DYNAPAC

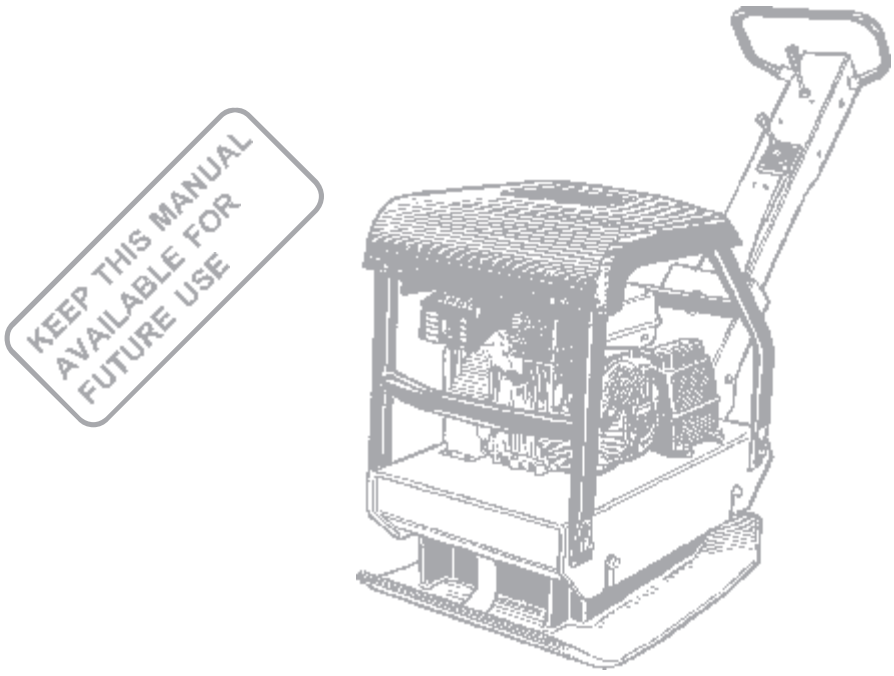
Forward and Reversing Vibrating Plate
LG200

Operation & Maintenance
ILG200EN2, November 2004

Petrol Engine:
Honda GX200

Diesel Engine:
Hatz 1B20 (manual start)
Hatz 1B20 (el. start)

These instructions apply from:
LG200 PIN (S/N) *32003300*



Dynapac LG200 are compact Forward/Reverse Vibratory Plates with excellent compaction data. Speed and compaction depth are regulated steplessly via hydraulic servo conirol of the eccentric element. This gives the plate smooth motion and makes it very easy to operate.

All-round plates for compaction work close to piles and concrete bases. Also for floor filling and foundations as well as backfill in pipe trenches.

The handle is suspended on special shock absorbers to keep it free from vibrations. A protection frame with single-point lifting lug is covering all vital parts of the machine. The LG plates are designed for operation in well ventilated spaces, as all combustion engine machines.

Reservation for changes.
Printed in Sweden

CONTENTS

WARNING SYMBOLS

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

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

SAFETY INSTRUCTIONS

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.

Read through the entire manual before starting any maintenance operations.

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.

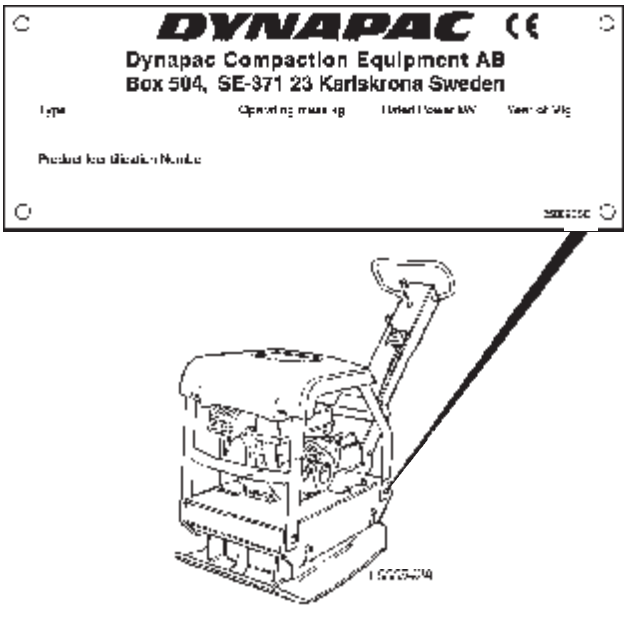
This manual contains instructions for periodic attention which should normally be carried out by the operator.

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.



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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: 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. 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.

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

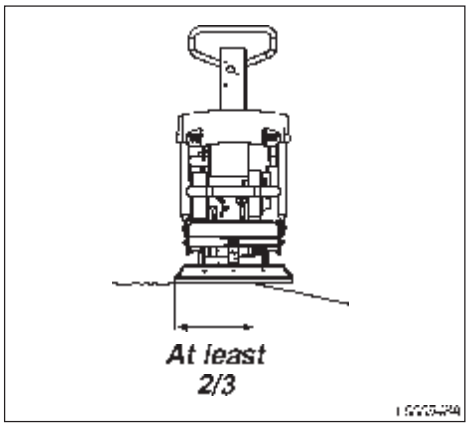
Never use a machine that is damaged. Qualified repair work requires trained personnel, please contact your nearest authorized workshop.

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.

