

Operator's manual

Vibratory rammer

BS30



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Errors excepted.

The machine on the cover may have special equipment (options).



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Original operator's manual



CALIFORNIA Proposition 65 Warning



WARNING

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



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.



WARNING

Cancer and Reproductive Harm -
www.P65Warnings.ca.gov.



WARNING

Batteries, battery posts, terminals and related accessories contain lead and lead compounds, and other chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. WASH HANDS AFTER HANDLING.



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1 Preface

This operator's manual contains important information and procedures for the safe, proper and economic operation of this Wacker Neuson machine. Carefully reading, understanding and observing is an aid to avoiding hazards, repair costs and downtime, and therefore to increasing the availability and service life of the machine.

This operator's manual is not a manual for extensive maintenance or repair work. Such work should be carried out by Wacker Neuson service or by technically trained personnel. The Wacker Neuson machine should be operated and maintained in accordance with this operator's manual. An improper operation or improper maintenance can pose dangers. Therefore, the operator's manual should be constantly available at the location of the machine.

Defective machine parts must be exchanged immediately!

If you have any questions concerning the operation or maintenance, a Wacker Neuson contact person is always available.

2 Introduction

2.1 Using the manual

This manual is to be considered part of the machine and should be carefully stored during the entire service life of the machine. This manual shall be transferred to subsequent owners or users of the machine.

2.2 Storage location of the manual

This manual is part of the machine and must be kept in the immediate vicinity of the machine and made accessible to staff at all times.

If this manual is lost, or if a second copy is required, there are two options to obtain a replacement:

- Download from the Internet: www.wackerneuson.com
- Contact your Wacker Neuson contact partner.

2.3 Accident prevention regulations

In addition to the notes and safety instructions in this manual, the local accident prevention regulations as well as the national health and safety regulations apply.

2.4 More information

This manual applies to various machine types from one product series. For this reason, some figures may vary slightly in appearance from the machine purchased. Depending on the model, there may be descriptions of components that are not included in the standard package.

The information contained in this manual is based on machines manufactured up to the time of printing. Wacker Neuson reserves the right to change this information.

The manufacturer shall immediately include any modifications or additions in this manual.

2.5 Target group

Individuals working with this machine must be regularly trained on the dangers of handling the machine.

This manual is intended for the following people:

Operating personnel:

These individuals have been trained on the machine and informed about the possible dangers in the event of improper conduct.

Technically trained personnel:

These people have professional training as well as additional knowledge and experience. They are able to assess the tasks assigned to them and recognize possible dangers.

2.6 Explanation of symbols

This manual contains specially emphasized safety instructions in the following categories: **DANGER**, **WARNING**, **CAUTION** and **NOTICE**.

Before performing any work on or with this machine, the notes and safety instructions must be read and understood. All notes and safety instructions in this manual must be passed on to the maintenance, repair, and transport personnel.



DANGER

This combination of symbol and signal word indicates a hazardous situation that will lead to death or serious injury if it is not avoided.



WARNING

This combination of symbol and signal word indicates a hazardous situation that can lead to death or serious injury if it is not avoided.



CAUTION

This combination of symbol and signal word indicates a hazardous situation that can lead to minor injury or damage to the machine if it is not avoided.

NOTICE

Supplementary information.

2.7 Wacker Neuson Contact partner

Depending on the country, the Wacker Neuson contact partner is a Wacker Neuson service department, a Wacker Neuson subsidiary, or a Wacker Neuson dealer.

On the Internet at www.wackerneuson.com.

2.8 Disclaimer

For the following violations, Wacker Neuson dismisses any liability for personal injury or material damage:

- Failure to follow this manual.
- Unintended use.
- Deployment of untrained personnel.
- Using non-approved spare parts and accessories.
- Improper handling.
- Structural modifications of any kind.
- Failure to observe the "General Terms and Conditions" (GT&Cs).

2.9 Product identification of the machine**Data of the nameplate**

The nameplate contains information that uniquely identifies this machine. This information is required for ordering spare parts and when inquiring about technical issues.

- Enter information about the machine in the following table:

Designation	Your information
Group and model	
Year of manufacture	
Machine number	
Version no.	
Item number	

3 Security

NOTICE

Read and comply with all notes and safety instructions in this manual. Failure to comply with these instructions can cause electric shock, fire and/or serious injuries as well as damage to the machine and/or damage to other objects. Keep safety instructions and notes for the future.

3.1 Policy

In keeping with the latest technological developments

The machine has been built in keeping with the latest technological developments and the recognized technical safety rules. Nevertheless, improper use can result in hazards to life and limb of the user, third parties or to damage to the machine and other material assets.

3.2 Proper use

The machine is intended for the compaction of cohesive, mixed and granular soils.

The machine may only be combined and operated with permissible components.

The machine may only be operated with the approved accessories from Wacker Neuson.

Use in accordance with the intended purpose also includes the observation of all safety instructions in this manual as well as complying with the prescribed care and maintenance instructions.

