





LG 504

EN Operator's manual

2-23



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## Introduction

## California Proposition 65



## WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

## **Product description**

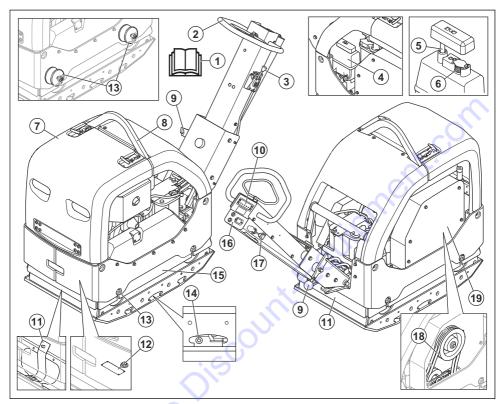
The product is a walk-behind reversible plate compactor for compaction of granular soils in moderately thick layers to layers of larger depth.

and parking lots. With the optional block paving kit the product can also be used for block paving. Do not use the product for other tasks.

#### Intended use

The product is for professional operation only. Use the product for repairs and maintenance of driveways, paths

#### **Product overview**



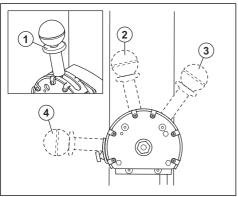
- 1. Operator's manual
- 2. Handle
- 3. Throttle control
- 4. Hydraulic oil tank
- 5. Hydraulic oil dipstick
- 6. Breather filter
- 7. Safety frame
- 8. Lifting eye
- 9. Lock lever for the handle
- 10. Compaction indicator
- 11. Safety straps
- 12. Type plate
- 13. Vibration damping units

**Note:** There are also 6 vibration damping units between the handle and the engine plate. Refer to *To do a check of the vibration damping units on page 8.* 

- 14. Oil plug for the eccentric element
- 15. Eccentric element

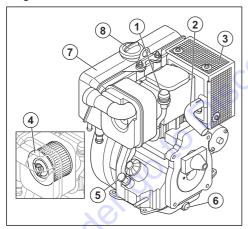
- 16. Hour meter and indicators for battery charge and engine oil pressure
- 17. Ignition key
- 18. V-belt
- 19. V-belt cover

# EPA (US Environmental Protection Agency) throttle control



- 1. Position lock
- 2. Start position and idle speed position
- 3. Stop position
- 4. Operation position, full throttle

## **Engine overview**



- 1. Air filter indicator
- 2. Exhaust pipe
- 3. Muffler
- 4. Air filter
- 5. Oil tank cap and dipstick
- 6. Drain plug for engine oil
- 7. Fuel tank
- 8. Fuel tank cap

## Symbols on the product



Be careful and use the product correctly. This product can cause serious injury or death to the operator or others.



Read the manual carefully and make sure that you understand the instructions before you use the product.



Read the manual carefully and make sure that you understand the instructions before you use the product.



Use hearing protection



Use protective boots.



Ultra-low-sulfur diesel fuel only.



Manual start.



Electrical start.



Hydraulic oil level.



Biological hydraulic oil.



The vibrations start. Symbol for a position of the throttle control.



The battery charges.

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Hour meter.



Engine oil pressure.



Risk of injury. Be careful around the drive



Risk of injury if the handle falls on you. Lock the handle in the lifted position.



Hot surface.



Lifting point on the safety frame.



Noise emission to the environment as referred to in the EC directive. The emission of the product is specified in Technical data on page 20 and on the label.



This product is in compliance with applicable EC directives.



Move the product forward.





Move the product rearward.

Note: Other symbols/decals on the product refer to special certification requirements for some markets.

#### Type plate



- Product type
- 2. Product number
- 3. Product weight
- Serial number
- Manufacturer
- 6. Rated power
- Production year

## Product liability

As referred to in the product liability laws, we are not liable for damages that our product causes if:

- the product is incorrectly repaired.
- the product is repaired with parts that are not from the manufacturer or not approved by the manufacturer.
- the product has an accessory that is not from the manufacturer or not approved by the manufacturer.
- the product is not repaired at an approved service center or by an approved authority.

## Safety

## Safety definitions

Warnings, cautions and notes are used to point out specially important parts of the manual.



WARNING: Used if there is a risk of injury or death for the operator or bystanders if the instructions in the manual are not obeyed.



CAUTION: Used if there is a risk of damage to the product, other materials or the adjacent area if the instructions in the manual are not obeyed.

Note: Used to give more information that is necessary in a given situation.

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#### General safety instructions



**WARNING:** Read the warning instructions that follow before you use the product.

- This product is a dangerous tool if you are not careful or if you use the product incorrectly. This product can cause serious injury or death to the operator or others. Before you use the product, you must read and understand the contents of this operator's manual.
- · Save all warnings and instructions.
- · Comply with all applicable laws and regulations.
- The operator and the employer of the operator must know and prevent the risks during operation of the product.
- Do not let a person operate the product unless they read and understand the contents of the operator's manual.
- Do not operate the product unless you receive training before use. Make sure that all operators receive training.
- · Do not let a child operate the product.
- Only let approved persons operate the product.
- The operator is responsible for accidents that occur to other persons or their property.
- Do not use the product if you are tired, ill, or under the influence of alcohol, drugs or medicine.
- Always be careful and use your common sense.
- This product produces an electromagnetic field during operation. This field can under some circumstances interfere with active or passive medical implants. To decrease the risk of serious injury or death, we recommend persons with medical implants to speak to their physician and the medical implant manufacturer before operating this product.
- Keep the product clean. Make sure that you can clearly read signs and decals.
- Do not use the product if it is defective.
- Do not do modifications to this product.
- Do not operate the product if it is possible that other persons have done modifications to the product.