SAFETY WHEN DRIVING

Driving near an edge



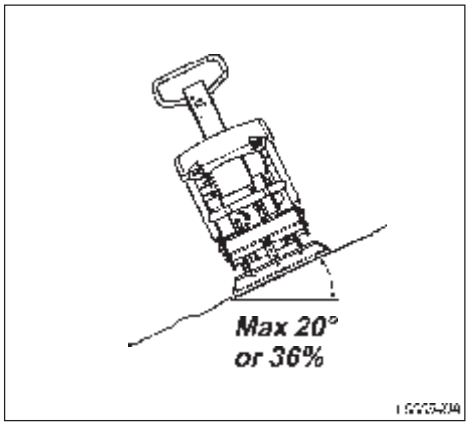
Machine location when operating on edges

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.

Tilting



Tipping angle on side slopes

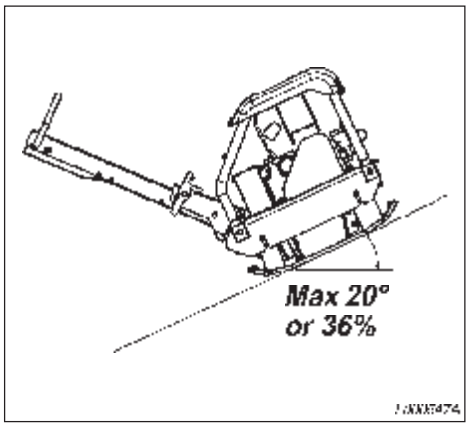
Make sure that the work site is safe. Wet and loose earth reduces manoeuvrability especially on sloping ground. Always observe particular caution on sloping and uneven terrain.

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 20° (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.

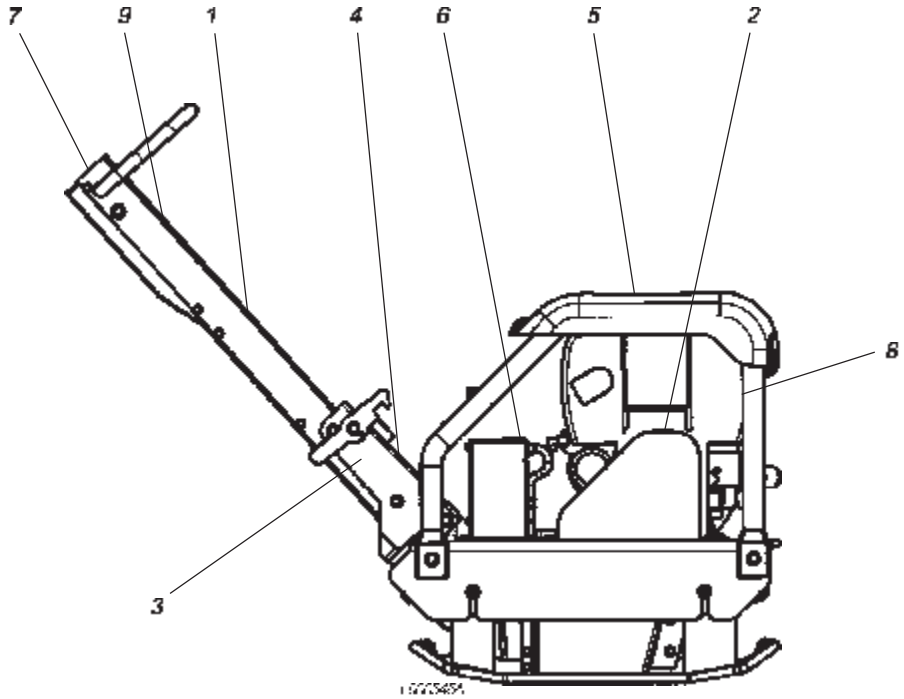


Driving on slopes

WARNING

Never leave the machine unattended with the engine running.

SAFETY DECALS, LOCATION/DESCRIPTION



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, hand and arm entanglement. Never reach into the hazardous area.

3.

Lock the handle during transport.

4.

Warning—crush zone. Keep your hands at a safe distance from the danger zone.

5.

Lifting point

6.

Hydraulic fluid level

7.

Use ear protectors

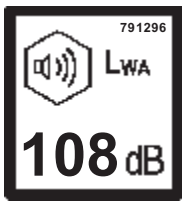
8.

Warning - hot surfaces in the engine compartment. Do not touch.

9.

Guaranteed Sound Power level (Honda)

9.



Guaranteed Sound Power level (Hatz)

FUEL AND LUBRICANTS

	**ENGINE OIL**	Use SAE 15W/40, Shell Universal Engine Oil TX15W-40 or equivalent Honda GX160 0,6 l (0.65 qts) Hatz 1B20 0,9 l (0.95 qts)
	**ECCENTRIC ELEMENT OIL**	Use SAE 15W/40, Shell Universal Engine Oil TX15W-40 or equivalent Volume: 0,5 l (0.53 qts)
	**HYDRAULIC FLUID**	Use mineral-based hydraulic fluid, Shell Tellus TX32 or equivalent Volume: 1,1 l (1.2 qts)
	**BIOLOGICAL HYDRAULIC FLUID (optional)**	Shell Naturelle HF-E46 When it leaves the factory, the machine may be filled with biologically degradable fluid. The same type of fluid must be used when changing or topping off.
	**FUEL**	**Honda** Use ordinary grade petrol (unleaded) Volume: 3,6 l (3.8 qts)
	**FUEL**	**Hatz** Use diesel oil which satisfy EN 590 or DIN 51601 Volume: 3,6 l (3.8 qts)