Any other use or use that exceeds this is considered as not being in accordance with the intended purpose. The manufacturer's liability and warranty are canceled for any damage resulting from improper use. The risk lies entirely with the operator.

In particular, misuse is considered:

- The connection of non-permissible components.
- Operating the machine outside of the power rating.
- Operation contrary to the notes and safety instructions fixed to the machine and included in the manual.

3.3 Structural changes

Structural modifications may not be undertaken without the written permission of the manufacturer.

Unapproved structural changes may result in risks to the operator and/or third parties as well as damage to the machine.

In the event of unapproved structural changes, the manufacturer's liability and guarantee are also not applicable.

The following in particular are considered structural changes:

- Opening the machine and the permanent removal of components.
- Installing spare parts that do not originate from Wacker Neuson or are not comparable in the design system and quality of the original parts.
- Attaching accessories that do not originate from Wacker Neuson.

Spare parts or accessories that originate from Wacker Neuson can be safely mounted. They can be found on the Internet under www.wackerneuson.com.

3.4 Areas of responsibility of the operator

The operator is the individual who personally operates this machine for industrial or commercial purposes or who entrusts a third party with the use. The operator bears legal responsibility for his/her protection as well as that of third parties.

The user must make the operator's manual available to the operator and ensure that this has been read and understood.

3.5 Operator responsibilities

- Know and implement the applicable industrial safety regulations.
- Use a risk assessment to identify the dangers that result from the working conditions at the site of application.
- Create operating instructions for the operation of this machine.

- Periodically check whether the user instructions correspond to the current state of regulations.
- Clearly regulate and specify the responsibilities for installation, operation, troubleshooting, maintenance and cleaning.
- Regularly train employees and inform them about potential hazards.
- Periodically refresh the instruction.
- Keep records of the training received and provide them to the competent authorities upon request.
- Provide employees with the necessary equipment.

3.6 Personnel qualification

This machine may only be installed and operated by trained personnel.

Faulty operation, misuse or operation by untrained personnel can endanger health of the operator or third parties and lead to damage to or total loss of the machine.

In addition, the operator should be:

- physically and mentally fit.
- not under the influence of drugs, alcohol or medication that can impair responsiveness.
- familiar with the safety instructions in this manual.
- familiar with the intended use of this machine.
- instructed in the independent operation of the machine.

3.7 Residual dangers

Residual dangers in particular are hazards when dealing with machines that, despite a safe design, cannot be eliminated.

These residual dangers are not obvious and may be the source of a possible injury or health hazard.

If unforeseeable residual dangers occur, the operation of the machine is to be stopped immediately and the competent supervisor is to be informed. This supervisor shall make the following decisions and initiate everything required to eliminate the occurring danger.

If necessary, the machine manufacturer is to be informed.

3.8 General safety instructions

The safety instructions in this chapter include the "General Safety Instructions", which should be reported in the manual in accordance with the applicable standards. There may be information that is not relevant to this machine.

3.8.1 Working area

- Keep the working area tidy. Cluttered or dark working areas can lead to accidents.
- Before beginning work, familiarize yourself with the working environment, e.g. the load-bearing capacity of the floor or obstacles in the vicinity.
- Make working area safe for the public transport sector.
- When using this machine, children and unauthorized individuals must be kept away. Distraction can lead to loss of control of the machine.
- Always protect the machine against tilting, rolling, sliding, and crashing. Risk of injury!

3.8.2 Service

- The machine should only be maintained/repared by technically trained personnel.
- Use only original spare parts and accessories. This preserves the operational safety of the machine.

3.8.3 Personal safety

- Working under the influence of drugs, alcohol, or drugs can lead to serious injuries.
- Protective equipment should be worn for all work. Appropriate personal protective equipment considerably reduces the risk of injury.
- Remove any tools before the machine is put into operation. Tools that are located on a rotating machine part can be ejected and cause serious injury.
- Always ensure good footing.
- In the case of extensive work with this machine, long-term vibration-induced damage cannot be ruled out. For the vibration load of the machine, see chapter *Technical data*.
- Wear suitable clothing. Keep baggy or loose clothing, protective gloves, jewelry and long hair away from moving/rotating machine parts. Danger of being pulled!

3.8.4 Handling and use

- Do not operate machines whose switches are defective. Have defective switches exchanged immediately. Machines with defective switches have a high risk of injury.
- Store unused machines out of the reach of children. The machine may only be operated by authorized personnel.
- Handle the machine with care. Have defective parts exchanged immediately before the machine is operated. Defective machines have a high risk of accidents.
- Use the machine, accessories, insertion tools, etc. according to these instructions.

3.9 Specific safety instructions – Vibratory rammer BS

3.9.1 External influences

The vibratory rammer may not be operated in the event of the following external influences:

- In an explosive vicinity.
- Oil field environments – methane leaks from ground. Explosion hazard!
- In dry, flammable vegetation. Fire hazard!

3.9.2 Take work breaks regularly

When operating this machine for long periods of time, vibration-induced circulatory disorders may occur to your fingers, hands or wrists.

