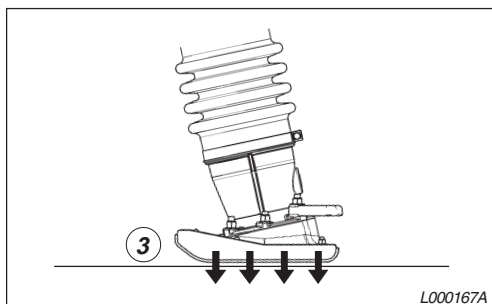
1. Move the throttle to the working mode and the tamper will begin to move.

#### 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.

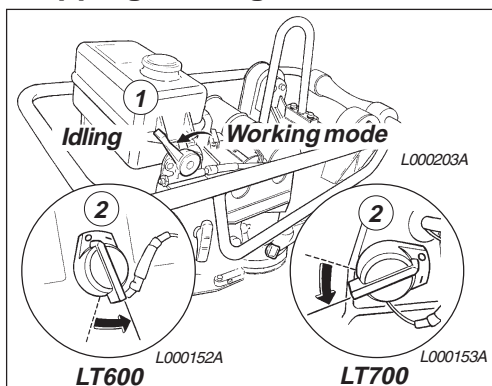
4. Do not fight or overpower the machine.

#### 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, it 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.**

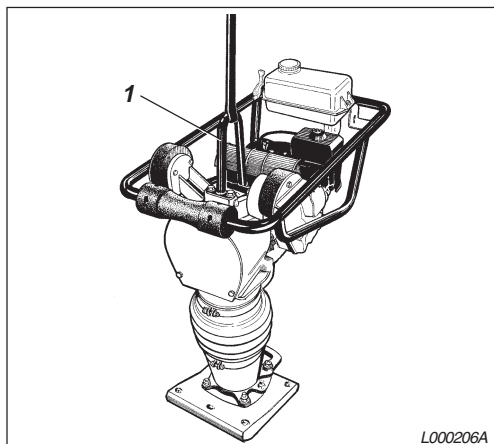
### Stopping the engine



1. Set the speed control to idling mode. Allow the engine to run for a few minutes at idle speed to cool down.
2. Set the engine switch to stop mode, **O**, to stop the engine.

## 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 fulfill all regulations. Before lifting check that ramming shoe is correctly attached and not damaged. Before lifting, make sure that the rubber elements between the handle bracket and the machine are intact.

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.

WARNING



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

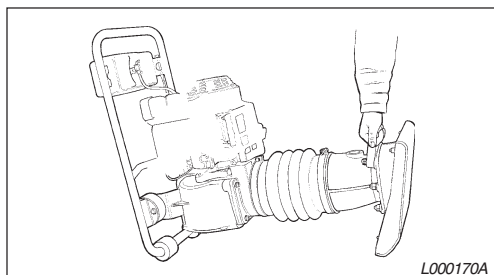
For moving short distances, the machine can be tilted forward so that it rests on the plastic wheels on the handle. Lift the transport handle and roll the machine forward or backward.

WARNING

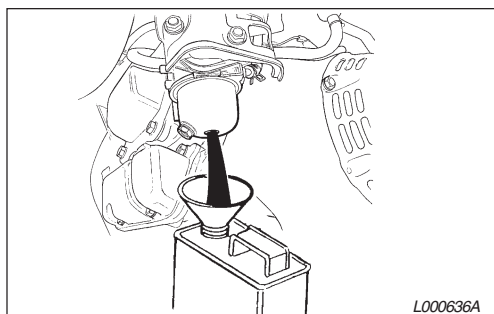



**Keep your feet clear of the machine.**

### Transport handle



## 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. Oil drain plug
6. Rammer oil sightglass
7. Eccentric system
8. Engine throttle wire