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

SERVICE PARTS AND ACCESSORIES

Service parts P/N

	Honda GX200	Hatz 1B20
Engine air filter element	23 93 23	93 70 13
Engine oil filter	-	93 70 01
Engine fuel filter	-	93 69 64
V-belt	28 13 45	28 13 36
Accessories		
Block paving set	28 08 95	28 08 95
Transport wheel cpl.	28 18 86	28 18 86

TECHNICAL DATA

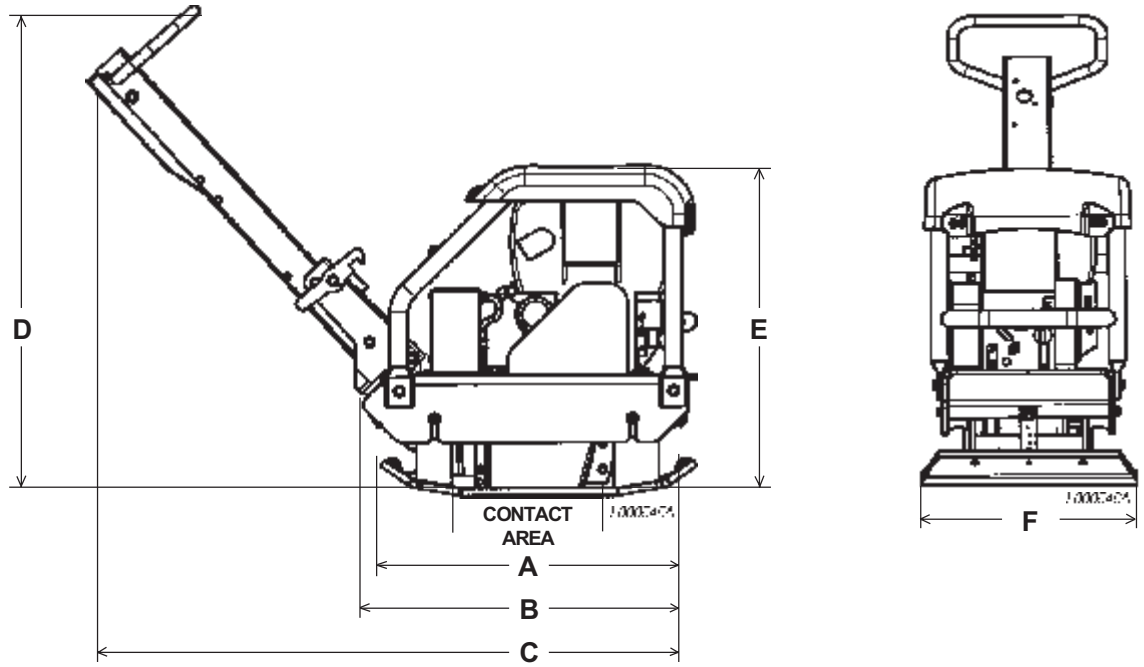
	LG200 Honda	LG200 Hatz	LG200 Hatz (el. start)
Weight			
Net weight, kg (lbs)	216 (476)	228 (503)	245 (540)
Operating weight, kg (lbs)	218 (481)	230 (507)	247 (545)
Compaction data			
Vibr.frequency, Hz (vpm)	65 (3900)	65 (3900)	65 (3900)
Centrifugal force, kN (lbf)	36 (8.1)	36 (8.1)	36 (8.1)
Amplitude, mm (in)	1,9 (0.07)	1,9 (0.07)	1,9 (0.07)
Operating data			
Speed of travel, m/min (ft/min)	0-25 (0-82)	0-25 (0-82)	0-25 (0-82)
Max. tilt, °	20	20	20
Volumes			
Fuel tank, lit. (qts)	3,6 (3.8)	3,6 (3.8)	3,6 (3.8)
Crank case, lit. (qts)	0,6 (0.65)	0,9 (0.95)	0,9 (0.95)
Hydraulic fluid, lit. (qts)	1,1 (1.2)	1,1 (1.2)	1,1 (1.2)
Eccentricelement, lit. (qts)	0,5 (0.53 qts)	0,5 (0.53 qts)	0,5 (0.53 qts)
Engine			
Model	Honda GX 200 manual start	Hatz 1B20 manual start	Hatz 1B20 el. start
Output, kW (hp)	4,7 (6.3)	3,0 (4.0)	3,0 (4.0)
Engine speed, rpm	3600	3000	3000
Fuel consumtion, l/h (qts/h)	1,2 (1.3)	0,7 (0.8)	0,7 (0.8)
Battery V/Ah			12/18
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)	105	108	108
Sound-pressure level at the operator's ear (ISO 6396) LpA dB (A)	90	90	90
Hand and arm vibration (ISO 5349-1) a_{hv} m/s^2	3,5	3,5	3,5