Symptoms:

- The aforementioned body parts falling asleep, tingling, pain, sharp pains and changes to skin color.

NOTICE

If these symptoms are determined, seek medical attention immediately.

- If you have a personal disposition to poor blood circulation, your working time may be reduced despite wearing protective gloves and taking regular work breaks.

3.9.3 Operational safety

- When operating the machine, make sure that no gas, water, or electric lines are damaged.
- The machine must not be operated in tunnels or enclosed spaces.
- Pay maximum attention near drops or slopes. Risk of crashing!
- In trenches and pits, pay very close attention to the sidewalls to ensure they are stable and do not collapse from the vibration. Danger of collapse!
- Do not leave the machine unattended. Risk of injury!
- Delimit spacious workspace and restrict access to unauthorized individuals. Risk of injury!
- Machine operators must ensure that people in the working area keep a minimum distance of 5 meters from the running machine.

3.10 General safety instructions – Combustion engines

The following notes must be observed:

- Before starting work, check the engine to ensure there are no leaks and cracks in the fuel lines, tank and fuel cap.
- Do not operate a defective engine. Replace damaged parts immediately.
- The pre-set engine speed may not be adjusted. This could lead to engine damage.
- Make sure that the exhaust system of the engine is free of debris. Fire hazard!
- Switch off the engine and allow it to cool before refueling.
- Use the correct fuel type. The fuel may not be mixed with other liquids.
- Use clean filling aids for refueling. Do not spill fuel. Immediately wipe up any spilled fuel.
- The engine may not be started near spilled fuel. Explosion hazard!
- When operating in partially enclosed spaces, adequate aeration must be ensured. Do not inhale exhaust fumes. Risk of poisoning!
- The engine surface and exhaust system can quickly become extremely hot. Risk of burns!

3.11 General safety instructions – Fuel, lubricants and coolants

The following notes must be observed:

- Always wear safety glasses and protective gloves when handling fuel, lubricants, and coolants. Seek medical attention, for example if you get oil or grease in your eyes.
- Avoid direct skin contact with fuel, lubricants and coolants. Immediately rinse skin with soap and water.
- Do not eat or drink while working with fuel, lubricants and coolants.
- Contaminated oil from dirt or water can lead to premature wear or failure of the machine.
- Dispose of spilled fuel, lubricants and coolants according to the applicable provisions for environmental protection.
- If fuel, lubricants and coolants escape from the machine, do not operate the machine any longer and have it repaired immediately by the Wacker Neuson contact partner.

3.12 Maintenance






The following notes must be observed:

- This machine may not be maintained, repaired, adjusted or cleaned while switched on.
- Adhere to maintenance intervals.
- Observe the maintenance schedule. Non-listed work must be taken over by the service department of the Wacker Neuson contact partner.
- Immediately replace worn or damaged machine parts. Only use spare parts from Wacker Neuson.
- Keep the machine clean.
- Missing, damaged, or illegible safety warning labels should be replaced immediately. Safety stickers contain important information for the protection of the operator.
- Maintenance work must be performed in a clean and dry vicinity (e.g. workshop).

3.13 Personal Protective Equipment

NOTICE

To prevent personal injury when handling this machine, personal protective equipment must be worn when working on or around this machine.

Pictogram	Significance	Description
	Wear safety shoes!	Safety shoes provide protection from bruises, falling objects, and slipping.
	Wear safety glasses!	Safety glasses protect against flying objects and liquid spray.
	Wear protective gloves!	Protective gloves provide protection from abrasion, cuts, punctures, and hot surfaces.
	Wear ear protection!	Ear protection provides protection from permanent hearing impairment.
	Wear a protective helmet!	A protective helmet protects against injuries from falling objects.

NOTICE

With this machine, the permissible, country-specific noise limit (personal rating level) may be exceeded.

Therefore, ear protection must be worn. For exact values for noise measurement, see chapter *Technical data*.

Work particularly cautiously and pay attention when wearing ear protection, as your ability to hear noises, such as screams or signal tones, is restricted.

Wacker Neuson recommends always wearing ear protection.

3.14 Safety devices

Safety devices protect the user of this machine from being exposed to existing hazards. These are barriers (separating protective devices) or other technical measures. This prevents the user from being exposed to a danger. The source of danger will be eliminated in certain situations or the danger will be reduced.

This machine has the following safety equipment:



Item	Description
1	Heat shield

Heat shield

The heat shield protects the operator from radiant heat.

3.15 Behavior in dangerous situations**Preventive measures:**

- Always be prepared for accidents.
- Keep first aid equipment on hand.
- Make sure that all employees are familiar with accident reporting, first aid, and rescue facilities.
- Keep access routes clear for emergency vehicles.
- Make sure that employees receive first aid training.

Measures in the case of an emergency:

- Immediately take the machine out of operation.
- Remove injured and other people from the danger zone.
- Initiate first aid measures.
- Alert rescuers.
- Keep access routes clear for emergency vehicles.
- Inform the person responsible at the site of application.