## Safety instructions for operation



**WARNING:** Read the warning instructions that follow before you use the product.

- Make sure that you know how to stop the engine quickly in an emergency.
- The operator must have the physical strength that is necessary to operate the product safely.
- Do not operate the product without all protective covers installed.
- Use personal protective equipment. Refer to Personal protective equipment on page 7.

- Make sure that only approved persons are in the work area
- · Keep the work area clean and bright.
- Make sure that you are in a safe and stable position during operation.
- Make sure that there is no risk that you or the product can fall from a height.
- Make sure that there is no grease or oil on the handle.
- Do not use the product in areas where fire or explosions can occur.
- The product can cause objects to eject at high speed. Make sure that all persons in the work area use approved personal protective equipment. Remove loose objects from the work area.
- Before you go away from the product, stop the engine and make sure that there is no risk of accidental start.
- Make sure that clothes, long hair and jewelry do not get caught in moving parts.
- · Do not sit on the product.
- · Do not hit the product.
- Always operate the product from behind with your hands on the handle.
- Do not operate the product near electrical cables.
   The product does not have electrical insulation and injury or death can occur.
- Before you operate the product, find out if there are hidden wires, cables and pipes in the work area. If the product hits a hidden object, stop the engine immediately and examine the product and the object. Do not start to operate the product again until you know that it is safe to continue.

#### Vibration safety



**WARNING:** Read the warning instructions that follow before you use the product.

- During operation of the product, vibrations go from the product to the operator. Regular and frequent operation of the product can cause or increase the degree of injuries to the operator. Injuries can occur in fingers, hands, wrists, arms, shoulders, and/or nerves and blood supply or other body parts. The injuries can be debilitating and/or permanent, and can increase gradually during weeks, months or years. Possible injuries include damage to the blood circulation system, the nervous system, joints, and other body structures.
- Symptoms can occur during operation of the product or at other times. If you have symptoms and continue to operate the product, the symptoms can increase or become permanent. If these or other symptoms occur, get medical aid:
  - Numbness, loss of feeling, tingling, pricking, pain, burning, throbbing, stiffness, clumsiness,

loss of strength, changes in skin color or condition

- Symptoms can increase in cold temperatures. Use warm clothing and keep your hands warm and dry when you operate the product in cold environments.
- Do maintenance on and operate the product as given in the operator's manual, to keep a correct vibration level.
- The product has a vibration damping system that decreases the vibrations from the handles to the operator. Let the product do the work. Do not push the product with force. Hold the product at the handles lightly, but make sure that you control the product and operate it safely. Do not push the handles into the end stops more than necessary.
- Keep your hands on the handle or handles only.
   Keep all other body parts away from the product.
- Stop the product immediately if strong vibrations suddenly occurs. Do not continue the operation before the cause of the increased vibrations is removed.

#### **Dust safety**



**WARNING:** Read the warning instructions that follow before you use the product.

- Operation of the product can cause dust in the air.
   Dust can cause serious injury and permanent health problems. Silica dust is regulated as harmful by several authorities. These are examples of such health problems:
  - The fatal lung diseases chronic bronchitis, silicosis and pulmonary fibrosis
  - Cancer
  - Birth defects
  - Skin inflammation
- Use correct equipment to decrease the quantity of dust and fumes in the air and to decrease dust on work equipment, surfaces, clothing and body parts.
   Examples of controls are dust collection systems and water sprays to bind dust. Decrease dust at the source where possible. Make sure that the equipment is correctly installed and used and that regular maintenance is done.
- Use approved respiratory protection. Make sure that the respiratory protection is applicable for the dangerous materials in the work area.
- Make sure that the airflow is sufficient in the work area.
- If it is possible, point the exhaust of the product where it cannot cause dust to go into the air.

#### Exhaust fumes safety



**WARNING:** Read the warning instructions that follow before you use the product.

- The exhaust fumes from the engine contain carbon monoxide which is an odourless, poisonous and very dangerous gas. To breathe carbon monoxide can cause death. Because carbon monoxide is odourless and cannot be seen, it is not possible to sense it. A symptom of carbon monoxide poisoning is dizziness, but it is possible that a person becomes unconscious without warning if the quantity or concentration of carbon monoxide is sufficient.
- Exhaust fumes also contain unburned hydrocarbons including benzene. Long-term inhalation can cause health problems.
- Exhaust fumes that you can see or smell also contain carbon monoxide.
- Do not use a combustion engine product indoors or in areas that do not have sufficient airflow.
- · Do not breathe the exhaust fumes.
- Make sure that the airflow in the work area is sufficient. This is very important when you operate the product in trenches or other small work areas where exhaust fumes can easily collect.

#### Noise safety



**WARNING:** Read the warning instructions that follow before you use the product.

- High noise levels and long-term exposure to noise can cause noise-induced hearing loss.
- To keep the noise level to a minimum, do maintenance on and operate the product as given in the operator's manual.
- Examine the muffler for damages and defects. Make sure that the muffler is correctly attached to the product.
- Use approved hearing protection while you operate the product.
- Listen for warning signals and voices when you use hearing protection. Remove the hearing protection when the product is stopped, unless hearing protection is necessary for the noise level in the work area.

