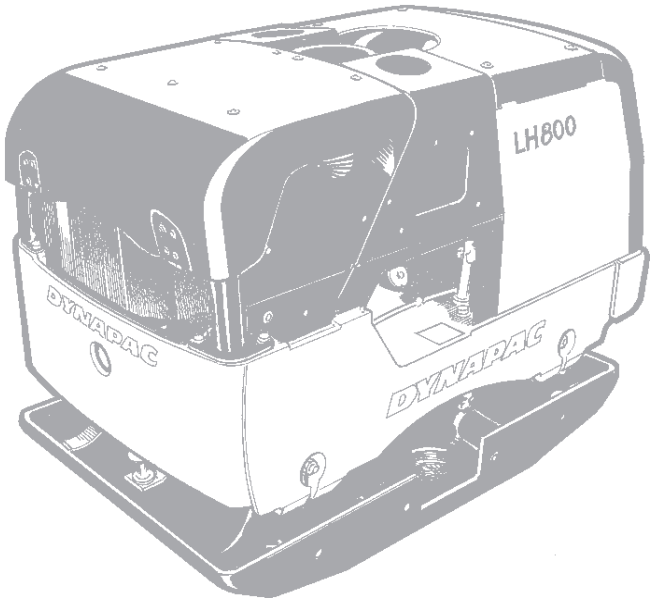
DYNAPAC

# Radio Remote Controlled Forward and Reversible Vibratory Plate Compactor LH800

## Operation & Maintenance ILH800EN5

**Diesel Engine:**
**Hatz 1D90V**

**These instructions apply from:**
**PIN (S/N): *80030215***




Reservation for changes
Printed in Sweden

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## WARNING SYMBOLS

WARNING

WARNING: Indicates danger or hazardous procedure that could result in serious or fatal personal injury if the warning is ignored.

CAUTION

**CAUTION: Indicates danger or hazardous procedure that could result in damage to machine or property if the warning is ignored.**

## 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

WARNING

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

WARNING

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

SPARE A THOUGHT FOR THE ENVIRONMENT! Do not let oil, fuel and other environmentally hazardous substances contaminate the environment. Dispose of the old battery in the approved environmentally suitable manner – batteries contain toxic lead.

It is important that the machine be 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.

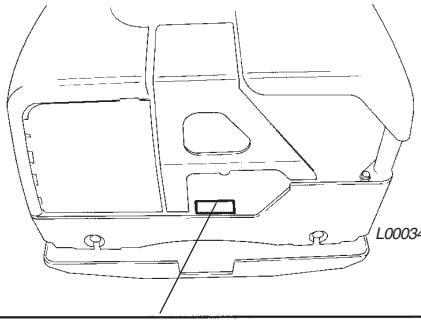
This manual contains instructions for periodic maintenance, which should normally be carried out by the operator.

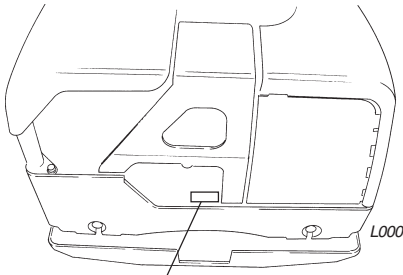
CAUTION

There are additional instructions relating to the engine. Please see the manufacturer's instructions in the engine manual.

## MACHINE AND ENGINE PLATES

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




DYNAPAC CE

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 plate**

.....
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 effect 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.

## 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.

### 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

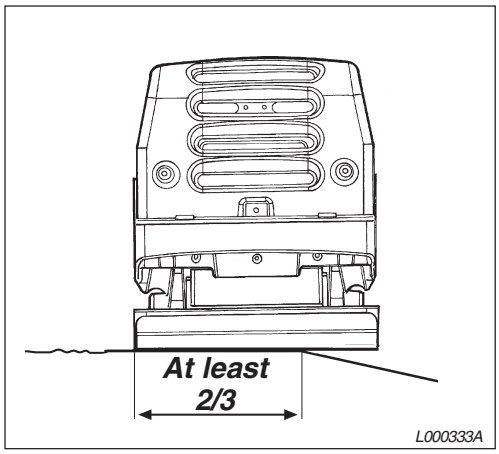
If there is a fire in or on the machine, it is best to use an ABE-class fire extinguisher. However, a BE-class $CO_2$ extinguisher is also suitable.

### Special safety instructions for Radio Remote Controlled units

Even if you are accustomed to working with radio control systems, read these operating instructions carefully before using this equipment. Only this document contains the latest information relating to your Dynapac radio control system.
For explanatory notes on obtaining an operating permit please refer to registration documents enclosed in the appendix of this operating instruction. Observe all applicable work-safety and accident prevention regulations carefully. Only fully trained, authorized personnel may use the Dynapac radio control equipment. Components, etc. built in to the Dynapac equipment for safety purposes must be regularly inspected.

If the Dynapac radio control unit develops a fault, it must be shut down immediately. The transmitter should be switched off with the start/stop switch. The connecting cable must be disconnected at the receiver from the connecting socket (terminal) of the unit to be controlled. The repair of the equipment must not be carried out other than by Dynapac or an Dynapac authorized technician.
Failure to observe these recommendations will put both you yourself and others at risk. Under these circumstances, Dynapac rescinds the guarantee and any other form of liability. This radio control unit is designed exclusively for the control of construction machines and industrial plants. Only under these conditions are the safety systems (start/stop switch, zero setting) fully effective. No other form of use is permitted.
Any non-observance of this condition will relieve Dynapac of all liability.

## Driving near an edge

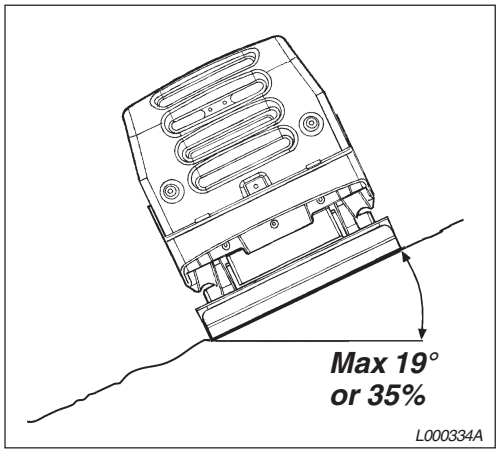



*Machine location when operating on edges*

When driving near an edge, at least two thirds of the plate must be on firm solid ground.