4 Safety and information labels



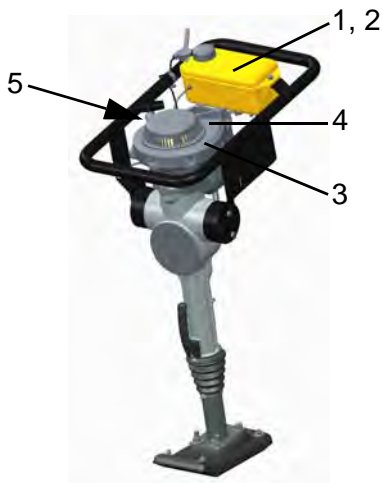
WARNING






Illegible symbols

Over time, labels and signs on the machines can become dirty or otherwise unrecognizable.

- Keep all safety, warning, and operating instructions on the machine in a legible condition.
- Replace damaged labels and signs immediately.

The following labels are located on the machine:



Item	Label	Description
1		Use personal protection equipment in order to prevent injuries and health hazards. <ul style="list-style-type: none"> ■ Ear protection. ■ Read operator's manual.
2		Fire hazard. It is prohibited to smoke and start an open fire.
3		Warning against hot surface.
4		Guaranteed sound power level.
5		Engine stops.

5 Setup and function

5.1 Standard package

The standard package includes:

- Vibratory rammer.
- Operator's manual.

5.2 Application

The vibratory rammer is used for the compaction of soil and is used in gardening and landscaping, civil engineering and road and highway construction. It is primarily used here for the compaction of the spaces on either side of the bottom half of pipelines.

5.3 Functional characteristics

Principle

The Wacker Neuson vibratory rammer essentially consists of the drive motor, ramming system, ramming shoe and control handle.

The drive occurs via a gasoline engine. This gasoline engine works according to the two-stroke principle and is mechanically started via a starter rope on the recoil starter.

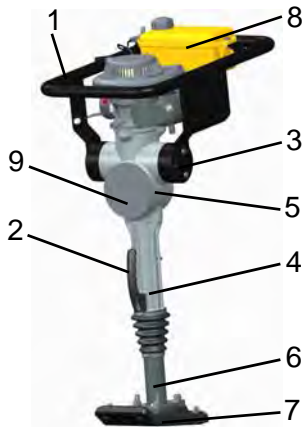
The rotational movement of the drive motor is converted into a lifting movement via a centrifugal clutch, a single-level beveled gear transmission and a crank gear mechanism. The lifting movement is transferred to the ramming system via a connecting rod.

The vibratory rammer receives its travel speed from the tilt of the ramming shoe.

The control handle is decoupled from the ramming system by rubber elements (inserts). This reduces the transmission of vibrations to the operator.

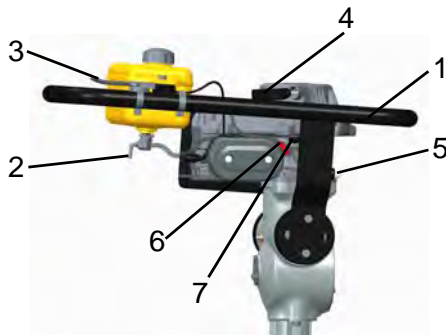
6 Components and operator's controls

6.1 Components



Item	Designation	Item	Designation
1	Control handle	6	Ramming system
2	Handle	7	Ramming shoe
3	Vibration damper	8	Fuel tank
4	Guide cylinder	9	Nameplate
5	Crankcase		

6.2 Operator's controls



Item	Designation	Item	Designation
1	Control handle	5	Fuel pump bellows
2	Fuel cock	6	Choke
3	Gas throttle lever	7	Off switch
4	Starter rope		

Handle

The handle makes it easier to work in a slanting position.

Choke

Additionally activate the choke when the engine is hot or cold to enrich the fuel-air mixture.

Fuel pump bellows

The fuel pump bellows serves to fill the fuel lines and the carburetor after the machine has not been used for a longer period of time. The integrated return line prevents too much fuel from getting into the carburetor when pumping occurs too frequently.

7 Transport



WARNING

Improper handling may result in injury or serious material damage.

- Please read and follow all safety instructions in this operator's manual.



WARNING

Danger from falling.

Falling machines can cause serious injuries from crushing.

- Only use suitable and tested lifting gear and slings with sufficient lifting capacity.
- Reliably secure the machine to the lifting gear.
- Do not lift the machine with an excavator bucket or forklift.

Evacuate danger zone while lifting, do not stop under suspended loads.



WARNING

Risk of fire and explosion from fuel.

Escaping fuel may catch fire and cause serious burns.

- Lift and transport the machine upright.

7.1 Lifting and tie-down lugs

Carry out preparations

1. Switch off engine.
2. Lean the machine upright against a solid object and secure from tipping over.
3. Allow the machine and engine to cool down.

Removing the fuel system

NOTICE

The fuel cap has an excess and low-pressure valve through which fuel may escape in a heated state (e.g. in the event of solar radiation).

