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Internal vibrator with integrated inverter

IRFU



Operator's manual



Manufacturer

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Translation of the original operator's manual in German



**WACKER
NEUSON**

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1 Foreword

This operator's manual contains information and procedures for the safe operation and maintenance of your Wacker Neuson machine. In the interest of your own safety and to prevent accidents, you should carefully read through the safety information, familiarize yourself with it and observe it at all times.

This operator's manual is not a manual for extensive maintenance and repair work. Such work should be carried out by Wacker Neuson service or authorized specialists.

The safety of the operator was one of the most important aspects taken into consideration when this machine was designed. Nevertheless, improper use or incorrect maintenance can pose a risk. Please operate and maintain your Wacker Neuson machine in accordance with the instructions in this operator's manual. Your reward will be troublefree operation and a high degree of availability.

Defective machine parts must be replaced immediately!

Please contact your Wacker Neuson representative if you have any questions concerning operation or maintenance.

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We expressly reserve the right to make technical modifications – even without special notice – which aim at further improving our machines or their safety standards.

2 Introduction

2.1 Means of representation for this operator's manual

Warning symbols

This operator's manual contains safety information of the categories: DANGER, WARNING, CAUTION, NOTICE.

They should be followed to prevent danger to life and limb of the operator or damage to equipment and exclude improper service.



DANGER

This warning notice indicates immediate hazards that result in serious injury or even death.

- ▶ Danger can be avoided by the following the actions mentioned.
-



WARNING

This warning notice indicates possible hazards that can result in serious injury or even death.

- ▶ Danger can be avoided by the following the actions mentioned.
-



CAUTION

This warning notice indicates possible hazards that can result in minor injury.

- ▶ Danger can be avoided by the following the actions mentioned.
-

NOTICE

This warning notice indicates possible hazards that can result in material damage.

- ▶ Danger can be avoided by the following the actions mentioned.
-

Notes

Note: Complementary information will be displayed here.

Instructions

- ▶ This symbol indicates there is something for you to do.
- 1. Numbered instructions indicate that you have to carry out something in a defined sequence.
- This symbol is used for lists.

2.2 Wacker Neuson representative

Depending on your country, your Wacker Neuson representative is your Wacker Neuson service, your Wacker Neuson affiliate or your Wacker Neuson dealer.

You can find the addresses in the Internet at www.wackerneuson.com.

The address of the manufacturer is located at the beginning of this operator's manual.

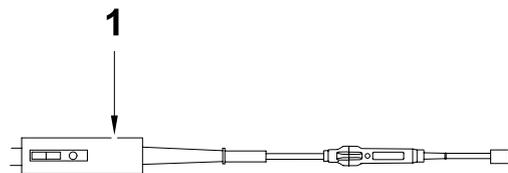
2.3 Described machine parts

This operator's manual is valid for different machine parts from a product range. Therefore some figures can differ from the actual appearance of your machine. It is also possible that the descriptions include components which are not a part of your machine.

Details for the described machine types can be found in the chapter *Technical Data*.

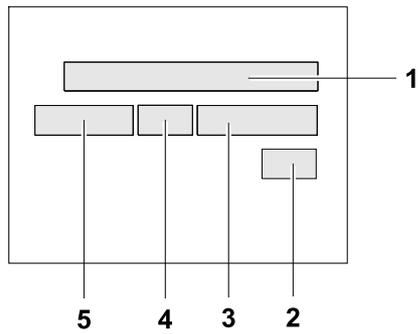
2.4 Identification of the machine

Nameplate position



Item	Designation
1	Nameplate

Nameplate data



The nameplate lists information that uniquely identifies your machine. This information is needed to order spare parts and when requesting additional technical information.

► Enter the information of your machine into the following table:

Item	Designation	Your information
1	Group and type	
2	Construction year	
3	Machine no.	
4	Version no.	
5	Item no.	

3 Safety

3.1 Principle

State of the art

This machine has been constructed with state-of-the-art technology according to the recognized rules of safety. Nevertheless, when used improperly, dangers to the life and limb of the operator or to third persons or damage to the machine or other materials cannot be excluded.

Proper use

The machine may only be used for compacting fresh concrete. The vibrator head has to be immersed in the fresh concrete.