WARNING **If the machine tips over, switch off the engine before attempting to lift the machine.**

## Slopes



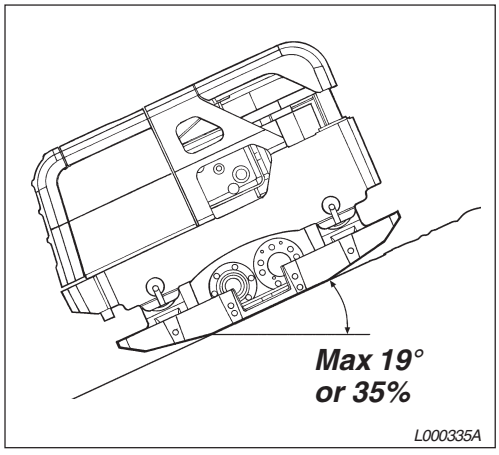

*Tipping angle on side slopes*

Make sure that the work site is safe. Wet and loose earth reduces manoeuvrability especially on sloping ground. Always observe particular caution on sloping and uneven terrain.

WARNING **Where possible, avoid all driving across a slope. Instead, drive up and down on sloping ground.**

Never work on slopes that are greater than the capability of the machine. Maximum slope of the machine in operation is 19° (depending on condition of the ground).

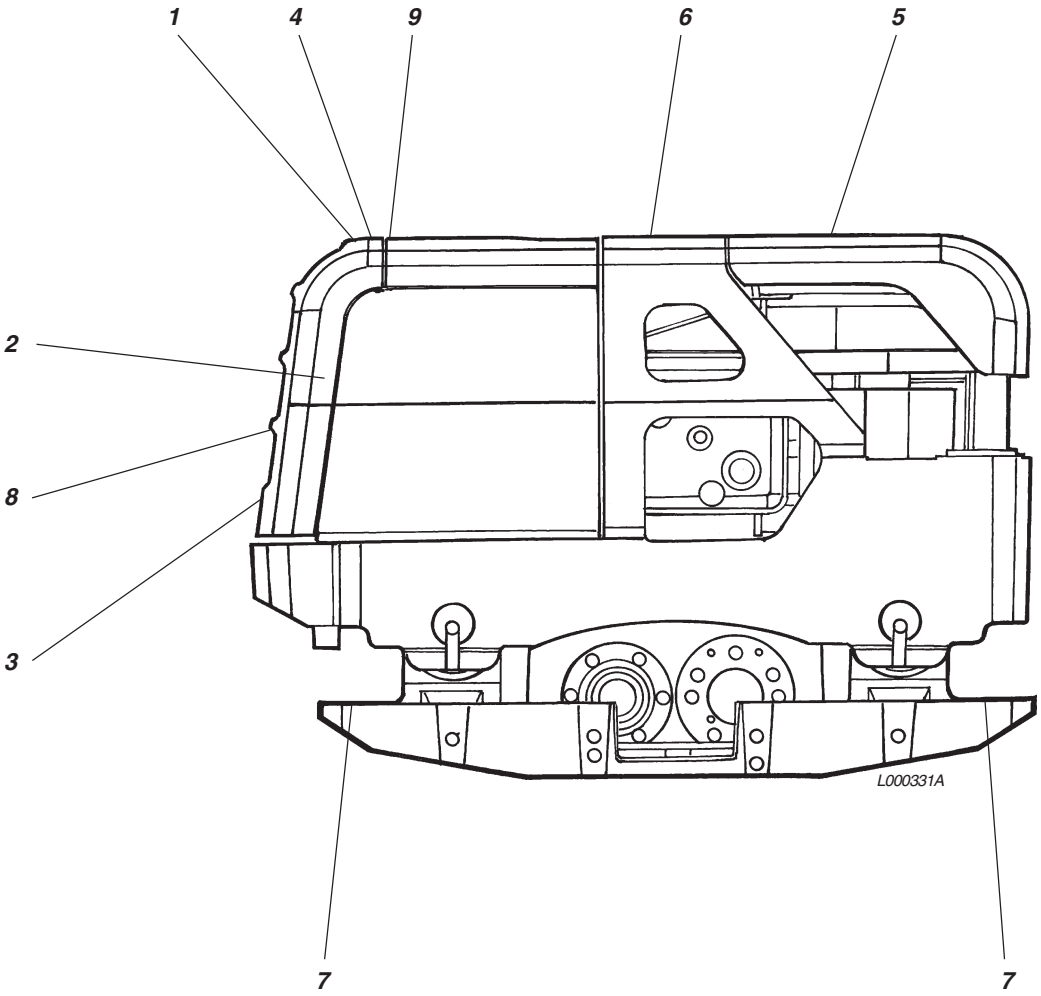
The tilting angle is measured on a hard, level surface with the machine stationary. Vibration switched OFF and all tanks full. Remember that loose ground, vibration switched ON, and driving speed can all cause the machine to topple even on a smaller slope than specified here.




*Tipping angle on slopes*

WARNING **Never leave the machine unattended with the engine running.**

# SAFETY DECALS, LOCATION/DESCRIPTION




WARNING **Always make sure that all safety decals are clearly legible; remove dirt and order new decals if they are not legible. Refer to the article number each decal and also on the following page.**

# SAFETY DECALS, LOCATION/DESCRIPTION

*1.*


**The operator must read the safety manual, and the operation and maintenance instructions before using the machine.**

*2.*

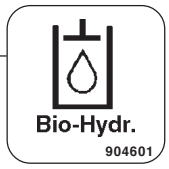

**Warning for rotating engine components. Keep your hands at a safe distance from the danger zone.**

*3.*

*Alt 1*


**Hydraulic fluid**

*Alt 2*




**Hydraulic bio-fluid**

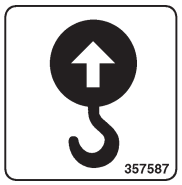
*4.*


**Use ear protectors**

*5.*


**Diesel**

*6.*

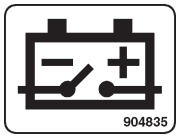



**Lifting point**

*7.*

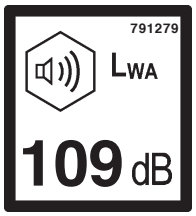

**Securing point**

*8.*




**Master switch**

*9.*




**Guaranteed Sound Power level**

# FUEL AND LUBRICANTS

| | |
|---|---|
| **ENGINE OIL** | Use SAE 15W/40:<br>1,9 litre (2.0 qts) Shell Universal Engine Oil TX15W-40 |
| **ECCENTRIC OIL** | Use SAE 15W/40:<br>0,5 litre (0.55 qts) Shell Helix Ultra 5W-40 ✷ |
| **HYDRAULIC FLUID** | Hydraulic fluid, recommendation:<br>27,0 litre (7.1 gal) Shell Tellus TX68 or equivalent |
| **BIODEGRADABLE HYDRAULIC FLUID** | BP BIOHYD SE-S 46<br>On delivery from the factory the machine may have been filled with biodegradable fluid. Always use the same type of oil when changing or topping off. |
| **FUEL** | Use diesel oil which satisfy EN 590 or DIN 51601<br>7,0 litre (7.4 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.**

✷ CAUTION The oil volume is 0,5 l from S/N 80030215. This volume is also sufficicant on previous machines. See Service Information (SI) SI 03004.