The fuel system must be empty during transport in order to prevent the escape of fuel through the pressure relief valve.

1. Remove dirt accumulation in the area of the fuel cap.
2. Unscrew the fuel cap and remove.
3. Pump the fuel into a suitable container or tank, e.g. with a suction lift pump.
4. Attach the fuel cap and tighten.
5. Start the engine and allow it to idle until the fuel in the carburetor has been used and the engine stops.

Lifting and lashing down the machine

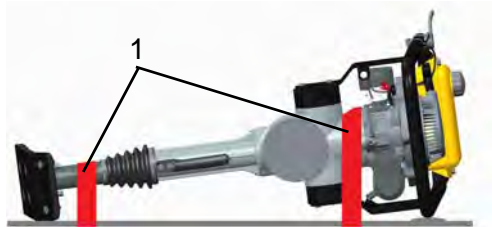
NOTICE

Appoint a specialist flagman for a safe lifting operation.



Item	Designation
1	Control handle

1. Attach suitable sling gear to the control handle.
2. Carefully load the machine into or onto a stable means of transport capable of bearing the load. Turn the machine on its side.



Item	Designation
1	Attachment of the tension belt

3. After loading the machine, lash down the machine to prevent it from rolling off, slipping, or tipping over. Attach and tension the tension belt over the vibratory rammer.

8 Storage

If the machine will not be operated for longer periods of time, e.g. during the winter months, carry out the following activities.

In order to avoid possible damage, the following points must be observed:

- Do not store the machine outdoors.
- Store dry and free of dust.
- Protect from direct sunlight.

Emptying the fuel system:

Some of the gasoline in fuel evaporates when stored for a long period of time. The 2-stroke oil in the fuel does not evaporate. After being stored for a prolonged period of time, the mixing ratio of the gasoline/2-stroke oil would no longer be correct. That is why the fuel system must be empty when stored for prolonged periods of time.

1. Remove dirt accumulation in the area of the fuel cap.
2. Unscrew the fuel cap and remove.
3. Pump the fuel into a suitable container or tank, e.g. with a suction lift pump.
4. Replace fuel cap and tighten.
5. Start the engine and allow it to idle until the fuel in the carburetor has been used and the engine stops.

9 Operation and use



WARNING

Improper handling may result in injury or serious material damage.

- Please read and follow all safety instructions in this operator's manual.

9.1 Initial commissioning



Item	Designation
1	Spark plug cap

1. Place the spark plug cap on the spark plug.

9.2 Before commissioning

9.2.1 Inspection before commissioning

- Check the machine and components for damage. In the event of visible damage, do not operate the machine and immediately contact a Wacker Neuson dealer.
- Ensure that loose packaging material has been removed from the machine.
- Current regulations of the local authorities for noise emissions.
- Fuel level.
- Air filter.
- Starter rope.
- Grease.
- Check the screwed connections for a secure seat.

NOTICE

Perform checks according to the *Maintenance* chapter. If necessary, top off missing fuel, lubricants and coolants, see chapter *Technical Data*.

9.3 Notes about operation



WARNING

Danger of tipping

There is a serious risk of injury from slipping or tipping over of the machine.

- Always secure the machine from tipping over.
- Place the machine on level surface with a firm substrate.



DANGER

Danger of crushing

It is possible to crush hands and feet.

- Work carefully.

**CAUTION**

Beware of physical impairments caused by vibration.

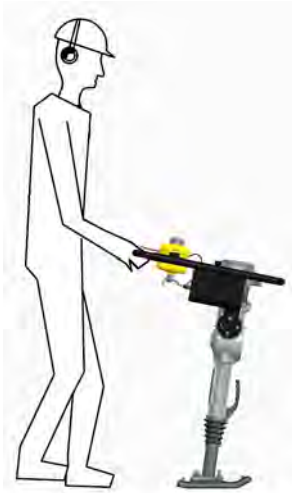
- Take breaks periodically.

**CAUTION**

Injuries or material damage.

There can be strong recoils on firm, hard or rigid bottoms.

- Avoid these bottoms.



- In accordance with the intended purpose, the operator should stand behind the machine.
- Guide and steer the machine using the control handle.
- Utilize the machine's dead weight when working.
- Allow the machine to pull forward independently. Do not push or pull forward or backward with muscle power.
- Hold the control handle left and right for an optimal control, performance and minimal hand-arm-vibrations.
- To avoid damage to the machine, the machine may not be relocated in a running state.
- Use caution with coarse materials. In order to avoid extreme wear of the ramming shoe, this must always strike parallel to the bottom to be compacted.

Operation in channels

- On pit, cavity, dump and embankment edges, on trench edges and terraces, operate the machine so that there is no danger of tipping or falling over.
- Pay attention to the sidewalls and their stability. Danger of collapse and burying!
- Stability!