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

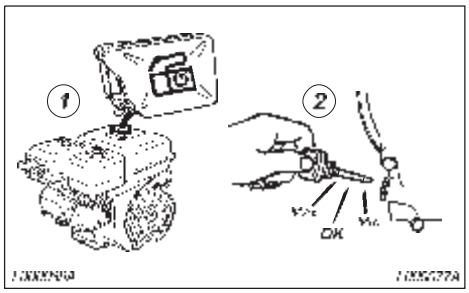
TECHNICAL DATA – DIMENSIONS



	LG200 Honda	LG200 Hatz	LG200 Hatz (el. start)
A mm (in)	705 (27.7)	705 (27.7)	705 (27.7)
B mm (in)	742 (29.2)	742 (29.2)	742 (29.2)
C mm (in)	1355 (53.3)	1355 (53.3)	1355 (53.3)
D mm (in)	1105 (43.5)	1105 (43.5)	1105 (43.5)
E mm (in)	743 (29.3)	743 (29.3)	743 (29.3)
F mm (in)	500 (19.7)	500 (19.7)	500 (19.7)
Contact area m^2 (sq feet)	0,1735 (1.9)	0,1735 (1.9)	0,1735 (1.9)

OPERATION – HONDA GX200

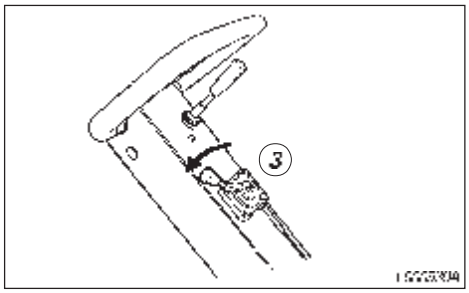
Before start



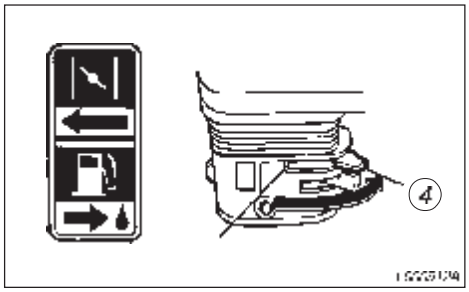
1. Fill fuel tank.
   Tank volume 3,6 lit. (3.8 qts)

2. Check oil level in engine crank case.
   Oil volume 0,6 lit. (0.65 qts)

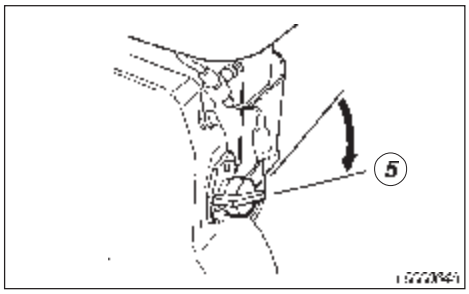
Starting the engine



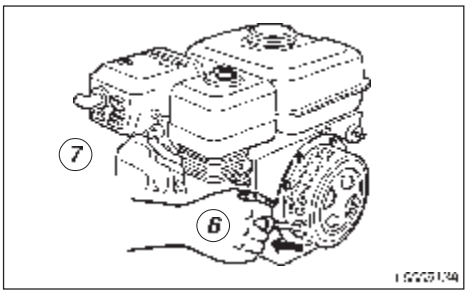
3. Open the fuel cock and open the throttle fully.



4. Open throttle fully. Move the choke valve to the close position. Do not use the choke if the engine is warm or the air temperature is high.



5. Turn the start button to position **I**.



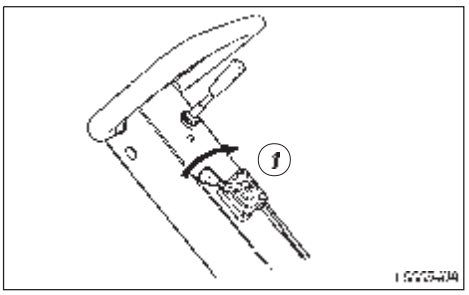
CAUTION

The plate moves backward at start.

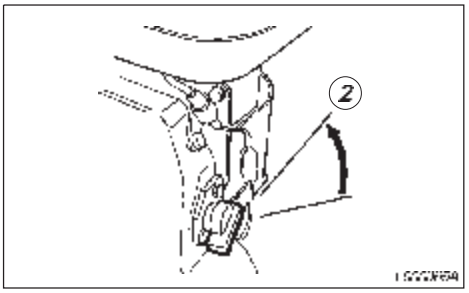
6. Pull out the handle to the point where you feel strong resistance and then return it to the initial position, then pull briskly. As the engine warms up, gradually move the choke valve to the open position.

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

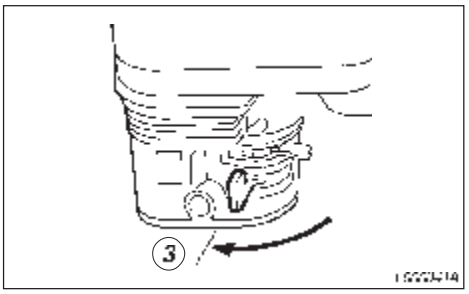
Stopping the engine



1. Throttle in neutral position. Let engine run a few minutes.



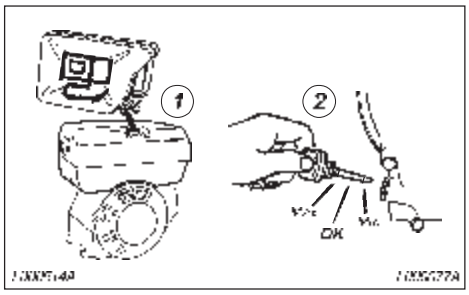
2. Turn the start button to position **O**.