# TECHNICAL DATA

| Weight | LH800 |
|---|---|
| Operating weight<br>EN500, kg (lbs) | 820 (1,808) |

**Compaction data**

| | |
|---|---|
| Vibr. frequency, Hz | 53 |
| Vibr. frequency, vpm | 3180 |
| Centrifugal force, kN (lbf) | 95 (21,400) |
| Amplitude, mm (in) | 2,5 (0.98) |

**Operating data**

| | |
|---|---|
| Speed of travel,<br>m/min (feet/min) | up to 30 (98) |
| Max. tilt, % | 35 |

**Volumes**

| | |
|---|---|
| Fuel tank, lit. (qts) | 7,0 (7.4) |
| Crank case, lit. (qts) | 1,9 (2.0) |
| Hydraulic fluid, lit. (gal) | 27,0 (7.1) |
| Eccentric element, lit. (qts) | 1,0 (1.1) |
| Fuel consumtion, l/h (qts/h) | 2,3 (2.4) |

**Engine**

| | |
|---|---|
| Model | Hatz<br>1D90V<br>El.start |
| Output, kW (hp) | 11,5 (15.4) |
| Engine speed, rpm | 3000 |

**Noise and Vibrations**

The following sound and vibration levels are determined in accordance with the operating cycle described by EU directive 2000/14/EC.

Guaranteed acoustic power level
LwA dB (A) 109

Sound-pressure level at the operator's ear (ISO 6396)
LpA dB (A) 84

Hand and arm vibration (ISO 5349-1)
ahv $m/s^2$ - (Radio)

During operation these values may differ because of the actual operational conditions.

# TECHNICAL DATA – RADIO REMOTE CONTROL UNIT

| | |
|---|---|
| Operating ambient temperature | -20 to +65°C (-4 to +149°F) |
| Insulation class - Protection | IP65 |

| | |
|---|---|
| **TRANSMITTER** | Nano-L-A2-1 |
| Transmission frequency range | 400 - 477 MHz, 25 mW FM |

The use of synthesizer technology permits frequencies to be selected in accordance with the appropriate waveband for the country of use.

| | |
|---|---|
| Low frequency modulation | FSK signal to CCITT V.23 |
| Data repetition rate | about 60 ms |
| Baud rate | 1200 baud (bits per sec.) |
| Range | 300 up to 1000 m |
| Power input | 60-100 mA |
| RF ouput | Max. 10 mW |
| Weight (without battery) | Size (L x W xH) |
| Nano-L 1,0kg | 24,7 x 13,9 x 11,7 cm |

| | |
|---|---|
| **RECEIVER** | PNN-Compact |
| Reception frequency range | 400 - 477 MHz |

Data security:
Generates a CRC code with a Hamming distance = 4.
Generates a neutral position.
Addressing of each transmitter with its own, unique combination (max. $2^{16}$ possible combinations).
Data reception security:
Diversitary evaluators, CRC, start/stop switch and neutral position bits.
Contact loading for commands.

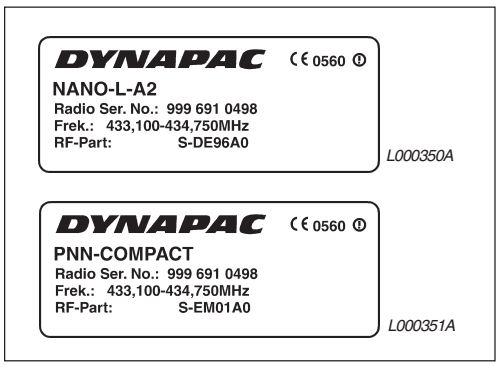
| | |
|---|---|
| typ. switching voltage | 12 V |
| max. switching current | 60 A resp. 2 A (depends on coil type) |
| Weight | Size (L x W x H - incl. plate) |
| PNN-Compact 2,4 kg | 22 x 16 x 6 cm |

| | |
|---|---|
| **BATTERY** | 7,2V / 0,6 Ah |

**CHARGING UNIT**

| | |
|---|---|
| Operating voltage / external charging unit | 12V / 24V DC, 110V / 230V AC |
| Operating voltage / PNN-Compact | 12V DC |

## Data signs

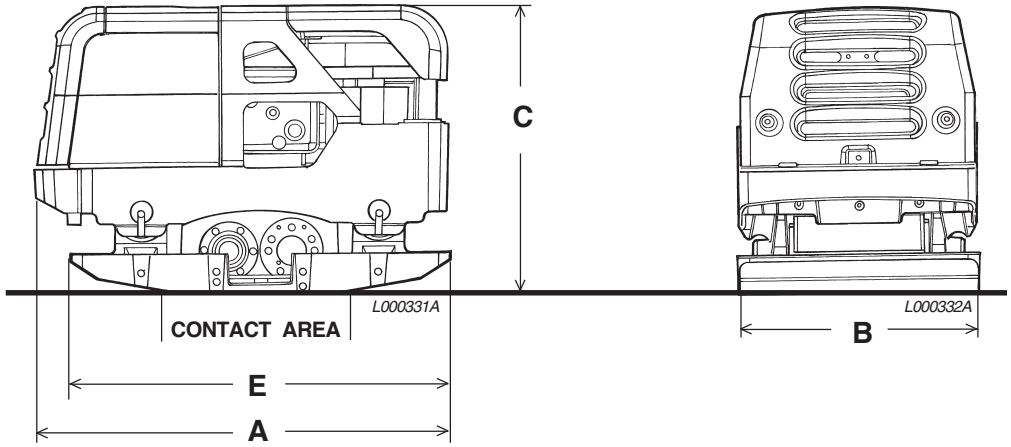



Data signs are located behind the battery on the transmitter and receiver. The data includes the serial number, model designations and frequency band. The transmitter and receiver have the same serial number.

CAUTION

Always specify the serial number when you make queries about the control equipment.

# TECHNICAL DATA – DIMENSIONS




| | LH800 |
|---|---|
| **A** mm (inch) | 1150 (45) |
| **B** mm (inch) | 660 (26) |
| **C** mm (inch) | 795 (31) |
| **E** mm (inch) | 1050 (41) |
| **Contact area,** $m^2$ (sq feet) | 0,290 (3.12) |

| **Optional** | **LH800** |
|---|---|
| **Extension plates** | |
| **Width,** mm (inch) | 2 x 75 = **150** (2 x 3 = **6**) / 2 x 150 = **300** (2 x 6 = **12**) |
| **Weight,** kg (lbs) | 14,6 (32) / 24,6 (54) |
| **Contact area,** $m^2$ (sq feet) | Width 150 (6): **0,356** (3.83) / 300 (12): **0,422** (4.54) |

# THE MACHINE'S RANGE OF APPLICATIONS

Dynapac LH vibratory plate compactors are designed for the compaction of fill. The LH plate compactor can be used for most applications in its class, round concreted foundations and structural units, floors and other foundations, and to refill trenches.