The vibrator head may not be immersed into acidic or alkaline liquids.

The vibrator head may not come into contact with or be inserted into parts of the body.

Its proper use also includes the observance of all instructions contained in this operator's manual as well as complying with the required service and maintenance instructions.

Any other use is regarded as improper. Any damage resulting from improper use will void the warranty and the liability on behalf of the manufacturer. The operator assumes full responsibility.

Structural modifications

Never attempt to modify the machine without the written permission of the manufacturer. To do so will endanger your safety and the safety of other people! In addition, this will void the warranty and the liability on behalf of the manufacturer.

Especially the following are cases of structural modifications:

- Opening the machine and the permanent removal of components from Wacker Neuson.
- Installing new components which are not from Wacker Neuson and not equivalent to the original parts in design and quality.
- Installation of accessories which are not from Wacker Neuson.

It is no problem to install spare parts from Wacker Neuson.

It is no problem to install accessories that are available in the Wacker Neuson product range of your machine. Please refer to the installation regulations in this operator's manual.

Do not drill into the housing, e.g. to install signs. Water could penetrate the housing and damage the machine.

Requirements for operation

The ability to operate the machine safely requires:

- Proper transport, storage and setup.
- Careful operation.
- Careful service and maintenance.

Operation

Operate the machine only as intended and only when in proper working condition.

Operate the machine in a safety-conscious manner with all safety devices attached and enabled. Do not modify or disable any safety devices.

Before starting operation, check that all control and safety devices are functioning properly.

Never operate the machine in a potentially explosive environment.

Supervision

Never leave the machine running unattended!

Maintenance

Regular maintenance work is required in order for the machine to operate properly and reliably over time. Failure to perform adequate maintenance reduces the safety of the machine.

- Strictly observe the prescribed maintenance intervals.
- Do not use the machine if it requires maintenance or repairs.

Malfunctions

If you detect a malfunction, you must shut down and secure the machine immediately.

Eliminate the malfunctions that impair safety immediately!

Have damaged or defective components replaced immediately!

For further information, refer to chapter *Troubleshooting*.

Spare parts, accessories

Use only spare parts from Wacker Neuson or such that are equivalent to the original parts in design and quality.

Only use accessories from Wacker Neuson.

Non-compliance will exempt the manufacturer from all liability.

Exclusion of liability

Wacker Neuson will refuse to accept liability for injuries to persons or for damage to materials in the following cases:

- Structural modifications.
- Improper use.
- Failure to comply with this operator's manual.
- Improper handling.
- Using of spare parts which are not from Wacker Neuson and not equivalent to the original parts in design and quality.
- Using of accessories which are not from Wacker Neuson.

Operator's manual

Always keep the operator's manual near the machine or near the worksite for quick reference.

If you have misplaced the operator's manual or require an additional copy, contact your Wacker Neuson representative or download the operator's manual from the Internet (www.wackerneuson.com).

Always hand over this operator's manual to other operators or to the future owner of the machine.

Country-specific regulations

Observe the country-specific regulations, standards and guidelines in reference to accident prevention and environmental safety, for example those pertaining to hazardous materials and wearing protective gear.

Complement the operator's manual with additional instructions taking into account the operational, regulatory, national or generally applicable safety guidelines.

Operator's controls

Always keep the operator's controls of the machine dry, clean and free of oil or grease.

Operating elements such as ON/OFF switch, gas handles etc. may not be locked, manipulated or changed without authorization.

Checking for signs of damage

Inspect the machine when it is switched off for any signs of damage at least once per work shift.

Do not operate the machine if there is visible damage or defects.

Have any damage or defects eliminated immediately.

3.2 Qualification of the operating personnel

Operator qualifications

Only trained personnel are permitted to start and operate the machine. The following rules also apply:

- You are physically and mentally fit.
- You have received instruction on how to independently operate the machine.
- You have received instruction in the proper use of the machine.
- You are familiar with required safety devices.
- You are authorized to start machines and systems in accordance with the standards governing safety.
- Your company or the operator has assigned you to work independently with this machine.

Incorrect operation

Incorrect operation or misuse by untrained personnel can endanger the health and safety of the operator or third persons and also cause machine and material damage.

Operating company responsibilities

The operating company must make the operator's manual available to the operator and ensure that the operator has read and understood it.