#### Personal protective equipment



**WARNING:** Read the warning instructions that follow before you use the product.

- Always use approved personal protective equipment when you operate the product. Personal protective equipment cannot fully prevent injury but it decreases the degree of injury if an accident does occur. Let your dealer help you select the correct personal protective equipment.
- Regularly do a check of the condition of the personal protective equipment.
- · Use an approved protective helmet.
- Use approved hearing protection.

- Use approved respiratory protection.
- · Use approved eye protection with side protection.
- Use protective gloves.
- · Use boots with steel toe-cap and non-slip sole.
- Use approved work clothing or equivalent closefitting clothing that has long sleeves and long legs.

#### Fire extinguisher

- · Keep a fire extinguisher near during operation.
- Use a powder fire extinguisher of "ABE" class or a carbon dioxide fire extinguisher of "BE" type.

#### Safety devices on the product



**WARNING:** Read the warning instructions that follow before you use the product.

- Do not use a product with defective safety devices.
- Do a check of the safety devices regularly. If the safety devices are defective, speak to Discountequipment.

#### Muffler

The muffler keeps the noise levels to a minimum and sends the exhaust fumes away from the operator.

Do not use the product if the muffler is missing or defective. A defective muffler increases the noise level and the risk of fire.



WARNING: The muffler becomes very hot during and after use and when the engine operates at idle speed. Be careful near flammable materials and/or fumes to prevent fire.

#### To do a check of the muffler

 Examine the muffler regularly to make sure that it is attached correctly and not damaged.

#### Safety frame

The safety frame prevents damage to the product if it falls.

#### To do a check of the safety frame

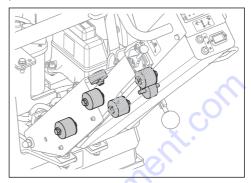
- Make sure that there are no cracks or other damages on the safety frame.
- Make sure that the safety frame is correctly installed on the product.

#### Vibration damping units

The vibration damping units decrease vibration in the product. The vibration damping units decrease harmful vibrations to prevent injury to the operator and damage to the product.

#### To do a check of the vibration damping units

There are 10 vibration damping units, 2 on each side of the product, and 6 between the handle and the engine plate.



- Make sure that the vibration damping units are correctly installed.
- Examine the vibration damping units for damages and wear
- Replace the vibration damping units if it is necessary.

#### Fuel safety



**WARNING:** Read the warning instructions that follow before you use the product.

- Fuel is flammable and the fumes are explosive. Be careful with fuel to prevent injury, fire and explosion.
- Do not breathe in the fuel fumes. The fuel fumes are poisonous and can cause injury. Make sure that the airflow is sufficient.
- Do not remove the fuel tank cap or fill the fuel tank when the engine is on.
- Let the engine become cool before you refuel.
- Do not fill fuel in an indoor area. Not sufficient airflow can cause injury or death because of asphyxiation or carbon monoxide.
- Do not smoke near the fuel or the engine.
- Do not put hot objects near the fuel or the engine.
- Do not fill fuel near sparks or flames.
- Before you refuel, open the fuel tank cap slowly and release the pressure carefully.
- Fuel on your skin can cause injury. If you get fuel on your skin, use soap and water to remove the fuel.
- If you spill fuel on your clothing, change clothing immediately.
- Do not fill the fuel tank fully. Heat causes the fuel to expand. Keep a space at the top of the fuel tank.
- Tighten the fuel tank cap fully. If the fuel tank cap is not tightened, there is a risk of fire.
- Before you start the product, move the product to a minimum of 3 m/10 ft from where you refueled.

- Do not start the product if there is fuel or engine oil on the product. Remove the unwanted fuel and engine oil and let the product dry before you start the engine.
- Examine the engine for leaks regularly. If there are leaks in the fuel system, do not start the engine until the leaks are repaired.
- Do not use your fingers to examine the engine for leaks.
- Keep fuel in approved containers only.
- When the product and fuel is in storage, make sure that fuel and fuel fumes cannot cause damage.
- Drain the fuel in an approved container outdoors and away from sparks and flames.

#### **Battery safety**



**WARNING:** A damaged battery can cause an explosion and cause injury. If the battery has a deformation or is damaged, speak to Discount-equipment.



**WARNING:** Read the warning instructions that follow before you use the product.

- · Use protective glasses when you are near batteries.
- Do not wear watches, jewelry or other metal objects near the battery.
- · Keep the battery out of reach for children.
- Charge the battery in a space with good airflow.
- Keep flammable materials at a minimum clearance of 1 m when you charge the battery.
- Discard replaced batteries. See Disposal on page 20.
- Explosive gases can come from the battery. Do not smoke near the battery. Keep the battery away from open flames and sparks.

#### Safety instructions for operation on slopes



**WARNING:** Read the warning instructions that follow before you use the product.

- Do not operate the product on a slope that is more than 20°. Loose ground, vibrations and the operation speed can cause the product to fall on a slope that is less than 20°.
- Make sure that the work area is safe. Wet and loose soil decreases safe operation of the product. Be very careful on slopes and rough surfaces.
- Make sure that all persons in the work area are above the product on the slope.
- Operate the product up and down the slope, not from side to side.
- Do not park the product on a slope. If you must park the product on a slope, make sure that the product cannot fall. There is a risk of injury and damage.

#### Safety instructions for operation near edges



**WARNING:** Read the warning instructions that follow before you use the product.

- If the product falls, stop the engine before you lift the product back to a surface that is sufficiently stable.
   Refer to To lift the product on page 19.