It is also useful for paving applications together with polyurethane matting.

The LH compactor must only be used in well-ventilated areas, as is the case with all combustion engine machines.

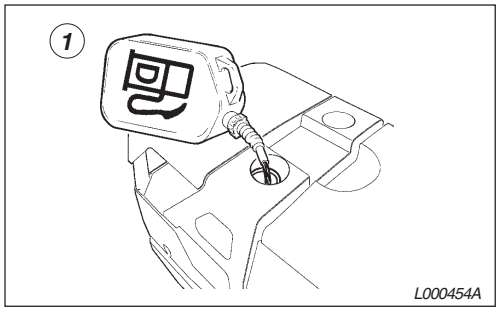
When operating the LH compactor, follow the instructions in the manual; do not sit or stand on the machine when it is working. This will interfere with the machine’s functionality and can also damage the machine.

The LH compactor must not be towed behind vehicles.

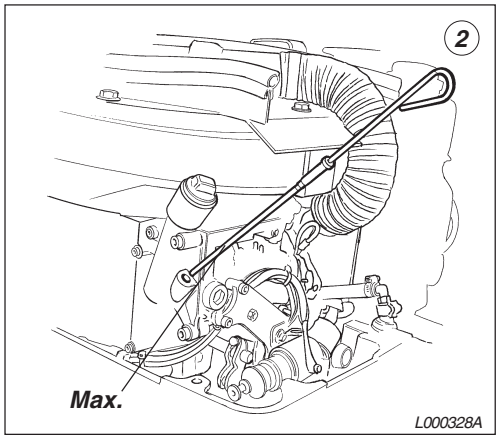
–

Do not operate on steeper slopes than recommended in this manual.

## Before start




1. Fill the fuel tank.
   Tank volume: 7,0 litre (7.4 qts)

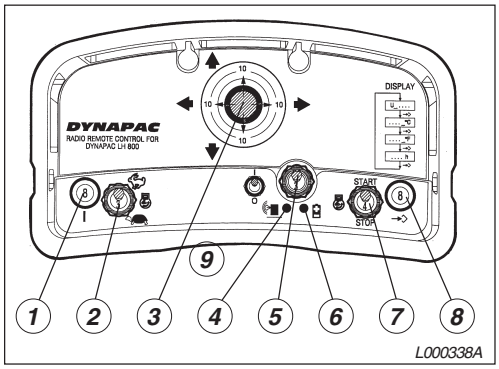



2. Check the engine oil level.
   Oil volume: 1,9 litre (2.0 qts)

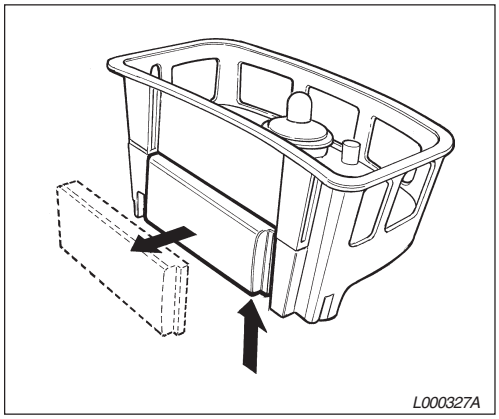
WARNING

**Never use start gas.**

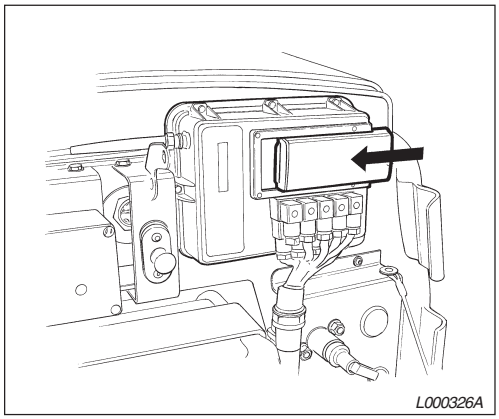
## Transmitter




1. *Push button to alter frequency*
2. *Speed switch, High/Low*
3. *Joystick*
4. *Transmitter indicator, On*
5. *Transmitter switch, On/Off*
6. *Low-battery indicator*
7. *Start/Stop switch, engine*
8. *Push button to alter frequency/browse through values on the display*
9. *Battery*




*Removing the battery from the transmitter...*




*... and inserting it in the receiver for charging.*

WARNING **Even operators who are used to working with remote radio-controlled machines must carefully study this manual before using the machine.**

WARNING **Only trained personnel who are fully conversant with the control system may operate the machine.**

WARNING **If any error occurs in the system, immediately switch off the start/stop switch on the transmitter and the battery disconnecter, and unplug the power supply cable to the machine.**

WARNING **All troubleshooting and repairs must be performed by Dynapac-authorized service personnel.**

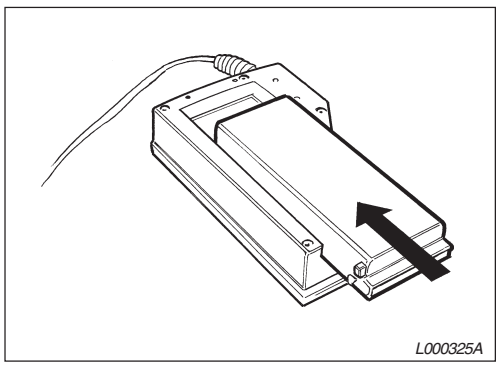
The transmitter and receiver must have the same address code (and serial number). To use another transmitter, you must code it so that its address code corresponds to that of the receiver.

The range is 50 to 200 metres (55 to 220 yards), depending on the surroundings and any radio-frequency interference. In the event of radio interference, alter the transmitter frequency by pressing buttons 1 and 8. The frequency can be altered in steps of 25 kHz for each push of the button (0–67 channels).

The transmitter has two 1100 mAh Ni-Cad batteries. Insert the battery into the transmitter by sliding it into its slot until it locks in position. To remove the battery, press the catch and slide the battery sideways and then outwards. The operating time for a fully charged battery is 8 to 10 hours. The transmitter has a red LED that lights when it is time to change the battery. In this mode, the transmitter can be used for another 15 minutes. Change the battery and make sure that slot and contact surfaces are clean. Radio communication is interrupted when the battery is removed. Charge the battery in the receiver on the machine or in a separate table charger.

The battery should be trickle-charged every four weeks if the transmitter is not used. Remove the battery if the transmitter is not used for a long period.