Work recommendations

Please observe the recommendations below:

- Work only if you are in a good physical condition.
- Work attentively, particularly as you finish.
- Do not operate the machine when you are tired.
- Carry out all work calmly, circumspectly and carefully.
- Never operate the machine under the influence of alcohol, drugs or medication. This can impair your vision, reactions and your judgment.
- Work in a manner that does not endanger others.
- Ensure that no persons or animals are within the danger zone.

3.3 Protective gear

Work clothing

Clothing should be appropriate, i.e. should be close-fitting but not restrict your movement.

When on construction sites, do not wear long hair loosely, loose clothing or jewelry including rings. These objects can easily get caught or be drawn in by moving machine parts.

Only wear clothing made of material that is not easily flammable.

Personal protective gear

Wear personal protective gear to avoid injuries or health hazards:

- Non-skid, hard-toed shoes.
- Work gloves made of durable material.
- Overalls made of durable material.
- Hard hat.
- Ear protection.

Ear protection

This machine generates noise that exceeds the country-specific permissible noise levels (individual rating level). It may therefore be necessary to wear ear protection. You can find the exact value in the chapter *Technical Data*.

When wearing ear protection while working, you must pay attention and exercise caution because your hearing is limited, e.g. in case someone screams or a signal tone sounds.

Wacker Neuson recommends that you always wear ear protection.

3.4 Transport

Switching off the machine

Before you transport the machine, switch it off and pull the plug out of the plug receptacle. Allow the motor to cool down.

Transporting the machine

Secure the machine on the transport device against tilting, falling or slipping.

Lifting the machine

A falling machine can cause serious injuries.

The machine has no lifting or lashing points.

When lifting the machine, secure it in a closed transport container or similar in order to prevent it from toppling, falling or slipping away.

Restarting

Machines, machine parts, accessories or tools that were detached for transport purposes must be re-mounted and fastened before restarting.

Only operate in accordance with the operating instructions.

3.5 Operating safety

Explosible environment

Never operate the machine in a potentially explosive environment.

Work environment

Familiarize yourself with your work environment before you start work. This includes e.g. the following items:

- Obstacles in the work and traffic area.
- Load-bearing capacity of the ground.
- The measures needed to cordon off the construction site from public traffic in particular.
- The measures needed to secure walls and ceilings.
- Options available in the event of an accident.

Starting the machine

Observe the safety information and warning notices located on the machine and in the operator's manual.

Never attempt to start a machine that requires maintenance or repairs.

Start the machine as described in the operator's manual.

Avoid body contact with grounded components.

Vertical stability

Always make sure that you stand firmly when working with the machine. This applies particularly when working on scaffoldings, ladders, uneven or slippery floors etc.

Caution with hot parts

Do not touch the hot vibrator head during or shortly after operation. The vibrator head can become very hot and can cause severe burns.

Caution with movable parts

Keep your hands, feet and loose clothing away from moving or rotating machine parts. Parts of your body being pulled in or crushed can cause serious injuries.

Do not use components of to machine for climbing on or holding onto

Never use the protective hose, power cable or other components of the machine for climbing on or holding onto.

Switching off the machine

Switch off the machine and pull the plug out of the plug receptacle in the following situations:

- Before breaks.
- If you are not using the machine.

Before storing the machine, wait until it has completely stopped running.

Store the machine or put it down in such a way that it cannot tilt, fall down or slip.

Storage

Set the machine down or store it securely so that it cannot tilt, fall down or slip.

Storage location

After operation, allow the machine to cool and then store it in a sealed-off, clean and dry location protected against frost and inaccessible to children.

Vibrations

When manually operated machines are intensively used, long-term damage caused by vibrations cannot be precluded.

Observe the relevant legal instructions and guidelines to minimize vibration stress.

Details on vibration stress associated with the machine can be found in the chapter *Technical Data*.

3.6 Safety during the operation of hand machines

Setting the hand machine down properly

Set the machine down carefully. Do not drop the machine to the floor or from greater heights. Dropping the machine can cause injuries to other persons or the machine itself can be damaged.

Safe working with hand machines

While working, always hold the machine on the handle provided.

3.7 Safety during the operation of electric appliances

Specific regulations for electrical appliances

Observe the safety information provided in the brochure *General Safety Rules* which is included in the scope of delivery of your machine.