3. Close the fuel cock.

OPERATION – HATZ 1B20

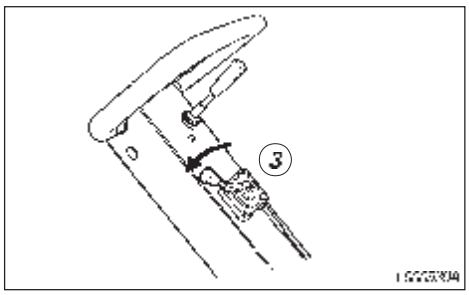
Before start



1. Fill fuel tank.
   Tank volume: 3,6 lit. (3.8 qts)

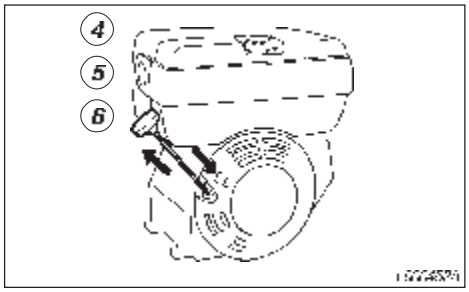
2. Check oil level in engine crank case.
   Oil volume: 1,0 lit. (1.06 qts)

Starting the engine



3. Set speed control lever either 1/2 START or max. START position, as desired or necessary. Starting at a lower speed will help to prevent exhaust smoke.

CAUTION The plate moves backward at start.



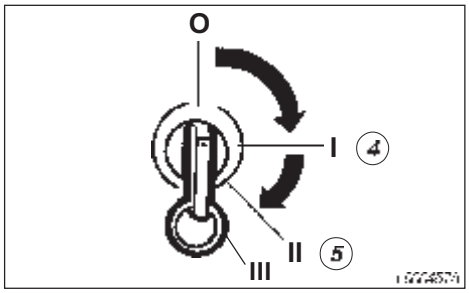
Manual start

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.



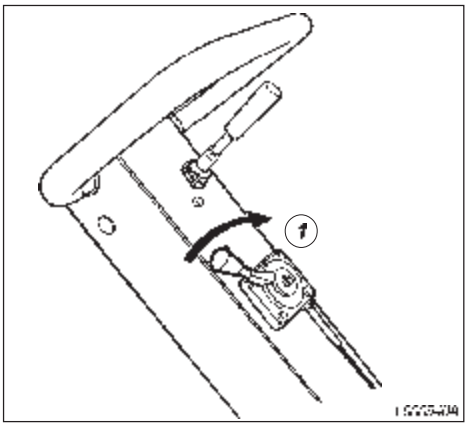
El. start

4. Insert the starter key and turn it to position **I**. Charging and oil pressure indicators light up.

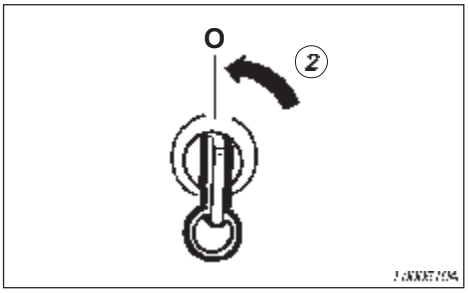
5. Turn the starter key through position **II** to **III**. Re lease the key as soon as the engine runs.

CAUTION Make sure that the key remains at position **II** so that the battery is charged.

Stopping the engine



1. Throttle in neutral position. Let the engine idle a few minutes.



El. start

2. Turn the starter key to position **O** and remove it. All indicator lights must go out.

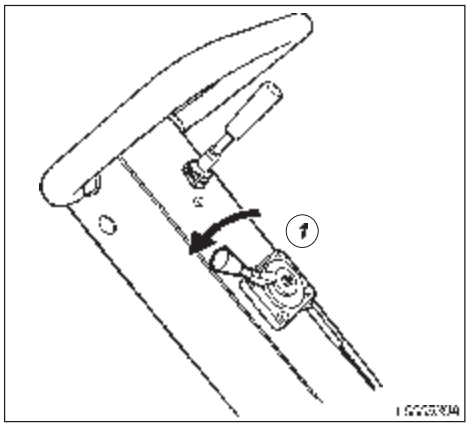
CAUTION

The ignition key must be turned to **O**, or else the machine will consume electric power.

WARNING

Always remove the key when you leave the machine, and keep it in a safe place. This will make it difficult for any unauthorized person to start and drive the machine.

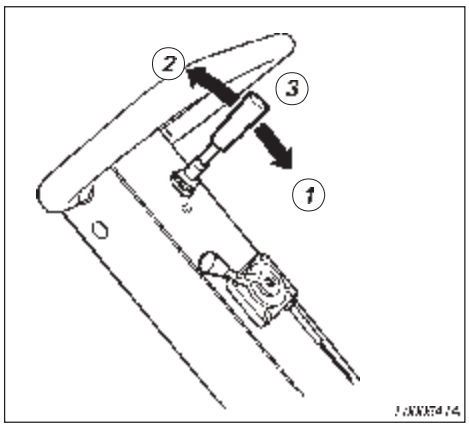
Operating



1. Open throttle fully.

CAUTION

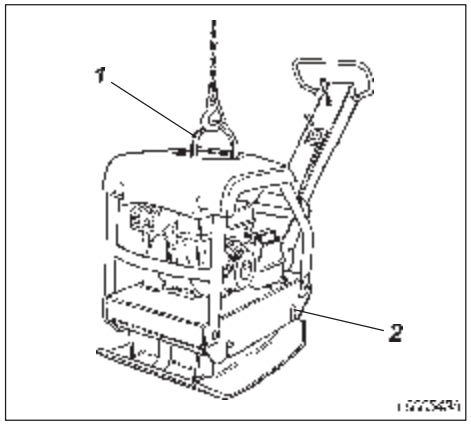
During compaction work the engine must always run at full throttle.