Operation below freezing

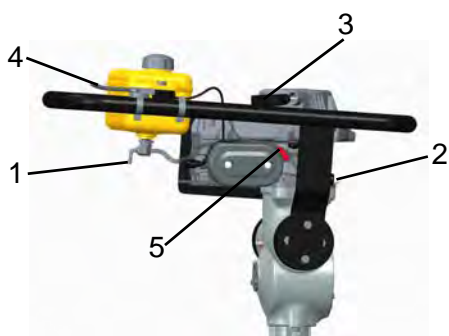
The cold grease in the ramming system can increase the resistance so much that the centrifugal clutch slips.

- Allow the machine to warm up at a low rpm (do not actuate the gas throttle lever), as otherwise the centrifugal clutch will wear quickly.

9.4 Commissioning**NOTICE**

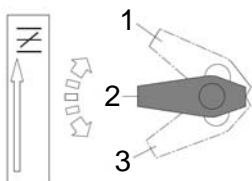
The machine must stand upright when starting and be placed on a suitable subsurface.

Carry out preparations



Item	Designation	Item	Designation
1	Fuel cock	4	Gas throttle lever
2	Fuel pump bellows	5	Choke
3	Starter rope		

1. Firmly hold the machine with one hand on the control handle.
2. Open fuel cock.
3. Press the fuel pump bellows until the bellows are completely filled with fuel.



Item	Designation	Item	Designation
1	Choke ON	3	Choke OFF
2	Choke half position		

4. Cold engine: Choke ON.
 - Warm engine: Choke half position.
 - Hot engine: Choke OFF.

9.4.1 Start engine



WARNING

Hot silencer
Contact may cause burns.

- Firmly hold the machine only by the control handle.
- Wear protective gloves.



CAUTION

Incorrect handling during starting can cause minor injuries.

- Only pull the starter rope if there is sufficient place and no people are in the immediate vicinity.

NOTICE

Improper handling can damage the machine.

- Do not pull the starter rope all the way to the detent.
- Slowly allow the starter rope to reel in again.

NOTICE

To start the engine, remove the engine at least 3 m from the refueling point.

1. Hold the machine firmly by the control handle with your left hand.
2. Choke ON.
3. Actuate the gas throttle lever - half-throttle position.
4. Slowly pull the starter rope out until you feel compression resistance and allow it to roll back in slowly.
5. Pull out the starter rope forcibly, but not in a jerky manner.
 - Slowly allow the starter rope to reel in again.
6. Put the choke at half position when the first ignition of the engine can be heard.
7. Forcibly pull out the starter rope, but not in a jerky manner, until the engine has started.
 - Slowly allow the starter rope to reel in again.
8. Push the gas throttle lever back - idle position.
9. Allow the engine to warm up.
10. Choke OFF after 20-30 seconds.

9.5 Operation

Only guide and steer the machine using the control handle.

9.5.1 Compacting material**WARNING**

Injuries from uncontrolled and unguided machines.

- Always hold the machine with both hands and assume a secure stance.

1. Guide the machine with both hands on the control handle.
2. Actuate the throttle lever until the desired rpm is reached.
3. Once the material is compacted, raise the machine and relocate.
 - When lifting the machine, place the gas throttle lever to the idle position so that the engine will continue to run at a low rpm.

9.6 Decommissioning

Item	Designation	Item	Designation
1	Off button	3	Gas throttle lever
2	Fuel cock		

1. Push back the gas throttle lever.
2. Hold down the off switch until the machine has come to a complete stop.
3. Close the fuel cock.

NOTICE

Park the machine so that it cannot tip over, fall or slip away.

10 Maintenance

**WARNING**

Improper handling may result in injury or serious material damage.

- Please read and follow all safety instructions in this operator's manual.

**WARNING**

Risk of injury from uncontrolled starting of the machine and moving parts.

- Only perform maintenance work with the machine switched off.

**WARNING**

Warning of hot surfaces.

The crankcase with the engine and guide cylinder can heat up greatly after even a short period of time, which can lead to severe burns on contact with skin.

- Always allow the engine to cool down completely after use.
- If there is not enough time to allow the machine to cool down (e.g. in an emergency situation.) – use heat-resistant protective gloves.

**WARNING**

Danger of poisoning from exhaust fumes.

Exhaust fumes contain poisonous carbon monoxide, which can lead to unconsciousness or to death.

- Only perform maintenance work with the engine switched off.

10.1 Open Source Explanation

You can select any qualified repair shop or person for maintenance, replacement and repair work of emissions control devices with original or equivalent replacement parts. However, warranty, recall and all other services paid for by Wacker Neuson must be performed by an authorized Wacker Neuson service center. You will be responsible for handing over your off-road engine equipment with spark ignition to a Wacker Neuson service center as soon as a defect occurs that falls under the warranty. Wacker Neuson could provide additional equipment services at an authorized Wacker Neuson service center that are not related to the engine or emissions control system, but that are included in the maintenance instructions below.