#### Safety instructions for maintenance



**WARNING:** Read the warning instructions that follow before you use the product.

- If the maintenance is not done correctly and regularly, the risk of injury and damage to the product increases.
- Use personal protective equipment. Refer to Personal protective equipment on page 7.
- Stop the engine and make sure that all parts of the product are cool before you do the maintenance.
- Clean the product to remove dangerous material before you do the maintenance.
- Disconnect the spark plug cap before you do the maintenance.
- The exhaust fumes from the engine are hot and can contain sparks. Do not operate the product in indoor areas or near flammable material.
- Do not change the product. Modifications that are not approved by the manufacturer, can cause serious injury or death.
- Always use original accessories and spare parts.
   Accessories and spare parts that are not approved
   by the manufacturer, can cause serious injury or
   death.
- · Replace damaged, worn or broken parts.
- Only do the maintenance as given in this operator's manual. Let an approved service center do all other servicing.
- Remove all tools from the product before you start the engine after maintenance. Loose tools or tools attached to rotating parts can eject and cause injury.
- After maintenance, do a check of the vibration level in the product. If it is not correct, speak to an approved service center.
- Let an approved service center do servicing on the product regularly.

## Operation

#### Introduction



**WARNING:** Read and understand the safety chapter before you use the product.

## To do before you operate the product

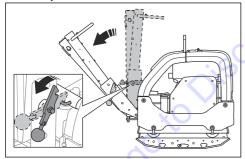
- Read the operator's manual carefully and make sure that you understand the instructions.
- Read the engine manual that is supplied by the engine manufacturer.
- Do the daily maintenance. Refer to Maintenance schedule on page 13.

## To set the handle to operation position



**WARNING:** Hold the handle tightly when you change the position of the handle. There is a risk of injury if the handle falls on you.

- 1. Hold the handle.
- Release the lock lever and lower the handle carefully.



## To start and stop the product

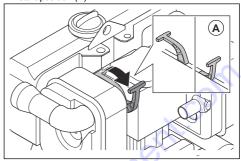


**WARNING:** Keep your feet away from the product during the start procedure. The hydraulic system can cause the product to move suddenly when the engine starts.

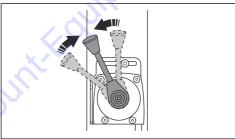
## To start the product manually

Do this procedure if the product has an engine with manual start.

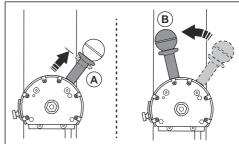
1. Pull the lever for the decompression valve to the start position (A).



- 2. Set the throttle control to idle speed.
  - a) For products with a throttle control that is not EPA:

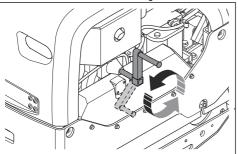


b) For products with EPA throttle control: Pull the position stop (A) up, and move the throttle control to idle speed (B). Make sure that the throttle control locks in the position.



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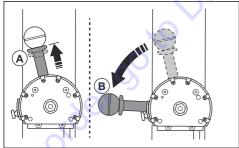
3. Turn the start handle until the engine starts.



- 4. Let the engine operate at idle speed for 2-3 minutes.
- 5. Apply full throttle.
  - a) For products with a throttle control that is not EPA:



b) For products with EPA throttle control: Pull the position stop (A) up, and move the throttle control to full throttle (B). Make sure that the throttle control locks in the position.

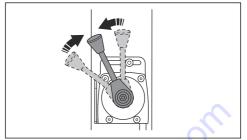


#### To start the product with electrical start

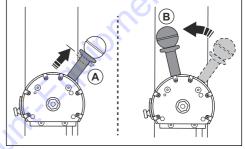
Do this procedure if the product has an engine with electrical start.

1. Set the throttle control to idle speed.

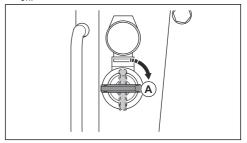
 a) For products with a throttle control that is not EPA:



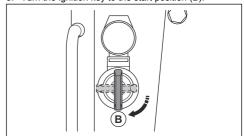
b) For products with EPA throttle control: Pull the position stop (A) up, and move the throttle control to idle speed (B). Make sure that the throttle control locks in the position.



Turn the ignition key to the ignition position (A). The indicators for battery charge and oil pressure come on



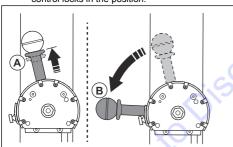
3. Turn the ignition key to the start position (B).



- a) When the engine starts, immediately release the ignition key. The ignition key goes back to position (A).
- b) If the engine does not start in 10 seconds, release the ignition key and wait 5 seconds before you try again.
- 4. Let the engine operate at idle speed for 2-3 minutes.
- 5. Apply full throttle.
  - a) For products with a throttle control that is not EPA:



b) For products with EPA throttle control: Pull the position stop (A) up, and move the throttle control to full throttle (B). Make sure that the throttle control locks in the position.

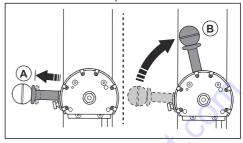


#### To stop the product

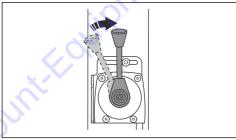
- 1. Park the product on level ground.
- 2. Set the throttle control to idle speed.
  - a) For products with a throttle control that is not EPA:



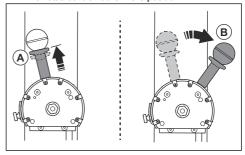
b) For products with EPA throttle control: Pull the position stop (A) up, and move the throttle control to idle speed (B). Make sure that the throttle control locks in the position.