Also observe the country-specific regulations, standards and guidelines in reference to accident prevention in connection with electrical equipment and machines.

⚠ WARNING Read all safety information and instructions. Failure to follow the safety information and instructions may result in electric shock, fire and/or serious injury.

Save all safety information and instructions for future reference.

Electric power supply for electrical appliances of class rating I

Note: The rated voltage is indicated on the nameplate of your machine.

The machine must be connected to a 15 A/16 A shock-proof plug receptacle (continental type) with a corresponding overload protection.

One of the following fault current protective switches is required:

- Standard fault current protective switch (AC sensitive, Type A).
- AC/DC sensitive fault current protective switch (Type B).

The machine may only be connected to an electric power supply with all machine parts in proper working condition. Take special notice of the following components:

- Plug.
- Power cable over the entire length.
- Switch diaphragm of the ON/OFF switch, if there is one.
- Plug receptacles.

The machine may only be connected to an electric power supply whereby the connector of the grounded conductor (PE) is intact.

There must be at least one of the following safety devices if connected to a stationary or mobile generator:

- Fault current protective switch.
- Isolation (earth leakage) monitor.
- IT-net.

If you connect your machine to a worksite distribution board, the worksite distribution board must be grounded.

Note: Observe the respective national safety regulations!

Extension cable

The machine may only be operated with undamaged and tested extension cables!

Only use extension cables with grounded conductor and correct connection of the grounded conductor to the plug and coupling (only for machines of class rating I, see chapter *Technical data*).

Only use tested extension cables which are suitable for use at construction sites: Average rubber hose H05RN-F or better – Wacker Neuson recommends H07RN-F, an SOW cable, or a country-specific equivalent design.

Immediately replace damaged extension cables (e.g. tears in the sheathing) or loose plugs and couplings.

Cable drums and multiple plug receptacles must fulfill the same requirements as the extension cable.

Protect extension cables, multiple plug receptacles, cable drums and connection couplings against rain, snow or any other forms of moisture.

Uncoil the cable drum completely

Danger of fire due to wound cable drum.

Uncoil the cable drum completely before operation.

Protecting the power cable

Do not use the power cable to pull or lift the machine.

Do not unplug the power cable by pulling on the cable.

Protect the power cable from heat, oil and sharp edges.

If the power cable is damaged or the plug is loose, have it replaced immediately by your Wacker Neuson representative.

Protecting the protective hose

- Do not drag the protective hose over sharp edges.
- If the vibrator head jams in the reinforcement, do not pull out the protective hose suddenly or violently. Free the vibrator head by carefully moving it back and forth.

3.8 Maintenance

Maintenance work

Service and maintenance work must only be carried out to the extent described in these operating instructions. All other procedures must be performed by your Wacker Neuson representative.

For further information, refer to chapter *Maintenance*.

Disconnecting the machine from the electric power supply

Before carrying out service or maintenance work, pull the plug out of the plug receptacle in order to disconnect the machine from the electric power supply.

Cleaning

Always keep the machine clean and be sure to clean it each time you have finished using it.

Do not use gasoline or solvents. Danger of explosion!

Do not use high pressure washers. Permeating water can damage the machine. When electrical equipment is present, this can pose a serious injury risk from electric shocks.

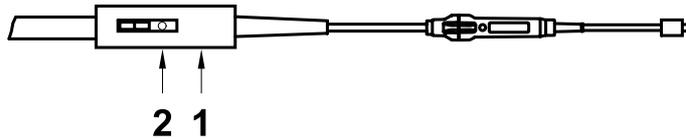


3.9 Safety and information labels

Your machine has adhesive labels containing the most important instructions and safety information.

- Make sure that all the labels are kept legible.
- Replace any missing or illegible labels.

The item numbers for the labels are in the parts book.



Item	Label	Description
1		<ul style="list-style-type: none"> ■ Warning! Risk of electrocution. ■ Do not open housing. ■ Read the operator's manual.
2	US machines 	Warning

4 Scope of delivery

The internal vibrator is delivered completely mounted.

The scope of delivery includes:

- Machine.
- Operator's manual.
- Parts book.
- General safety instructions.