## Battery charger (optional)

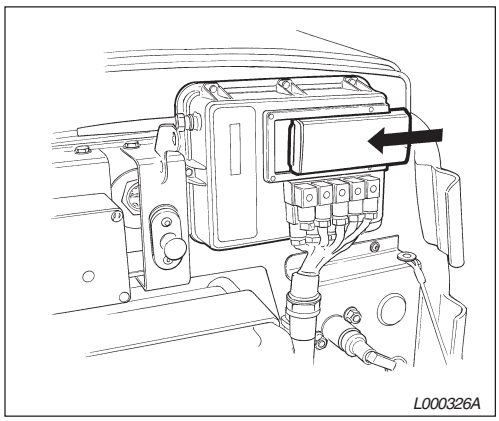



*Battery charger*

A steady green light indicates that the charger is ready for charging. Place the battery in the charger. If the battery is completely discharged, the yellow LED flashes slowly during the pre-charge. A steady yellow light indicates that the battery is being charged. The battery is fully charged when the yellow LED flashes quickly. Charging time is 3 to 5 hours. The battery will not be damaged if left in the charger when fully charged.

WARNING **Use the charger only in a dry room with min. and max. temperature 0–40°C. A charged battery is concentrated energy. Never keep a battery where it can be short-circuited.**

## Receiver




*Receiver*

The receiver is fitted in the machine under the rear plastic hood. It is equipped with an antenna, display and integrated battery charger for the transmitter batteries.

The charging time for the transmitter battery in the receiver is 1 hour.

The display shows:

| | |
|---|---|
| Battery voltage, machine: | U:XX. X |
| Temp. in hydraulic reservoir (°C): | XX:°C |
| Temp. in hydraulic reservoir (°F): | XX:°F |
| Aggregate operating time, diesel engine: | XXXXYh |

(Y is used if the number of operating hours exceeds 9999, otherwise Y is blank).

| | |
|---|---|
| Error messages: | Err: XX |

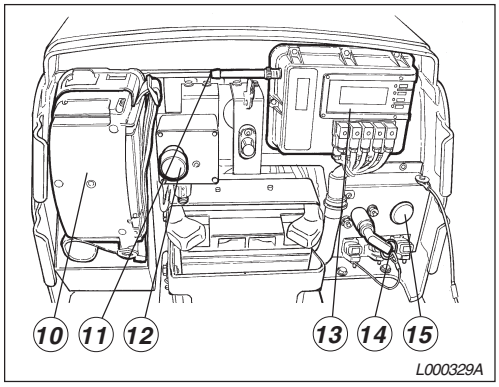
The display shows first the battery voltage and then the other values, rolling. To browse, press the right frequency-change button (8) on the transmitter (with the receiver in operating mode).

The display also shows several error codes (**Err: XX**):
**Err: 01:** Low engine oil pressure.
*Measure: Check/top off oil.*
**Err: 02:** High hydraulic temperature.
*Measure: Allow machine to cool. Check the drive system/eccentric elements if the ambient temperature is extremely high.*
**Err: 10:** Radio contact broken during operation.
*Measure: Change frequency if this occurs often.*

## Before start

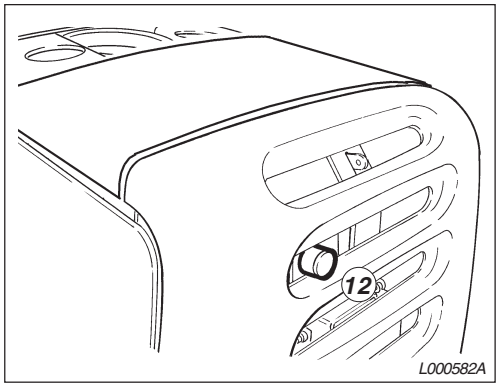
In transport mode, the transmitter should be placed under the rear hood.

## Starting the engine



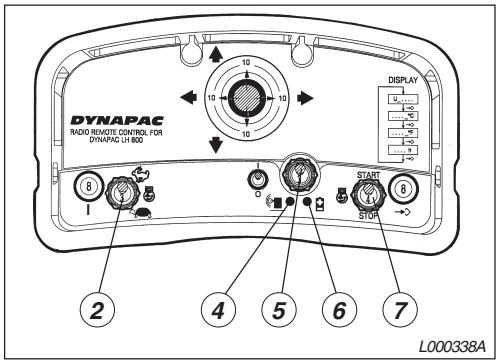

*10. Transmitter*
*11. Antenna*
*12. Emergency stop knob*
*13. Receiver*
*14. Master switch*
*15. Buzzer*

1. Open the rear plastic hood and take out the transmitter. Insert and turn the battery disconnecter (14) to locked mode. The beeper sounds (15) when power is switched on. The beeper stops as the engine starts.




*12. Emergency stop knob*

2. Close the hood and pull out the emergency stop knob (12) on the machine.




*2. Speed switch, High/Low*
*4. Transmitter indicator, On*
*5. Transmitter switch, On/Off*
*6. Low battery voltage*
*7. Start/Stop switch, engine*

3. Switch the transmitter (5) on. A green LED (4) indicates when the transmitter is on.

4. Check the battery status. The low-battery warning light (6) should not light. Always have an extra fully-charged battery available.

CAUTION

Wait 4–5 seconds. The time it takes for the transmitter to open communication with the receiver.

5. Set the engine revs switch (2) to “low” mode (tortoise).

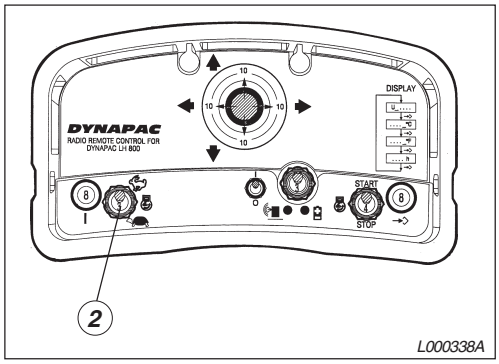
6. Press the start/stop switch (7) forward until the engine starts. Release the start/stop switch as the engine starts.

7. A new attempt to start can be made after 7 seconds.

WARNING

**Never use start gas.**

## Operating




*2. Speed switch, High/Low*

1. Give full throttle by setting the speed switch (2) to "high" (hare).

WARNING **Make sure that the working area is safe. Wet and loose ground reduce the machine's operating ability, especially on slopes.**

WARNING **Never leave the machine with the engine running, always switch off the master switch (14) when leaving the machine. Do not allow passengers on the machine.**

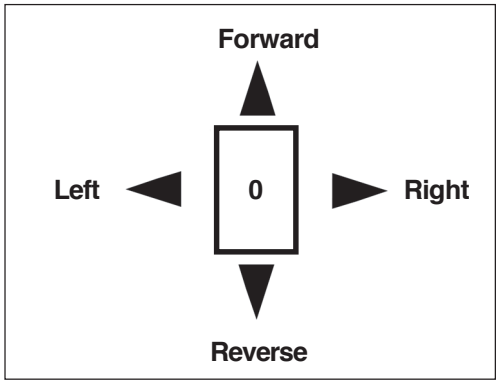
WARNING **Do not operate the machine at a greater distance than 20 metres (22 yards). Always keep the working area and the machine under good supervision.**

WARNING **Never give the transmitter to anyone who is not fully conversant with the machine, its operation and safety directives.**

CAUTION

Repeated high speed setting is only possible after 30 sec of low speed.