10.2 Maintenance schedule

Maintenance work	daily	h	Annually
Cleaning the machine: <ul style="list-style-type: none"> ■ Ventilation slots. ■ Cooling fins of the engine. ■ Air filter. Visual check for completeness. Visual check for damage.	■		
Check the fuel: <ul style="list-style-type: none"> ■ Fill level of the fuel tank. ■ Check the fuel tank for leaks. ■ Check the utility lines for leaks. 	■		
Check the function of the gas throttle lever, fuel cock and carburetor.	■		
Check the screwed connection.	■		
Clean the recoil starter.		20 h	
Clean the engine silencer and exhaust slots.		20 h	
Grease the ramming system.		50 h	
Replace fuel filter.*			■
Replace air filter.*			■
Clean the spark plug. Replace if necessary.*			■
* Have this work performed by the service department of your Wacker Neuson contact partner.			

10.3 Maintenance work



CAUTION

Health risk from fuel, lubricants and coolants.

- Do not inhale fuel, lubricants, coolants or vapors.
- Avoid contact of skin or eyes with fuel, lubricants and coolants.

Carry out preparation work:

1. Place the machine on a level surface.
2. Decommissioning the machine.
3. Let the machine cool.

10.3.1 Clean the machine

NOTICE

Do not use high-pressure washers!

Penetrating water can damage the drive motor, electrical operator's controls or components of the machine.

- Clean the ventilation slots with an appropriate, non-metallic auxiliary tool.
- Wipe down the housing with a damp clean cloth.
- After cleaning, check the cable, utility lines and hardware for loose connections, chafe marks and other damage.
- Immediately eliminate detected deficiencies.

10.3.2 Top off the fuel



WARNING

Risk of fire and explosion from fuel and fuel vapors.

- Do not smoke.
- Do not refuel near open flames.
- Switch off engine and allow it to cool before refueling.



CAUTION

Health risk from fuel.

- Refuel in a well-ventilated area.
- Do not inhale fuel vapors.
- Avoid fuel contact with skin or eyes.



Item	Designation
1	Fuel cap

1. Remove dirt accumulation in the area of the fuel cap.
2. Slowly unscrew the fuel cap and remove.

NOTICE

Slowly unscrew the fuel cap so that any existing excess pressure can slowly escape.

3. Top off the fuel with a clean funnel.
 - For the fuel specification, see the chapter *Technical data*.
 - For the fuel mixing specification, see the chapter *Technical data*.
4. Replace fuel cap and tighten.

10.3.3 Check/clean the air filter

Remove the air cleaner cartridge

1. Remove dirt accumulation within the range of the air cleaner cover.
2. Unscrew and remove all nuts of the air cleaner cover.
3. Remove the air cleaner cover.
4. Remove air cleaner cartridge.

Check/clean the air cleaner cartridge

1. Beat the air cleaner cartridge and blow out with compressed air from the inside to the outside.

NOTICE

When knocking, ensure that the air cleaner cartridge is not damaged.

2. If the dust cannot be removed, replace the air cleaner cartridge.

Installing the air cleaner cartridge

1. Insert air cleaner cartridge.
2. Seat the air cleaner cover.
3. Tighten all nuts of the air filter cover.

NOTICE

The engine might wear faster when operating it without an air filter.

- Do not operate the engine without an air cleaner or air cleaner cover.

10.3.4 Grease the ramming system

Item	Designation
1	Zerk fitting

1. Remove dirt accumulation within the range of the zerk fitting.
2. Apply the filled grease press to the zerk fitting and actuate about 20 times (about 30 grams).
 - Only use special lubricants for the lubrication, see chapter *Technical Data*.
3. Wipe the area of the zerk fitting with a clean cloth.

10.3.5 Checking/cleaning/replacing the spark plug**CAUTION**

Touching the hot spark plug may cause burns.

- Only unscrew the spark plug if the engine has cooled down.

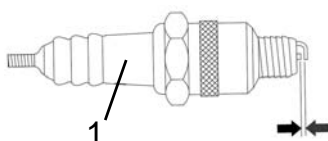
Remove the spark plug

1. Thoroughly clean the area around the spark plug.
2. Remove the spark plug cap from the spark plug.

NOTICE

Do not pull the spark plug cap from the spark plug by the ignition cable.

3. Loosen the spark plug with a spark plug wrench and unscrew.

Checking/cleaning the spark plug

Item	Designation
1	Isolator

1. Check the isolator - if damaged, replace the spark plug.
2. Clean the electrodes with a wire brush.
3. Measure the spark plug air gap with a feeler. If necessary, correct by bending the side electrode.
 - For the spark plug type and spark plug air gap, see chapter *Technical Data*.
4. Check the spark plug seal ring - if damaged, replace the spark plug.

Installing the spark plug

1. First, screw in the spark plug by hand and then tighten with a spark plug wrench. The torque setting is 25 Nm.
2. Attach the spark plug cap to the spark plug.

NOTICE

Screwed-in spark plugs that are too loose or too tight may cause engine damage.

- Tighten the spark plug with the prescribed torque setting.
-

11 Troubleshooting


DANGER

Danger to life from unauthorized troubleshooting.