Drive direction and speed are infinetely variable with the hydraulic lever.

1. Forward (the hydraulic lever is pushed forward with small movements).
2. Reverse (the hydraulic lever is pushed backwards with small movements).
3. Stationary (the hydraulic lever is moved with small movements in the opposite direction until the machine is stationary).

Lifting/Towing



Machine ready for lifting
1. Lifting hook
2. Rubber element

WARNING

Never walk or stand underneath a hoisted machine

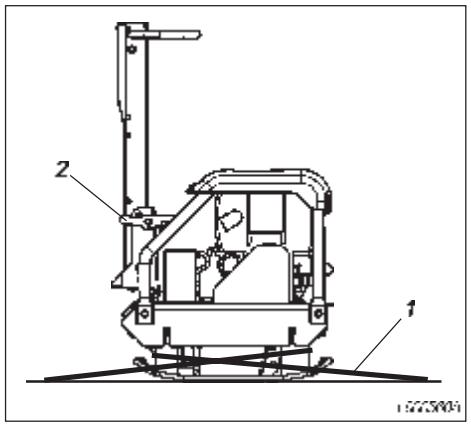
CAUTION

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

CAUTION

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

Transportation



Machine ready for transportation
1. Lashing strap
2. Locking device

WARNING

Always secure the machine firmly during all transportation. Place lashing band in a U shape around the bottom plate and secure both front and rear

WARNING

Locking handle (2).

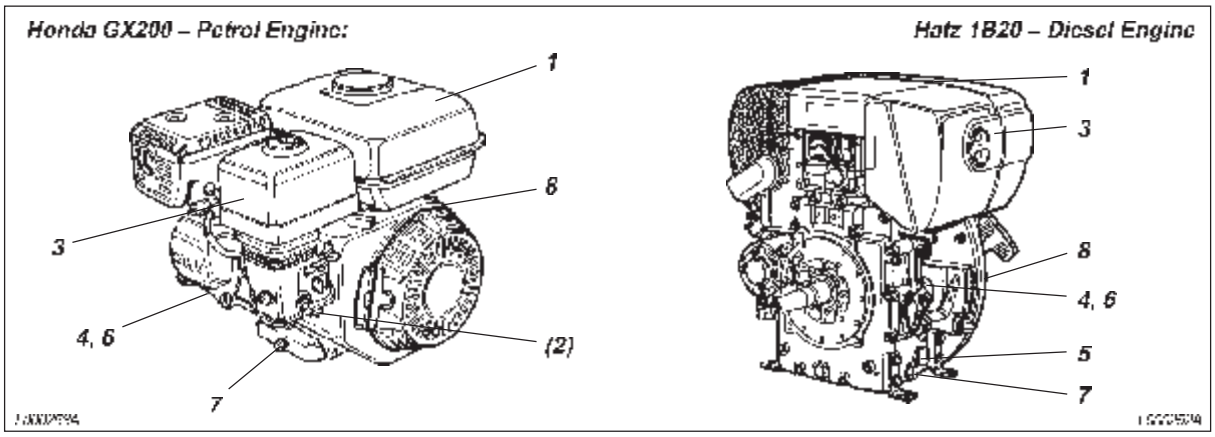


Fig. 1 Honda GX200 – Hatz 1B20

1. *Fuel tank*
2. *Fuel filter*
3. *Air filter*
4. *Engine oil*
5. *Engine oil filter*
6. *Oil dipstick*
7. *Oil drain plug*
8. *Engine cooling system*

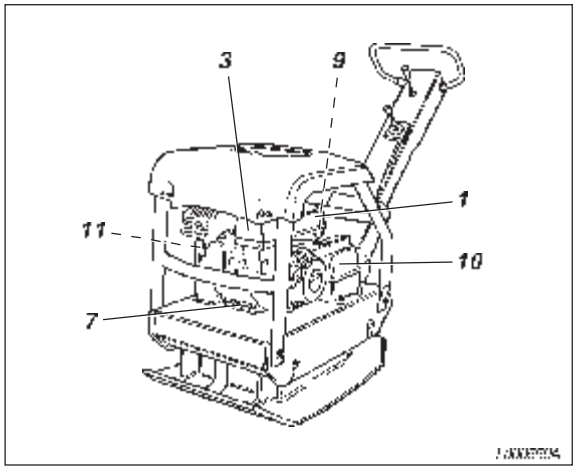


Fig. 2 LG200

1. *Fuel tank*
3. *Air filter*
7. *Oil drain plug*
9. *Battery*
10. *Hydraulic reservoir*
11. *V-belt*

Every 10 hours of operation (daily)

Item in fig. 1	Maintenance	see page	Comments
1	Check and replenish fuel	13/15	
4	Check and replenish lube oil	21	
	Check for oil leakage	21	
	Check and tighten engine parts	21	
3	Clean / replace air cleaner elements	21	

MAINTENANCE – SERVICE POINTS

The first 20 hours of operation

Item in fig. 1	Maintenance	see page	Comments
4	Change lube oil	22	
5	Clean / replace oil filter	22	
3	Clean / replace air cleaner elements	22	
	Check and adjust the engine valve clearance		See engine manual.