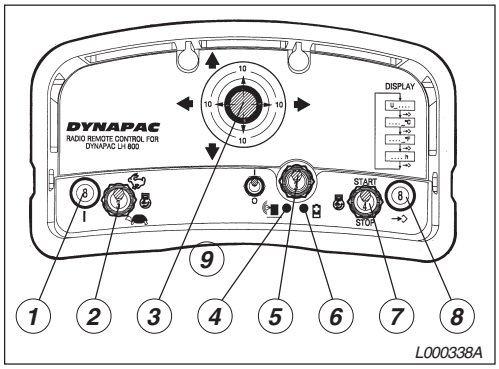
## Control




The positions of the remote control joystick have the following functions:

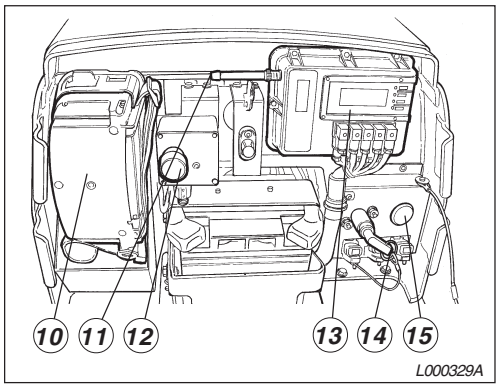
**Forward** The machine moves forward.
**Reverse** The machine reverses.
**Right** The machine rotates to the right.
**Left** The machine rotates to the left.
**0** Vibration and the machine stop if the joystick is released.

## Transmitter




1. *Push button to alter frequency*
2. *Speed switch, High/Low*
3. *Joystick*
4. *Transmitter indicator, On*
5. *Transmitter switch, On/Off*
6. *Low-battery indicator*
7. *Start/Stop switch, engine*
8. *Push button to alter frequency/browse through values on the display*
9. *Battery*

## Starting the engine




10. *Transmitter*
11. *Antenna*
12. *Emergency stop knob*
13. *Receiver*
14. *Master switch*
15. *Buzzer*

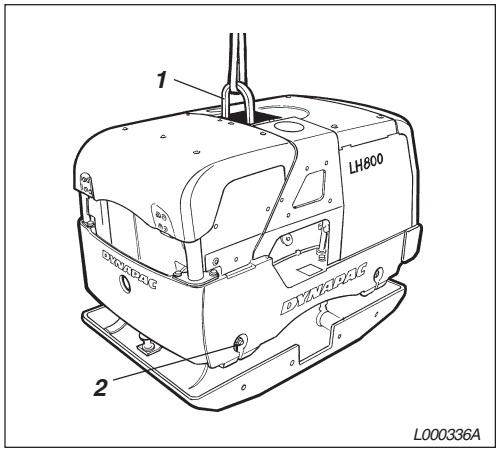
WARNING **The machine will immediately stop when the emergency stop knob on the machine is pressed. Make sure that the emergency stops is always in working order.**
**The machine stops immediately when you release the joystick. Make sure that the joystick is working and that it returns to zero mode on being released. The machine stops immediately when the on/off switch on the transmitter is turned off.**

1. Stop the vibration, inactivated joystick (3).
2. Set the speed switch (2) to “low” (tortoise).
3. Let the engine idle a couple of minutes.
4. Push the start/stop switch (7) backward.
5. The buzzer sounds when the engine stops.
6. Open the rear hood and turn back the battery disconnecter (14) so that the beeper is silenced.
7. Press the cut-off button (5) to switch off the transmitter; the green indicator lamp goes out.
8. Put the transmitter in transport mode in the machine, or keep it in a safe place.
9. Charge the transmitter battery after the day’s work so that a fully-charged battery is always available.

WARNING **Always store the transmitter securely to prevent unauthorized starting of the machine.**

# LIFTING AND TRANSPORTATION

## Lifting




*1. Lifting hook*
*2. Shock absorbers*

WARNING

**Never walk or stand under a hoisted machine.**

CAUTION

Use only the frame lifting hook (1) to lift the machine.

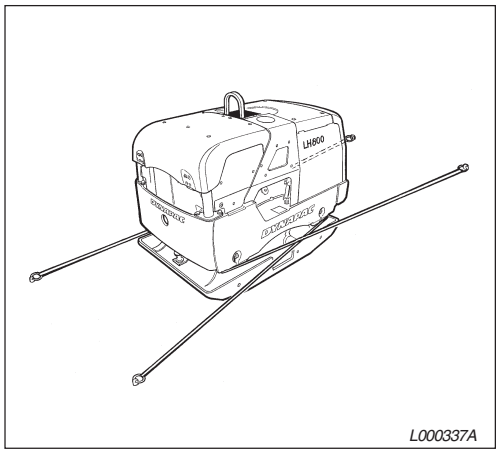
CAUTION

All lifting devices must be dimensioned to meet all regulations. Before lifting, check that shock absorbers (2) and protecting frame are correctly attached and not damaged.

WARNING

**The operating mass is printed on the machine plate, see page 3. Add weight of extensioners if mounted.**

## Transportation

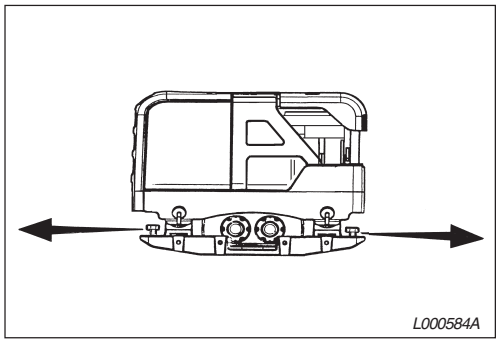



WARNING

**Always secure the machine firmly during all transportation. Use the front and rear towing attachments to lash the machine.**

# TOWING AND RETRIEVAL

## Towing attachments




When towing or retrieving a machine, the towing device must be connected to both towing attachments, front and rear, on the bottom plate of the machine. Pulling forces should act longitudinally on the machine as illustrated. Maximum permitted pulling force is 15 kN horizontally in the longitudinal axis of the machine.

# MAINTENANCE – SERVICE POINTS

## Batteries


**When removing the battery, always dis-connect the negative cable first. When fitting the battery, always connect the positive cable first.**

Dispose of the old battery in the approved environmentally suitable manner – batteries contain toxic lead.


Do not use a quick-charger when charging the battery. This may shorten the life of the battery.


When welding on the machine, the positive and negative terminals of the battery must be disconnected. Never connect the welder ground to the diesel engine. Disconnect the cable from the receiver before any welding on the machine.