- 3. Let the engine operate at idle speed for 2-3 minutes.
- 4. Move the throttle control to the stop position.
  - a) For products with a throttle control that is not EPA:



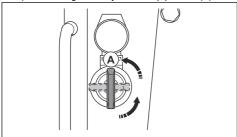
b) For products with EPA throttle control: Pull the position stop (A) up, and move the throttle control to the stop position (B). Make sure that the throttle control locks in the position.



If the engine has an electrical start, do also these steps:

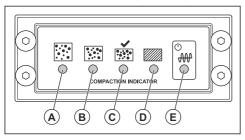
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a) Turn the ignition key to the stop position (A).



b) Remove the ignition key to prevent accidental

## Compaction indicator (optional)



- A: Yellow LED. The degree of compaction is 0-30%.
- B: Yellow LED. The degree of compaction is 30-
- C: Green LED. The degree of compaction is 60-
- C and D: Green and red LED. When these LED indicators flash, the ground surface has the maximum degree of compaction that is applicable for the product.
- D: Red LED. The degree of compaction is 90–100%.

**CAUTION:** Do not operate the product when the LED indicator (D) is on with a constant red light. This causes wear to the product.

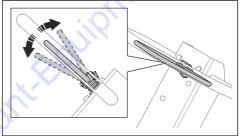
E: Red or green. Power supply indicator.

When you turn the ignition key, a calibration of the compaction indicator starts. All LED indicators (A) to (E) come on. After approximately 4 seconds, the LED indicator (E) changes from red to green and the LED indicators (A) to (D) go off. When the LED indicators (A) to (D) are off and the LED indicator (E) is green, you can start the product.

## To operate the product

Always operate the product with the throttle control set to full throttle.

To operate the product forward, move the operation control fully forward and release it.



- To operate the product rearward, move the operation control fully rearward and release it.
- To stop the movement of the product, move the operation control in the opposite direction in small movements until the product is stationary.
- To change direction, turn the product around by the handle.

## Maintenance

#### Introduction



WARNING: Read and understand the safety chapter before you do maintenance on the product.

#### Maintenance schedule

\* = General maintenance done by the operator. The instructions are not given in this operator's manual.

X = The instructions are given in this operator's manual.

O = Refer to the instructions in the engine manual supplied by the engine manufacturer.

General product maintenance	Before use, each 10 h	Each 100 h	Each 6 months or 250 h	Yearly, each 500 h
Make sure that there are no fuel or oil leaks.	*			

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General product maintenance	Before use, each 10 h	Each 100 h	Each 6 months or 250 h	Yearly, each 500 h
Clean the product.	Х			
Make sure that nuts and screws are tightened.	*			
Examine the throttle control and the forward and reverse control for damage.	*			
Make sure that the throttle control and the forward and reverse control can move smoothly.	*			
Lubricate the controls and linkages.	*			
Examine the safety straps for damage. Replace if it is necessary.	*		X	Ċ
Examine the vibration damping units for damage.		Х	Х	Х
Examine the tension of the V-belt and look for damages. Adjust or replace the V-belt as necessary.		Х	X	Х
Examine all rubber hoses and rubber elements for damage. Replace if it is necessary.		111	Х	Х
Do a check of the hydraulic oil level.			Х	Х
Do a check of the battery terminals.			*	*
Replace the oil in the eccentric element.	~~		Х	Х
Replace the hydraulic oil.				Х

Engine maintenance	Before use, each 10 h	After the first 20 h	Each 250 h	Yearly, each 500 h
Do a check of the fuel level and the engine oil level.	Х			
Clean the cooling fins of the engine.	0		0	0
Examine the air filter indicator. Clean the air filter if it is necessary.	Х	Х		
Replace the air filter.			Х	Х
Do a check of the drain valve for the air filter. Only applicable for engines that have a cyclone precleaner.	0			
Replace the engine oil.		0	0	0
Do a check of the engine speed.		0	0	0
Drain and clean the fuel tank and clean the fuel filter.				0
Adjust the valve head clearance for the air intake and the exhaust valves.		0	0	0
Replace the oil filter.			0	0
Do a check of the fuel injection pump.				0
Do a check of the fuel injection nozzle.				0

Engine maintenance	Before use, each 10 h	After the first 20 h	Each 250 h	Yearly, each 500 h
Drain water from the fuel system.				0
Replace the fuel filter.				0

## To clean the product



**CAUTION:** Before you clean the product, attach a plastic bag tightly around the fuel tank cap. This is to make sure that water does not go into the venthole in the fuel tank cap.

 Use running water from a hose or a high-pressure washer to clean the product.



**CAUTION:** Do not point the water directly at the fuel tank cap, electrical components or the engine.

Remove grease and oil from the handle.

## To do a general inspection

 Make sure that all nuts and screws on the product are tightened correctly.

## To do a check of the engine oil level

- 1. Remove the oil tank cap and dipstick.
- 2. Clean the oil from the dipstick.
- 3. Put the dipstick back fully into the oil tank.
- 4. Remove the dipstick.
- 5. Examine the oil level on the dipstick.
- If the oil level is low, fill with engine oil and do a check of the oil level again. Refer to *Technical data* on page 20 or the engine manual for the correct type of oil.

#### Air filter



**WARNING:** Use approved respiratory protection when you clean or replace the air filter. Discard used air filters correctly. The dust in the air filter is dangerous to your health.