5 Description

5.1 Application

Use the machine only as intended, see chapter Safety, Proper use.

IRFU GV

The machine is protected from damage of the formworks by the rubber seal cap (GV).

IRFU ...k

The machine is especially suited for compacting fresh concrete on even surfaces with low layer thickness. The short construction (...k) enables the complete immersion of the vibrator head, which results in a more efficient cooling of the vibrator head.

5.2 Functionality

Principle

The machine is an internal vibrator which creates high-frequency vibrations in the vibrator head.

Concrete is deaerated and compressed in the effective range of the vibrator head when the vibrator head is immersed into the fresh concrete.

The fresh concrete is simultaneously cooling the vibrator head.

Note: The concrete is being compressed for as long as bubbles of air arise.

Bodyguard®

The Bodyguard® connects the power supply with the inverter and monitors the incoming and outgoing operating currents. The Bodyguard® is designed to protect the user against electrocution.

If the machine is correctly connected and if there are no dangerous leakage currents, the control lamp lights green.

If there is a leakage current within the machine, the control lamp lights red. In this case the electric power supply from the mains is interrupted and the inverter is inhibited. The machine does not work. The power supply will remain interrupted until the fault has been corrected.

Note: The machine works only in combination with the Bodyguard®.

Thermal overload switch

The machine is protected against overheating. In the case of overheating, the machine will automatically be deactivated.

Inverter

The inverter comprises a current rectifier and a d.c.-a.c. converter monitored by an electronic control.

The current rectifier converts the input voltage (AC single phase) to DC voltage.

The d.c.-a.c. converter converts the generated DC voltage to three phase current (AC three phase).

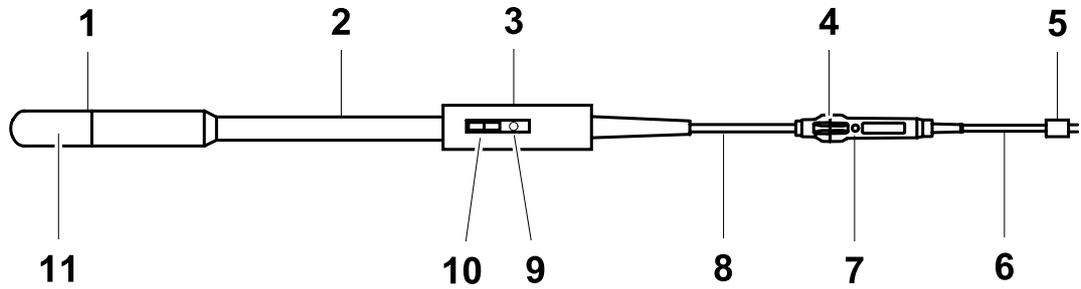
When the machine is switched on, the control electronics provides a soft start and thus prevents critical starting currents.

Vibrator head

In the vibrator head, an electric motor drives an eccentric weight at approx. 12,000 rpm (200 Hz) and thus generates precessions. By these precessions the vibrator head introduces vibrations into the concrete.