### Technical data

| Model | Battery | Capacity | Max. current | HxLxW | Weight |
|---|---|---|---|---|---|
| LH800 | HV44-12 | 44 Ah/20 hours | 660 A (5 sec) | 175x197x165 mm (6⅔ x 7¾ x 6½ in) | 15 kg (33 lbs) |

### Starting characteristics

The battery is designed for high load (brief high current). The battery´s ability to supply power is reduced when very cold. The capacity is specified for 25°C (77°F) and it falls by about 0.8% per °C (2°F). The capacity does not disappear altogether when cold. The battery regains full power when it becomes warm again.

### Charging

The battery is normaly charged by the engine generator. If for some reason the battery is completely discharged, it must be recharged using a battery charger. You can discharge the battery by not turning back the ignition key after the engine starts, or by starting and stopping the engine so often that the battery does not have time to recharge normaly.

Cyclical charging of LH batteries using battery charger:

| Battery | Charging current | Charging voltage |
|---|---|---|
| HV28-12W | max. 8.4 A | 14.4–14.7 V |
| HV44-12 | max. 13 A | 14.4–14.7 V |

**NOTE**

Use a voltage-regulated battery charger (constant voltage). A switched two-stage charger that has constant voltage is recommended. A two-stage charger automatically reduces the charging voltage (14.4 V) to trickle charging (13.3 V) when the battery becomes fully charged.

Suitable battery chargers for 230 Volt:

**Optima** Model RTC 12/7-S-230
**LADAC** Model LADAC 512
**Tudor** Model 61715 Tudor

### Storage/Trickle charging

A discharged battery will freeze at a temperature of about -7°C (19°F). A fully charged battery will freeze at -67°C (-88°F). A battery that is not being used should be fully charged before being put aside. Trickle charging is not normallly required during a period of 6 to 8 months. If a battery has not been in use for a long period, we recommend fully charging it before use. Trickle charging is recommended a couple of times during the season (especially in winter).

# MAINTENANCE – SERVICE POINTS

1. *Fuel tank*
2. *Intake filter*
3. *Air filter*
4. *Engine oil filter*
5. *Oil dipstick*
6. *Fuel filter*
7. *Battery*
8. *Oil drain plug*
9. *Eccentric element, level/drain plug*
10. *Hydraulic reservoir*
11. *Hydraulic filter*
12. *Hose for oil drainage*
13. *Water separator*
14. *Transmitter/Receiver*

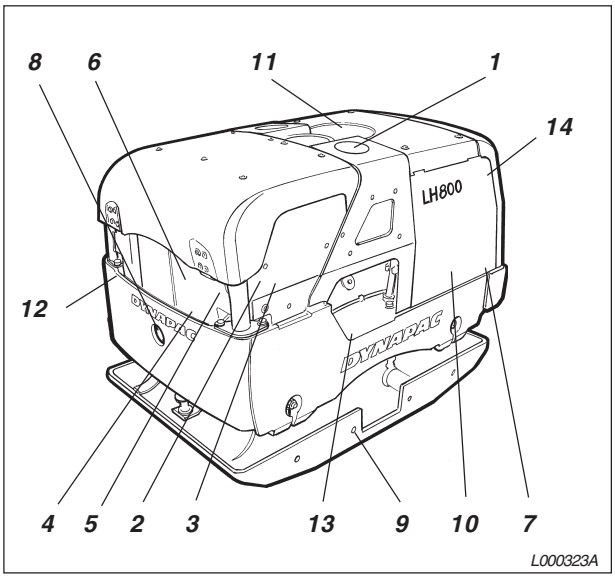



***Fig. 1***

## Every 10 hours of operation / Daily

| Item in fig.1 | Maintenance | see page | Comments |
|---|---|---|---|
| 1 | Check and replenish fuel | 16 | |
| 5 | Check and replenish engine oil | 26 | |
| | Check for oil leakage | | |
| | Check and tighten engine parts | 26 | |
| 2 | Clean / replace air cleaner elements | | See engine manual |
| 14 | Check transmitter/receiver | 26 | |

## The first 20 hours of operation

| Item in fig.1 | Maintenance | see page | Comments |
|---|---|---|---|
| 8 | Change engine oil | 27 | |
| 4 | Clean / replace oil filter | | See engine manual |
| 2 | Clean / replace air cleaner elements | | See engine manual |
| | Check and adjust the engine valve clearance | | See engine manual |

# MAINTENANCE – SERVICE POINTS

### Every 100 hours of operation

| Item in fig.1 | Maintenance | see page | Comments |
|---|---|---|---|
| 13 | Empty water separator | 27 | |
| 8 | Change engine oil | 27 | |
| 10 | Clean airbreather filter | 27 | |
| 10 | Check level in hydraulic tank | 27 | |
| 2 | Clean / replace air cleaner elements | | See engine manual |

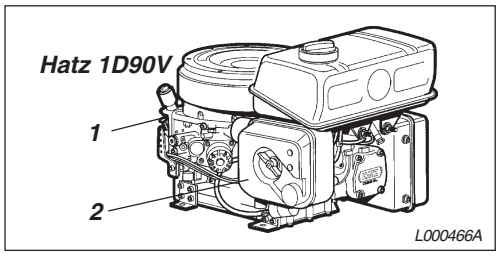
### Every 500 hours of operation / Once a year

| Item in fig.1 | Maintenance | see page | Comments |
|---|---|---|---|
| 8 | Change engine oil | 27 | |
| 10, 11 | Change hydraulic fluid and filter | 28 | |
| 4 | Clean / replace oil filter | | See engine manual |
| 2 | Clean / replace air cleaner elements | | See engine manual |
| | Check fuel injection pump | | See engine manual |
| | Check fuel injection nozzle | | See engine manual |
| | Adjust valve clearance | | See engine manual |

### After three years / 1000 hours of operation

| Item in fig.1 | Maintenance | see page | Comments |
|---|---|---|---|
| 9 | Change eccentric element oil | 29 | |

# MAINTENANCE – EVERY 10 HOURS OF OPERATION

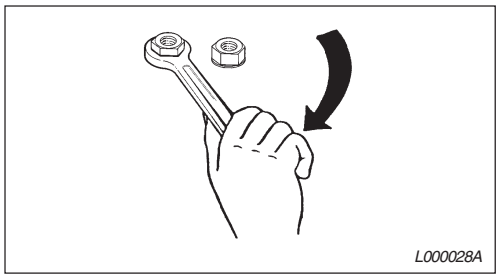



*1. Oil dipstick*
*2. Air cleaner*

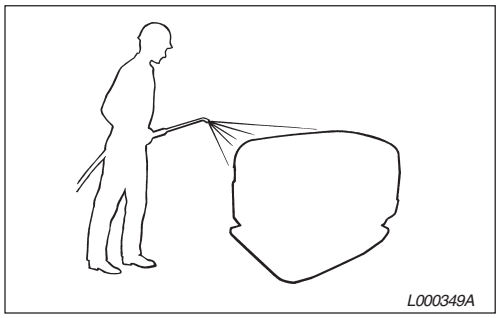
1. Check oil level in engine crankcase.