Every 200 hours of operation

Item in fig. 1	Maintenance	see page	Comments
10	Check oil level in hydraulic reservoir	22	
11	Check V-belt	22	
4	Change lube oil	22	
3	Clean / replace air cleaner elements	21	See engine manual.

Every 500 hours of operation (Atleast once a year)

Item in fig. 1	Maintenance	see page	Comments
4	Change engine oil	22	
	Change eccentric element oil	24	
	Change hydraulic fluid	24	
5	Clean / replace oil filter (diesel)	22	
	Check fuel injection pump (diesel)		See engine manual.
	Check fuel injection nozzle (diesel)		See engine manual.
	Adjust valve head clearance for intake and exhaust valves		See engine manual.

Battery charging

Use a voltage-regulated battery charger (constant voltage). A switched two-stage charger with 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:

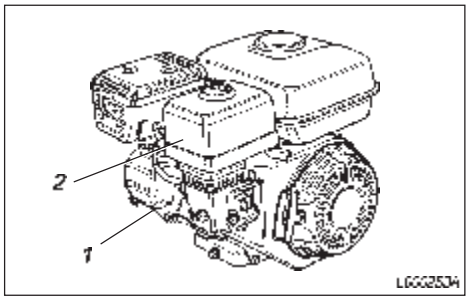
Optima Model RTC 12/7-S-230
LADAC Model LADAC 512
Tudor Model 61715 Tudor

Storage/Trickle charging

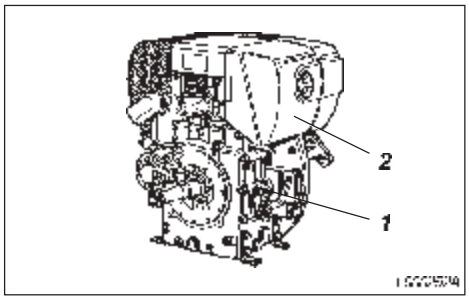
A discharged battery will freeze at a temperature of about 28.5°F (–7°C). A fully charged battery will freeze at –88°F (–67°C). A battery that is not being used should be fully charged before being put aside. Trickle charging is not normally required during a period of 6 to 8 months. If a battery has not been in use for a long period, it is recommended that it be fully charged before being used. Trickle charging is recommended a couple of times during the season (especially in winter).

MAINTENANCE – EVERY 10 HOURS OF OPERATION

Engine – Checking the oil level – Checking/Cleaning the air filter



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



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

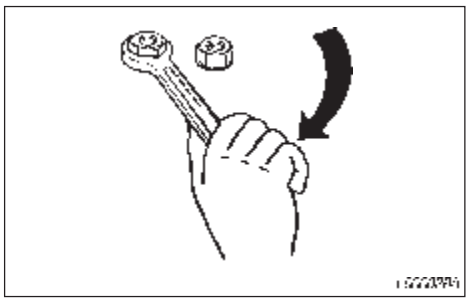
Check oil level (1) engine's crankcase.

Check air cleaner (2).

Check the battery (Hatz electric starter).

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

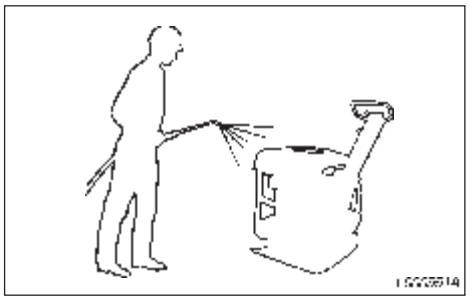
Bolted joints – Check



Control tighten bolts

Check and, where necessary, tighten screws and nuts.

Washing (high pressure)



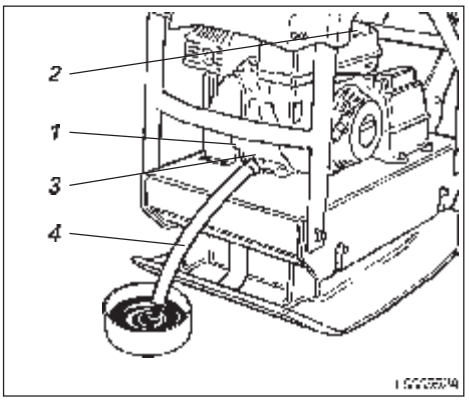
Washing the machine

Keep machine clean.

CAUTION

Never aim a water jet directly at the cap of the fuel tank or hydraulic reservoir. This is especially important when using a high-pressure jet.

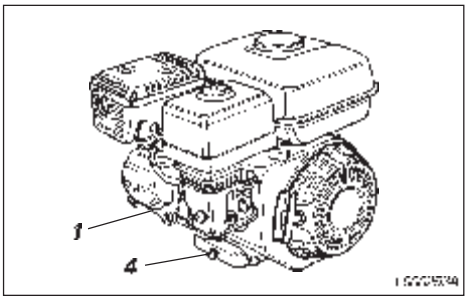
Do not spray water directly on electric components or the instrument panel. Put a plastic bag over the filler cap of the fuel tank and secure with a rubber band. This will prevent water from entering the venting hole in the filler cap. This could otherwise cause operational disturbance, for example, a clogged filter.