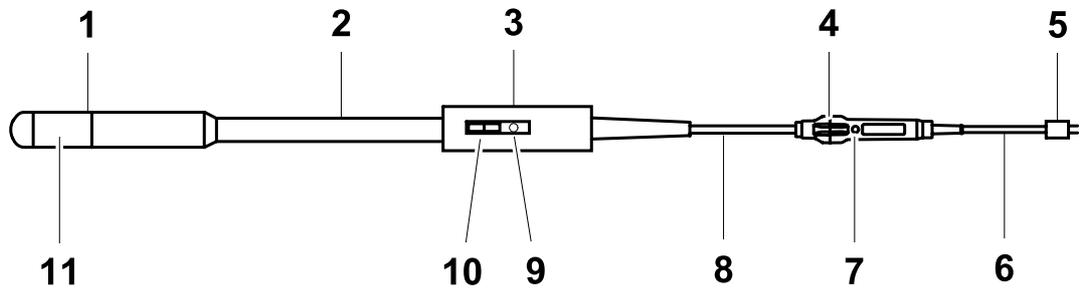
5.3 Components and operator's controls

IRFU



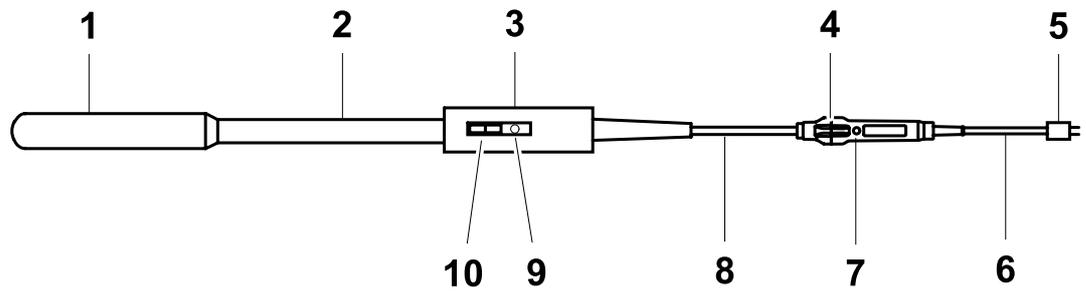
Item	Designation	Item	Designation
1	Vibrator head	7	Status lamp
2	Protective hose	8	Connecting cable
3	Inverter	9	Status lamp
4	Bodyguard®	10	ON/OFF switch
5	Plug	11	Lower tube
6	Power cable		

IRFU GV



Item	Designation	Item	Designation
1	Vibrator head	7	Status lamp
2	Protective hose	8	Connecting cable
3	Inverter	9	Status lamp
4	Bodyguard®	10	ON/OFF switch
5	Plug	11	Lower tube with rubber seal cap
6	Power cable		

IRFU 30



Item	Designation	Item	Designation
1	Vibrator head	7	Status lamp
2	Protective hose	8	Connecting cable
3	Inverter	9	Status lamp
4	Bodyguard®	10	ON/OFF switch
5	Plug		
6	Power cable		

6 Transport



WARNING

Improper handling can result in injury or serious material damage.

- ▶ Read and follow all safety information of this operator's manual, see chapter *Safety*.
-



WARNING

Hot vibrator head.

Touching it can cause burns.

- ▶ Only touch the vibrator head once the engine has cooled down.
 - ▶ Wear protective gloves.
-

Transporting the machine

1. Switch off the machine via the ON/OFF switch.
2. Wait until the machine has come to a complete standstill.
3. Pull the plug from the plug receptacle.
4. Place the machine on or into a suitable means of transport.
5. Roll up the power cable and the protective hose.
Note: Do not kink the protective hose and power cable.
6. Secure the machine against falling and sliding.

7 Use and operation



WARNING

Improper handling can result in injury or serious material damage.

- ▶ Read and follow all safety information of this operator's manual, see chapter *Safety*.
-

7.1 Prior to starting the machine

After unpacking, the machine is ready for operation.

Checking the machine

- ▶ Check the machine and all components for damages.
- ▶ Damage to the protective hose and the power cable.

Checking the mains

- ▶ Check if mains or power distribution on the construction site have the correct operating voltage (see nameplate of the machine or chapter *Technical Data*).
- ▶ Check if mains or power distribution on the constructions site are protected in accordance with current standards and regulations.

7.2 Starting up



WARNING

Damaged insulation.

Danger of electrocution!

- ▶ Do not kink or damage the protective hose and power cable.
-

Connecting the machine to the electric power supply

Note: The machine may only be connected to AC single phase, connection values see chapter *Technical Data*.

NOTICE

Electrical voltage.

Incorrect voltage can cause damage on the machine.

- ▶ Check if the voltage of the current source corresponds with the information of the machine, see chapter *Technical Data*.

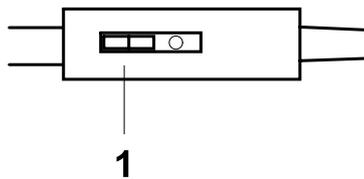


WARNING

Starting of the machine.

Danger of injuries from uncontrolled starting of the machine.

- ▶ Deactivate the machine before connection to the electric power supply.



Item	Designation
1	ON/OFF switch

1. Switch off the machine via the ON/OFF switch.



WARNING

Electrical voltage.

Injuries from electrocution.

- ▶ Check power cable and extension cable for signs of damage.
- ▶ Only use extension cables for which grounded conductors are connected to the plug and the coupling (only for machines of class rating I, see chapter *Technical Data*).