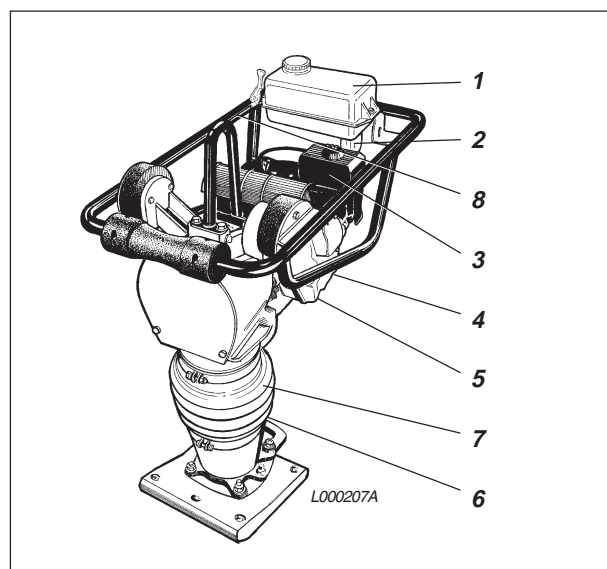



Fig. 1

### Every 10 hours of operation

Item in fig.1	Maintenance	see page	Comments
1	Check and replenish fuel	12	
4	Check and replenish engine oil	17	
	Check for oil leakage		
	Check/retighten bolted joints (tamper foot).	17	
3	Check air cleaner elements	17	
6	Check ramming system lubrication with sight glass	17	

### The first 20 hours of operation

Item in fig.1	Maintenance	see page	Comments
5	Change engine oil	18	
3	Clean / replace air cleaner elements		See engine manual
8	Check the engine revs.	19, 20	
7	Change ramming system oil	21	
	Change the ramming system oil after the <b>first</b> 20 hours of operation.		

## MAINTENANCE – SERVICE POINTS

### Every 100 hours of operation

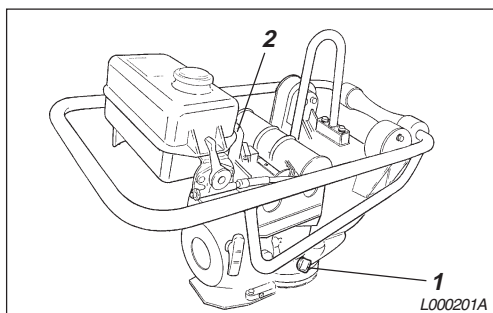
Item in fig.1	Maintenance	see page	Comments
5	Change engine oil	18	See engine manual
3	Clean / replace air cleaner elements	18	
2	Check and clean the spark plug	18	
8	Check the engine revs.	19, 20	

### Every 500 hours of operation

Item in fig.1	Maintenance	see page	Comments
2	Change fuel filter and clean the fuel tank	21	See engine manual
7	Change ramming system oil		



## MAINTENANCE – EVERY 10 HOURS OF OPERATION

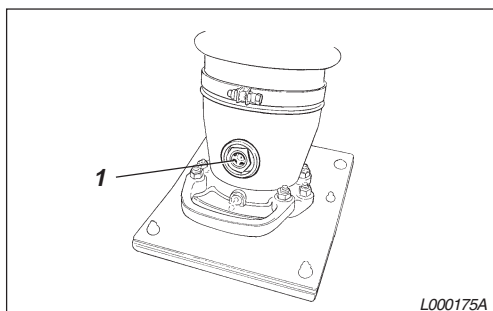


- 1. Oil dipstick
- 2. Air cleaner

1. Check oil level (1) in the engine.

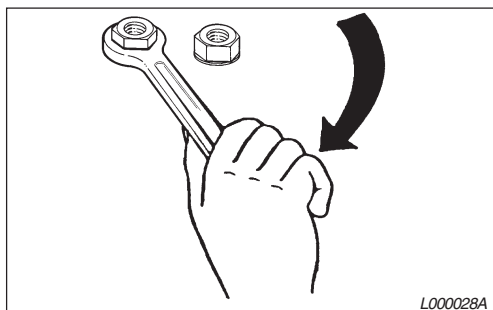
2. Check air cleaner (2).

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



- 1. Sight glass

3. Check oil level in the tamper leg through the sight glass (1). The level should be at the middle of the sight glass.

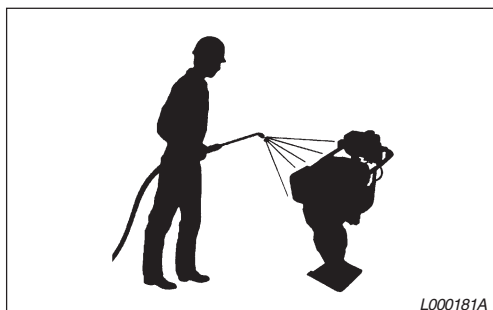


4. Check and, where necessary, tighten screws and nuts.

CAUTION



Take special care with bolted joints on the tamper foot.