1. Oil dipstick
2. Fuel filter
3. Oil filter
4. Oil drain plug/drain hose

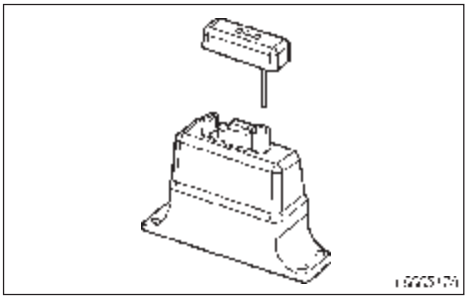
Change oil (first change after 20 hours, together with engine filter).
Honda GX200: 0,6 l (0.65 qts)
Hatz 1B20: 0,9 l (0.95 qts)

Save the oil and deposit it in an approved manner.



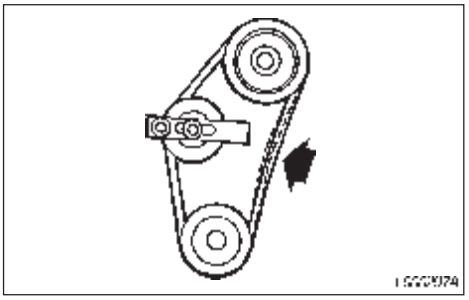
Lubricate controls.

Hydraulic fluid level – Checking/Filling



Check oil level in hydraulic reservoir.
Volume: 1,1 l (1.2 qts)

V-belt – Checking

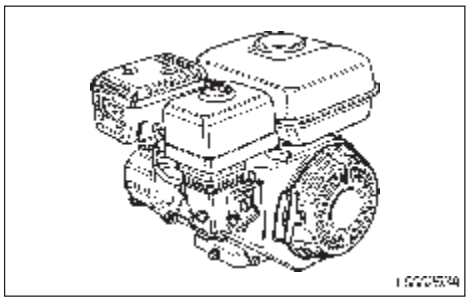


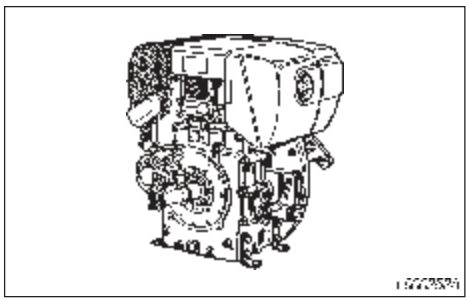
Check the V-belt.

WARNING

Never run the machine without the protective cover over the V belt.

MAINTENANCE – EVERY 500 HOURS OF OPERATION





Replace fuel filter. (See engine manual)

Change oil. (See engine manual)

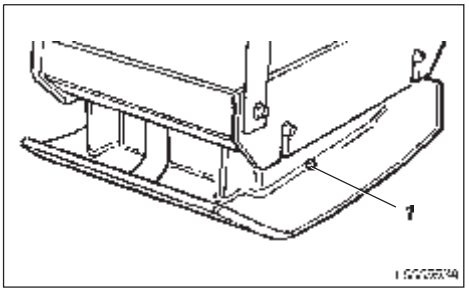
Replace oil filter. (See engine manual)

Replace air cleaner element. (See engine manual)

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

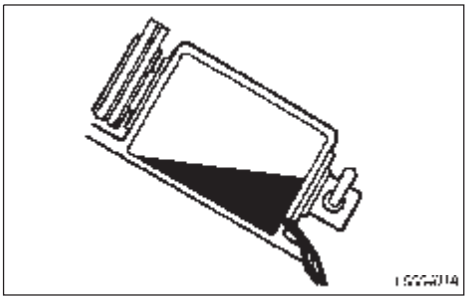
MAINTENANCE – EVERY 500 HOURS OF OPERATION

Changing oil in eccentric element



1. Oil drain/filler plug

Recommended oil: SAE 15W/40
Volume: 0,5 l (0.52 qts)



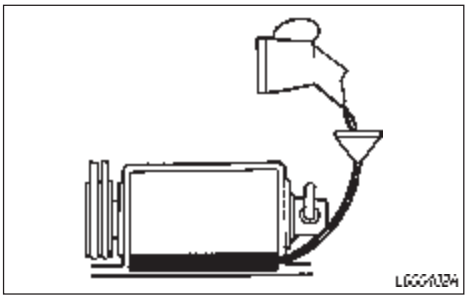
1. Slant the machine and drain oil from eccentric.

Save the oil and deposit it in an approved manner.

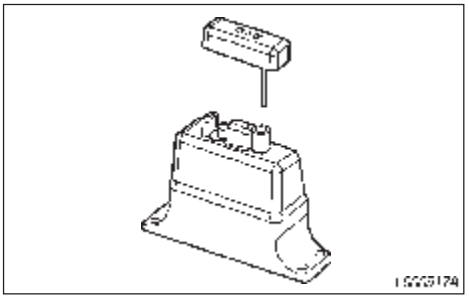
2. Clean sealing surfaces.

3. Fill with oil.

4. Tighten oil plug.



Changing oil in hydraulic system



Recommended oil: Shell Tellus TX32
Volume: 1,1 l (1.2 qts)

Save the oil and deposit it in an approved manner.

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