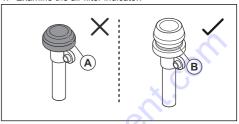
**CAUTION:** Always replace a damaged air filter, or the dust will go into the engine and cause engine damage.

#### To examine the air filter indicator



**CAUTION:** Examine the air filter indicator each time the engine is started. A clogged air filter can cause damage to the product.

1. Examine the air filter indicator.



 a) If the air filter indicator is compressed (A), clean or replace the air filter. Refer to To clean or replace the air filter on page 15.



**WARNING:** Stop the engine before you do the maintenance.

a) If the the green mark (B) shows, no maintenance on the air filter is necessary.

Refer to the engine manual for more information about the air filter indicator.

#### To clean or replace the air filter

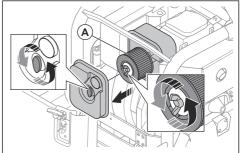


**WARNING:** Use approved respiratory protection when you clean or replace the air filter. Discard used air filters correctly. The dust in the air filter is dangerous to your health.



**WARNING:** Do not clean the air filter with compressed air. This causes damage to the air filter and the risk increases that you breathe the dangerous dust.

 Turn the locking knob on the air filter cover counterclockwise and remove the air filter cover.



- Turn the locking knob on the air filter counterclockwise and remove the air filter (A) from the air filter housing.
- 3. Clean the air filter housing with a brush.
- Tap the air filter against a hard surface or use a vacuum cleaner to remove the particles.



**CAUTION:** Do not let the nozzle of the vacuum cleaner touch the surface of the paper filter element. Keep a small distance. The sensitive surface of the paper filter element becomes damaged if objects touch it.

- 5. Examine the air filter for damage.
- Discard the air filter if it is damaged, wet or if there is oil on it.



**CAUTION:** Always replace a damaged air filter, or the dust will go into the engine and cause engine damage.

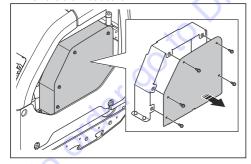
- Install the clean air filter or a new air filter into the air filter housing. Tighten the locking knob clockwise.
- Install the air filter cover and turn the locking knob clockwise.

#### To do a check of the V-belt

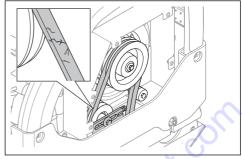


**WARNING:** Do not operate the product without the V-belt cover installed.

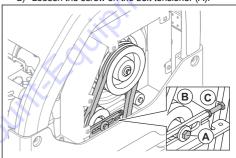
- 1. Stop the engine.
- 2. Remove the V-belt cover.



3. Examine the V-belt for damages and wear. Replace the V-belt if it is necessary.



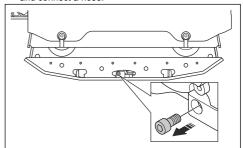
- 4. Do a check of the V-belt tension.
- If the V-belt tension is not sufficient, do this procedure:
  - a) Loosen the screw on the belt tensioner (A).



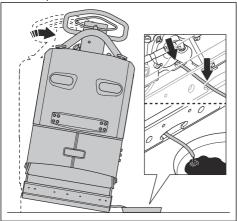
- b) Loosen the locknut (B).
- Turn the adjustment screw (C) to adjust the belt tensioner.
- d) Tighten the screw on the locknut (B) and the belt tensioner (A).
- 6. Install the V-belt cover.

# To replace the oil in the eccentric element

 Remove the oil drain plug for the eccentric element and connect a hose.



2. Tilt the product to drain the oil.



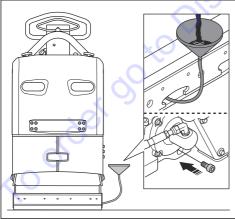
**Note:** You can also use a manual oil drain pump to drain the oil in the eccentric element.

Clean the surfaces around the hole for the oil drain plug, the threads of the hole and the oil drain plug. Use a dry cloth and, if it is necessary, an applicable solvent.



**CAUTION:** Do not use water to clean around and on the oil drain plug.

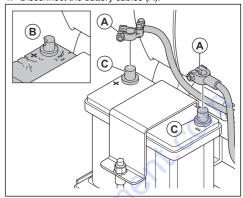
4. Fill the eccentric element with oil of the correct type. Refer to *Technical data on page 20*.



5. Install the oil drain plug.

## To do a check of the battery

1. Disconnect the battery cables (A).



- Examine the battery for damages (B). Replace the battery if it is damaged.
- 3. Clean the battery terminals (C).
- 4. Connect the battery cables.

## To charge the battery

The battery is a gel battery. It is not necessary to do maintenance on the battery.



**WARNING:** Do not charge the battery more than recommended. The life of the battery decreases and flammable gases can come from the battery.



**CAUTION:** If the battery becomes very hot when it charges, disconnect the battery immediately.

- Use a voltage-regulated battery charger for gel batteries. Refer to Recommended battery chargers on page 17. Speak to Discount-equipment for more information about the correct battery charger.
- If the battery is not used for a long period of time, charge it fully before you use it.
- Do a trickle charging 1-2 times during the winter season when the product is in storage.

#### Recommended battery chargers

The recommendations are correct at an average ambient temperature of 25°C/77°F.

Battery charger type	Recommendations
Alternator.	13.65–15.0 V.
Constant voltage charger.	13.8–15.0 V. Max. 10 A. Charge for 6–12 h.