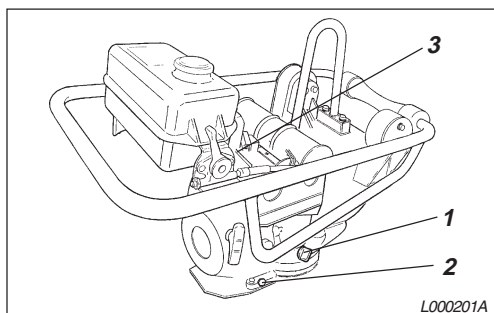
5. Keep machine clean. The machine shall always be upright when washed.

CAUTION



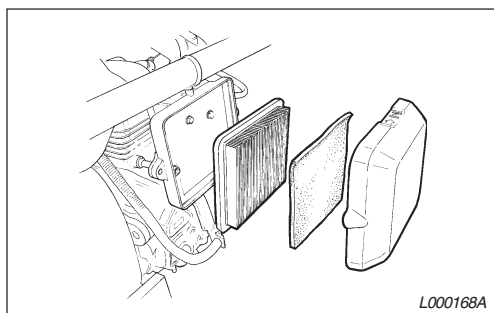
Never aim a water jet directly at the cap of the fuel tank. This is especially important when using a high-pressure jet. Put a plastic bag over the filler cap of the fuel tank and secure with a rubber band.

## MAINTENANCE – EVERY 100 HOURS OF OPERATION



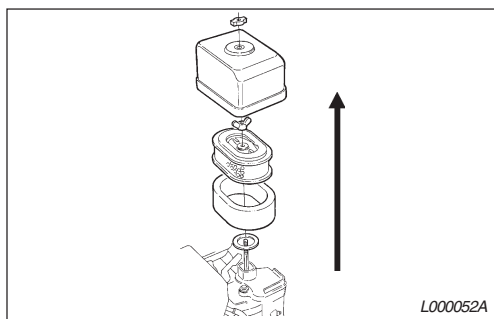
- 1. Oil dipstick
- 2. Oil drain plug
- 3. Spark plug

- 1. Change oil (see engine manual).
- 2. Check and clean the spark plug.



### LT600

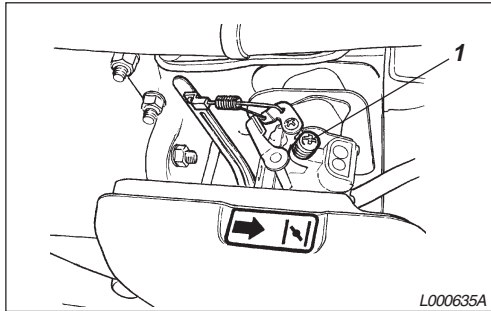
- 3. Replace air cleaner element (see engine manual).



### LT700

- 3. Replace air cleaner element (see engine manual).

## CARBURETTOR – LT600



1. Idling adjustment screw



The air cleaner must be cleaned and the engine run warm before adjusting the revs.

Tachometer PIN: 924719

Revs:

Idling Revs: 1600-1900 rpm

Engagement revs for centrifugal clutch, about: 2500 rpm

Working revs, about: 3800-3900 rpm

### Idling adjustment

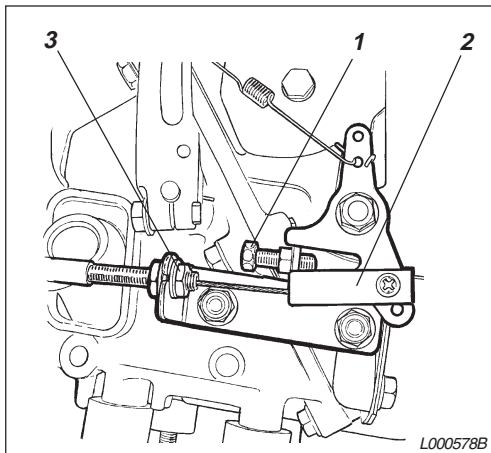
Start the engine and allow it to warm up. While the engine is running, turn the adjusting screw to give the standard idling revs for the engine.

Increase and then decrease the engine speed. Wait 30-60 seconds, and then check the idling speed again.

### Adjusting the working revs

Adjust working revs with the screw (1). Ensure that there is about 5 mm pre-tension on the throttle-wire spring (2) at full throttle.

Adjust the length of the wire (3) to give the correct pre-tension.