- If faults occur with this machine that are not described in this manual, contact the manufacturer. Do not eliminate the faults independently.

11.1 Fault table

Fault	Cause	Remedial measure
The engine does not start.	Fuel cock is not closed.	Open fuel cock.
	Fuel tank is empty.	Top off the fuel.
	Fuel line is clogged.	Have the fuel line cleaned.*
	The fuel filter is clogged.	Have the fuel filter replaced.*
	The carburetor is clogged.	Have the carburetor cleaned.*
	The air filter is clogged.	Clean air filter.
	The spark plug cap is defective.	Have the machine repaired.*
	The spark plug is defective.	Replace the spark plug.
	The spark plug is loose.	Tighten the spark plug.
	The spark plug air gap of the spark plug has been incorrectly set.	Adjust the spark plug air gap.
The engine shuts down shortly after starting.	Fuel tank is empty.	Top off the fuel.
	The fuel filter is clogged.	Have the fuel filter replaced.*
	Air filter is dirty.	Clean or replace air cleaner.
The engine does not have any power.	Air filter is dirty.	Clean or replace air cleaner.
The engine revs up, but the ramming system has no power.	Defective centrifugal clutch.	Have the centrifugal clutch replaced.*
Recoil starter defective.	The starter rope is stuck.	Have the starter rope replaced.*
	The starter rope is torn.	
* Contact your Wacker Neuson contact partner.		

12 Technical data

12.1 Noise and vibration information

The noise and vibration information listed was determined according to the following guidelines with the machine-typical operating states / specific test conditions while applying harmonized standards:

- Machines directive 2006/42/EC
- Noise emissions directive 2000/14/EC

In operational application, deviating values may result depending on the prevailing operating conditions.

12.1.1 Noise information

Sound pressure level at the operator's location

- The LWA was determined pursuant to EN ISO 11201 and EN 500-4.

Guaranteed sound power level

- The LWA was determined pursuant to EN ISO 3744 and EN 500-4.

12.1.2 Hand-arm vibration (HAV) information

Weighted total vibration value

- The HAV was determined pursuant to EN ISO 20643 and EN 500-4.

12.2 BS

Designation	Unit	BS30
Item number		5000005216
Percussion rate	rpm	810
Power transmission		Centrifugal clutch
Length	mm	620
Width	mm	363
Height	mm	980
Length (ramming shoe)	mm	296
Width (ramming shoe)	mm	150
Travel speed	m/min	19
Weight	kg	30.0
Electrical load rating	kW	1.5
Nominal speed	rpm	4,400
Standard		ISO 3046-1
Special lubricant		S3 V220C 2
Storage temperature range	°C	-30 – +50
Operating temperature range	°C	-10 – +40
Sound pressure level L_{pA}	dB(A)	98
Sound power level L_{WA} measured guaranteed	dB(A)	105
	dB(A)	108
Vibration total value a_{hv}	m/s^2	12.0
Uncertainty of measurement of the vibration total value a_{hv}	m/s^2	3.0

**12.3 Combustion engine**

Designation		
Manufacturer		Wacker Neuson
Type of engine		WM80
Combustion method		Two-cycle
Cooling		Air cooling
Cylinders		1
Displacement	cm ³	80
Fuel type		Oil/alkylate fuel mixture
Fuel consumption	l/h	0.9
Mixture preparation		Carburetor
Fuel gasoline/oil mixing ratio		100:1 / 50:1
Tank capacity	l	2.2
Oil specification		ISO-L EG C, ISO-L EG D, JASO FC, JASO FD
Electrical load rating	kW	1.5
Nominal speed	rpm	4,400
Standard		ISO 3046-1
Idling speed	rpm	2,000
Spark plug model		RL86C
Spark plug air gap	mm	0.5 - 0,8
Starter type		Recoil starter
Exhaust certification		EU Stage V, US Phase 3, China Stage2



EC Declaration of Conformity

Manufacturer

Wacker Neuson Produktion GmbH & Co. KG, Wackerstraße 6, D-85084 Reichertshofen
This declaration of conformity is issued under the sole responsibility of the manufacturer.

Product	BS30
Product type	Vibratory rammer
Function of product	Soil compaction
Material number	5000005216
Net installed power	1,5 kW
Measured sound power level	105 dB(A)
Guaranteed sound power level	108 dB(A)

Conformity assessment procedure

2000/14/EC, Annex VIII

Notified body

TÜV Rheinland LGA Products GmbH, Tillystr. 2, D-90431 Nürnberg (NB 0197)

Guidelines and standards

We hereby declare that this product complies with the relevant provisions and requirements of the following directives and standards:

2006/42/EC, 2000/14/EC, 2014/30/EU, EN 500-1:2006 + A1:2009, EN 500-4:2011, EN ISO 13766-1:2018, EN ISO 13766-2:2018

Person responsible for technical documents

Wacker Neuson Produktion GmbH & Co. KG, Wackerstraße 6, D-85084 Reichertshofen

Reichertshofen, 18.08.2020

Helmut Bauer
Managing Director