Battery charger type	Recommendations
Float charger.	13.2–13.8 V. Max. 1 A. No time limit at lower voltages.
Fast charger, constant voltage charger.	Max. 15.6 V. No current limit if the battery temperature is less than 50°C/125°F. Charge until the current is less than 1 A.
Battery charger for cyclic batteries or batteries connected in a series string.	14.7 V. No current limit if the battery temperature is less than 50°C/125°F. When the current is less than 1 A, charge with 2 A constant current for 2 h.

#### Charge time at different currents

The recommendations are correct at an average ambient temperature of 25°C/77°F. The charge time changes with different ambient temperatures and different battery chargers.

Current	Approximate time to 90% charge level
100 A	35 minutes
50 A	75 minutes
25 A	140 minutes

## Hydraulic system

#### To do a check of the hydraulic hoses

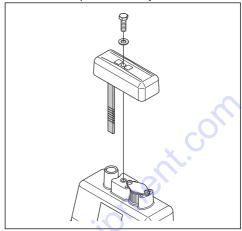
 Examine the hydraulic hoses regularly. Replace worn or damaged hydraulic hoses.



WARNING: Hydraulic oil is dangerous. The rubber in the hydraulic hoses wears with time. Worn or damaged hydraulic hoses can break and the hydraulic oil can cause injury. If you cannot tell if the hydraulic hoses are worn, always replace the hydraulic hoses.

#### To do a check of the hydraulic oil level

1. Remove the dipstick from the hydraulic oil tank.



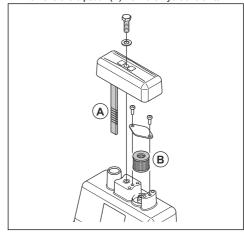
- 2. Read the hydraulic oil level on the dipstick.
- If the hydraulic oil level is too low, let an approved service center examine the hydraulic system for leaks.

#### To replace the hydraulic oil



**WARNING:** Risk of burn injury. The hydraulic oil becomes hot during operation of the product. Let the product become cool before you replace the hydraulic oil.

1. Remove the dipstick (A) from the hydraulic oil tank.



- 2. Use an oil drain pump to drain the hydraulic oil from the hydraulic oil tank.
- 3. Clean the opening of the hydraulic oil tank.
- 4. Replace the breather filter (B).

- 5. Fill with hydraulic oil of the correct type. Refer to *Technical data on page 20.*
- Put the dipstick into the hydraulic oil tank.

## Transportation, storage and disposal

#### **Transportation**



**WARNING:** Be careful during transportation. The product is heavy and can cause injury or damage if it falls or moves during transportation.

Lift the product to move it shorter distances. For longer distances, put the product on a transportation vehicle.



**CAUTION:** Do not tow the product behind a vehicle.

#### To lift the product



**WARNING:** Make sure that the lifting equipment has the correct specification to lift the product safely. The type plate on the product shows the product weight.

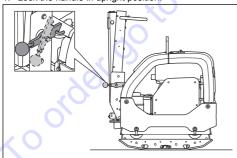


**WARNING:** Do not lift a damaged product. Make sure that the lifting eye, the vibration damping units and the safety straps are correctly installed and not damaged.

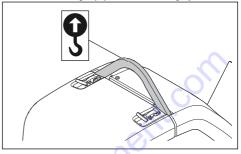


**WARNING:** Do not walk or stay below or near a lifted product.

1. Lock the handle in upright position.



2. Attach the lifting equipment to the lifting eye.

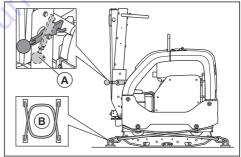




**WARNING:** Do not use metal hooks, chains or other lifting equipment with rough edges that can cause damage to the lifting eye.

# To safety the product to a transportation vehicle with tie-down straps

1. Lock the handle in upright position (A).



- 2. Put 2 straps (B) around the bottom plate.
  - a) Put 1 strap around the front of the bottom plate and attach the strap to the vehicle.
  - b) Put 1 strap around the rear of the bottom plate and attach the strap to the vehicle.

## Storage

- Remove all fuel from the fuel tank before you put the product in storage for a long period of time. Discard the fuel at an applicable disposal location.
- Fully charge the battery before storage. An empty battery freezes at approximately -7°C/19°F. A fully charged battery freezes at approximately -67°C/ 89°F.
- Clean the product before storage. Remove oil and dust from the rubber parts.
- · Clean the air filter before storage.

- · Put a protective cover on the product.
- Keep the product in a dry and frost free area.
- Keep the product in a locked area to prevent access for children or persons that are not approved.

## Disposal

 Chemicals can be dangerous and must not be discarded on the ground. Always discard used chemicals at a service center or an applicable disposal location.

- When the product is worn out, send it to the dealer or to an applicable recycling location.
- Oil, oil filters, fuel and the battery can have negative effects on the environment. Obey the local recycling requirements and applicable regulations.
- · Do not discard the battery as domestic waste.
- Discard it at a disposal location for used batteries.