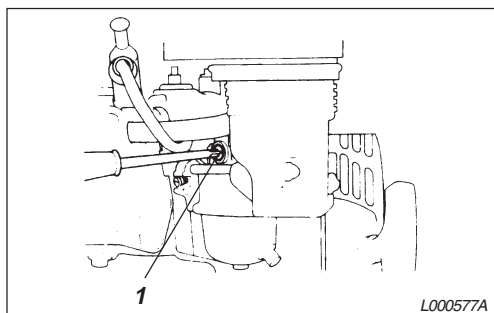


1. Adjusting screw for working revs

2. Spring

3. Adjusting screw for throttle wire

## CARBURETTOR – LT700



1. Idling adjustment screw

CAUTION



The air cleaner must be cleaned and the engine run warm before adjusting the revs.

Tachometer PIN: 924719

Revs:

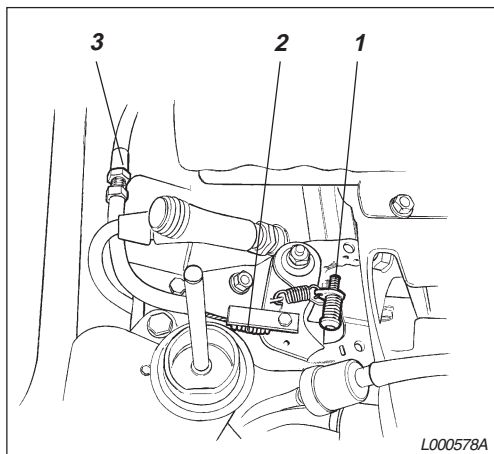
Idling Revs: 1400-1600 rpm

Engagement revs for centrifugal clutch, about: 2500 rpm

Working revs, about: 3600-3700 rpm

### Idling adjustment

Start the engine and allow it to warm up. While the engine is running, turn the adjusting screw to give the standard idling revs for the engine.



1. Adjusting screw for working revs

2. Spring

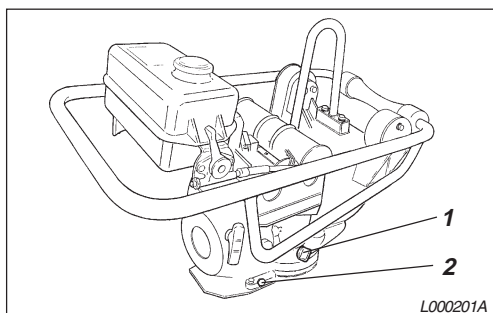
3. Adjusting screw for throttle wire

### Adjusting the working revs

Adjust working revs with the screw (1). Ensure that there is about 5 mm pre-tension on the throttle-wire spring (2) at full throttle.

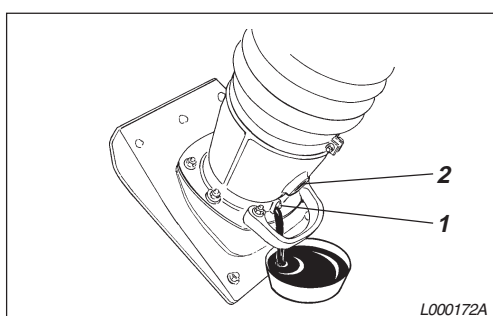
Adjust the length of the wire (3) to give the correct pre-tension.

## MAINTENANCE – EVERY 500 HOURS OF OPERATION



1. Oil dipstick
2. Oil drain plug

1. Change engine oil (see engine manual).
2. Replace air cleaner element (see engine manual).
3. Replace fuel filter and clean the fuel tank (see engine manual).



1. Oil drain plug
2. Sight glass

4. 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.

5. Refit the plug tight, making sure that the rubber seal is undamaged.
6. 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
Engine stalls or does not start	Insufficient fuel	Fill with gasoline, check the fuel filter
Engine does not accelerate, is hard to start or runs erratically	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
Engine overheats	Motor oil low	Refill with lube oil
	Restricted air flow	Clean/replace the air filter
Engine runs, but rammer does not tamp	Clutch damaged	Repair or replace clutch
	Broken connection rod or crankgear	Replace
	Broken pinion or clutch drum	Replace
Engine runs, but rammer erratic	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
	Incorrect engine revs.	Adjust engine revs.



# ***DYNAPAC***

Dynapac Compaction Equipment AB  
Box 504, SE-371 23 Karlskrona, Sweden  
Phone: +46 455 30 60 00  
Fax: +46 455 30 60 30  
[www.dynapac.com](http://www.dynapac.com)