2. Check air cleaner.

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




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




4. Keep machine clean.

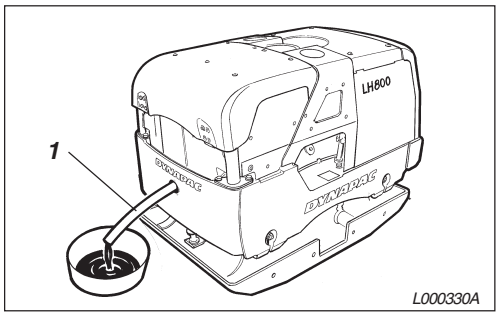
CAUTION When washing the machine, do not aim a jet of water jet directly at the fuel cap. This is especially important when using a high-pressure jet. Put a plastic bag over the filler cap of the fuel tank and secure with an elastic band.

CAUTION **Never** use high-pressure cleaning on the radio receiver or transmitter.

5. Transmitter: Carefully clean the panel as necessary. Make sure that seals around the switch are intact. Inspect and clean slots and contact surfaces for the battery as necessary.

6. Receiver: Make sure that the antenna is fixed in position and that slots and contact surfaces for the transmitter battery are clean.

# MAINTENANCE – EVERY 100 HOURS OF OPERATION



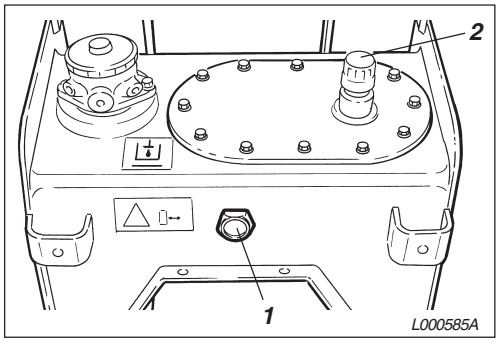

*1. Oil drain plug/drain hose*

1. Change oil (first change after 20 hours, together with engine oil filter).

   Hatz 1D90V 1,9 litre (2.0 qts)

   Use the accompanying hose (1) to drain the oil.

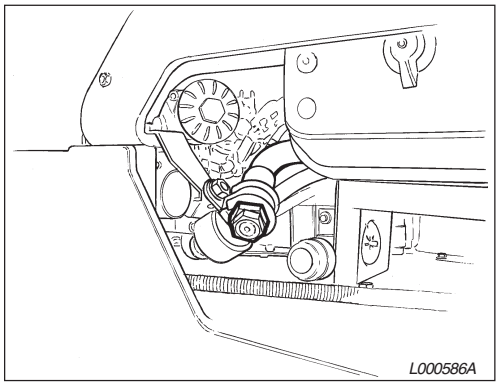
   Save the oil and dispose of it in an approved manner.




*1. Sight glass*
*2. Air breather filter*

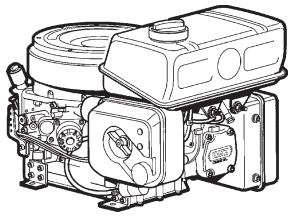
2. Check fluid level (1) in hydraulic reservoir.

   27,0 litre (7.1 gal)




3. Inspect the water separator-diesel fuel/water separator, drain until only pure fuel is left in the bowl.

***Hatz 1D90V***

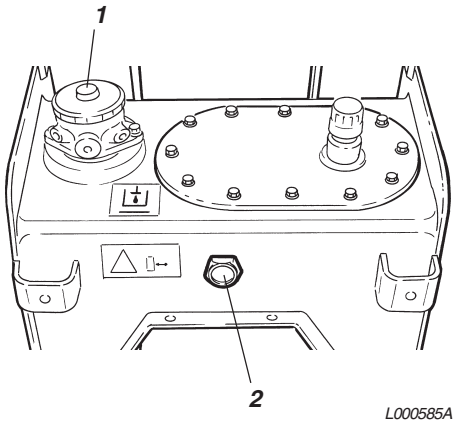


L000466A

1. Replace fuel filter (See engine manual).
2. Change engine oil (See engine manual).
3. Replace oil filter (See engine manual).
4. Replace air cleaner element (See engine manual).

Save the oil and dispose of it in an approved manner. Also dispose of used oil filters properly.

## Changing hydraulic fluid / filter




L000585A

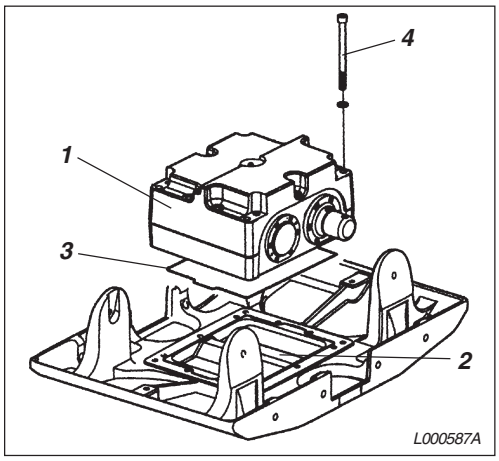
*1. Hydraulic filter*
*2. Sight glass*

1. Remove the protecting cover.
2. Open hydraulic reservoir at filter and empty it by using a suitable pump. Collect the contents in a receptacle.
3. Replace the hydraulic filter.

Save the oil and dispose of it in an approved manner. Also dispose of used oil filters properly.

4. Fill with fresh hydraulic fluid up to the sight glass level: 27,0 litre (7.1 gal)
5. Replace the filter and all covers.

## Changing eccentric element oil




*1. Eccentric element*
*2. Oil basin*
*3. O-ring*
*4. Screws*

1. Dismount the eccentric element (1) and clean the oil basin (2) at the bottom plate.
2. Refill with 0,5 l oil, Shell Universal Engine Oil TX 15-40.
3. Before mounting the eccentric element, grease surfaces between eccentric element and ground plate.
4. Use new O-ring, P/N: 904923 (3) and torque the screws (4) crosswise dry to 320 Nm.

## APPROVALS FOR NON EC COUNTRIES

| | |
|---|---|
| **AUS** | **no approval necessary** |
| **CDN** | **2634231116A/2634231116** |
| **CH** | **BAKOM95.0720.K.P** |
| **CZ** | **45251983** |
| **H** | **MÜ-40.039-083/96** |
| **KO** | **93335** |
| **PL** | **1027/96** |
| **TJ** | **YK33-9806** |
| **USA** | **K9VPOC90T001 /K9VPNN3-5R001** |
| | **O5RS-DE96AO** |
| **ZA** | **3K43D/3R1B9/SPLS/RX-439/98** |

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