## Technical data

#### Technical data

	Manual start	Electrical start	EPA, electrical start
Net weight, kg/lb	447/985.5	467/1029.6	496/1093.5
Operation weight (EN500, incl. oil, $\frac{1}{2}$ fuel), kg/lb	449.5/991	469.5/1035.1	498.5/1099
Engine brand, type	Hatz, 1 D81Z	Hatz, 1 D81Z	Hatz, 1 D81Z
Engine power, kW/hp @rpm <sup>1</sup>	9.1/12.2 @2550	9.1/12.2 @2550	9.1/12.2 @2550
Vibration frequency, Hz/rpm	69/4140	69/4140	69/4140
Amplitude, mm/in.	2.4/0.064	2.4/0.064	2.4/0.064
Centrifugal force, kN/lbf	65/14612	65/14612	65/14612
Operation speed, m/min or ft./min	30 or 98.4	30 or 98.4	30 or 98.4
Max. tilt, degrees/%	20/35	20/35	20/35
Fuel tank capacity, I/qts	7.0/7.40	7.0/7.40	7.0/7.40
Engine oil capacity *, I/qts	1.9/2.0	1.9/2.0	1.9/2.0
Hydraulic oil tank capacity, I/qts	1.0/1.06	1.0/1.06	1.0/1.06
Eccentric element, I/qts	0.7/0.74	0.7/0.74	0.7/0.74
Engine oil *	Shell Rimula R4 L 15W-40 or equivalent	Shell Rimula R4 L 15W-40 or equivalent	Shell Rimula R4 L 15W-40 or equivalent
Eccentric element oil	Shell Rimula R4 L 15W-40 or equivalent	Shell Rimula R4 L 15W-40 or equivalent	Shell Rimula R4 L 15W-40 or equivalent
Hydraulic oil	Shell Tellus S3 V32	Shell Tellus S3 V32	Shell Tellus S3 V32
Biological hydraulic oil (optional)	Shell Naturelle HF-E 32	Shell Naturelle HF-E 32	Shell Naturelle HF-E 32
Fuel *	Ultra-low-sulfur diesel fuel only	Ultra-low-sulfur diesel fuel only	Ultra-low-sulfur diesel fuel only
Fuel consumption, I/h or qts/h	1.8 or 1.9	1.8 or 1.9	1.8 or 1.9

As specified by the engine manufacturer. The power rating of the engine indicated is the average net output (at specified rpm) of a typical production engine for the engine model measured to SAE standard J1349/ ISO1585. Mass production engines may differ from this value. Actual power output for the engine installed on the final product will depend on the operating speed, environmental conditions and other values.

	Manual start	Electrical start	EPA, electrical start
Battery type	N/A	Spiralcell technology AGM battery	Spiralcell technology AGM battery
Battery voltage, V	N/A	12V/48Ah	12V/48Ah
Starter motor	N/A	12V/2.0 kW	12V/2.0 kW

<sup>\* =</sup> For further information and questions about this specific engine, refer to the engine manual or the web site of the engine manufacturer.

Noise and vibration emissions	-CO.
Sound power level, measured dB (A)	108
Sound power level, guaranteed L <sub>WA</sub> dB (A) <sup>2</sup>	109
Sound pressure level at the operator's ear, L <sub>P</sub> , dB (A) <sup>3</sup>	96
Vibration level, a <sub>hv</sub> , m/s <sup>24</sup>	2.5

Weights for options	
Extensions 2 units per machine, 2 x 75 mm/3.0 in. kg/lb	26/57.3
Extensions 2 units per machine, 2 x 150 mm/5.9 in. kg/lb	40/88.2
Block paving set, width 750 mm, kg/lb	10/22
Block paving set, width 850 mm, kg/lb	11/24.6

# Noise and vibration declaration statement

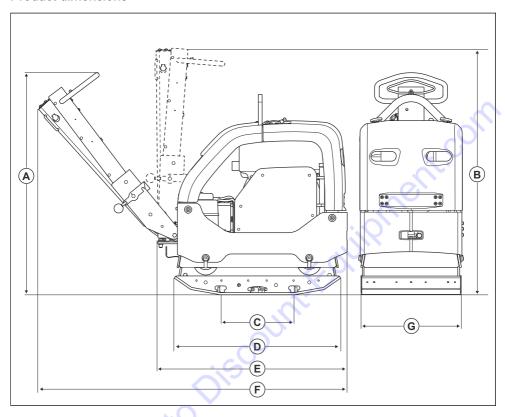
These declared values were obtained by laboratory type testing in accordance with the stated directive or standards and are suitable for comparison with the declared values of other products tested in accordance with the same directive or standards. These declared values are not suitable for use in risk assessments and values measured in individual work places may be higher. The actual exposure values and risk of harm experienced by an individual user are unique and depend upon the way the user works, in what material the product is used, as well as upon the exposure time and the physical condition of the user, and the condition of the product.

Noise emissions in the environment measured as sound power (L<sub>WA</sub>) as per EN ISO 3744 in conformity with EC directive 2000/14/EC. The difference between guaranteed and measured sound power is that the guaranteed sound power also includes dispersion in the measurement result and the variations between different machines of the same model according to Directive 2000/14/EC.

Sound pressure level L<sub>P</sub> according to EN ISO 11201, EN 500-4. Uncertainty K<sub>PA</sub> 3.0 dB (A).

Vibration value according to EN 500-4. Reported data for vibration level has a typical statistical dispersion (standard deviation) of 1.5 m/s<sup>2</sup>.

## **Product dimensions**



A	Handle height, operation position, mm/in.	1190/46.9	E	Length with handle folded, mm/in.	1025/40.4
В	Handle height, transport position, mm/in.	1320/52	F	Length including handle, mm/in.	1670/65.7
С	Bottom plate contact area without extensions, m²/sq. ft.	0.21/2.26		Width without extensions, mm/in.	550/21.7
D	Length bottom plate, mm/in.	900/35.4	G	Width including 2x75 mm extensions	700/27.6
		300/30. <del>1</del>		Width including 2x150 mm extensions	850/33.5

# TO PURCHASE THIS PRODUCT PLEASE CONTACT US



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