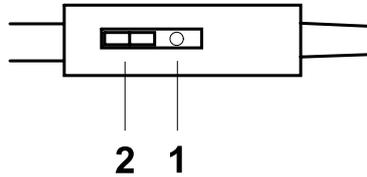
2. If required, connect the machine to a permitted extension cable.

Note: See chapter *Technical data* for the permitted lengths and cross-section areas of extension cables.

3. Insert the plug into the plug receptacle.

If the machine is correctly connected and if there are no dangerous leakage currents, the control lamp on the Bodyguard[®] lights green.

Switching on the machine



Item	Designation
1	Control lamp
2	ON/OFF switch

1. Use the protective hose to hold the machine near the vibrator head.
2. Switch on the machine via the ON/OFF switch.

If the machine is ready for operation, the control lamp on the inverter lights green.

Compacting fresh concrete

1. Hold machine at the protective hose with both hands.
2. Quickly immerse the vibrator head in the fresh concrete, hold it for several seconds and slowly pull it out again.
3. Immerse the vibrator head in all areas of the formwork and compact the fresh concrete.

Note:

- Compact especially intensively in the area of formwork corners. In these areas, the reinforcement rate is the highest.
- Avoid contact of the vibrator head with the concrete reinforcement. The following damages are possible if the vibrator head comes into contact with the concrete reinforcement:
 - The connection of the concrete to the reinforcement can be lost.
 - The machine can be damaged.
- The result of the compacting depends on the following points:
 - Holding time of the vibrator head in the concrete.
 - Diameter of the vibrator head.
 - Consistency of the concrete.
 - Reinforcement rate.

If you use a vibrator head with a smaller diameter, the compacting time to achieve the same results as with a vibrator head with a larger diameter will increase.

- Indications that the concrete is sufficiently compacted:
 - The concrete no longer sets.
 - Air bubbles no longer or rarely rise.
 - The sound of the vibrator head is not changing anymore.

7.3 Decommissioning

Switching off the machine



CAUTION

The vibrator head moves if it is turned on and not immersed in the fresh concrete.

Danger of injury or danger of damage to property by uncontrolled vibrator head.

- ▶ Switch the machine off before you put it down.



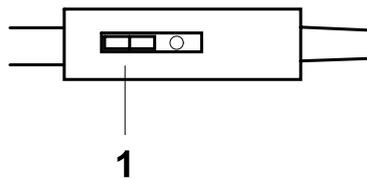
CAUTION

The vibrator head heats up if it is turned on and not immersed in the fresh concrete.

Hot surface can cause burns.

Damage to the machine with excessive wear.

- ▶ Do not operate the machine with the internal vibrator not immersed in the fresh concrete.



Item	Designation
1	ON/OFF switch

1. Slowly remove the machine from the fresh concrete; hold the vibrator head in the air.
2. Switch off the machine via the ON/OFF switch.
3. Wait until the machine has come to a complete standstill.
4. Put down the machine slowly.
Do not kink the protective hose and power cable.
5. Pull the plug from the plug receptacle.

7.4 Cleaning

Cleaning the machine

- ▶ Clean the machine and all components with water after each use.

Note: You can remove concrete residuals by immersing the running machine into gravel.

8 Maintenance



WARNING

Improper handling can result in injury or serious material damage.

- ▶ Read and follow all safety instructions of this operator's manual, see chapter *Safety*.
-



WARNING

Improper handling may cause a danger to life by electrocution.

- ▶ Only a qualified electrician is permitted to open the machine, perform repairs, and perform a subsequent safety check in accordance with applicable regulations.
-

8.1 Maintenance personnel qualifications

Qualifications for maintenance work

The maintenance tasks described in this operator's manual may be performed by any responsible user unless otherwise stated.

Some maintenance tasks may only be performed by specially trained personnel or by the service staff of your Wacker Neuson contact — these are specifically noted.

8.2 Maintenance schedule

Note: The time intervals mentioned here are reference values for normal operation. For extreme operation, e.g. continuous use, the service intervals should be halved.

Task	Daily before operation	Every 100 hrs.
Visual inspection of all parts for damage.	■	
Check the wear dimensions.	■	
Change oil in vibrator head (not for IRFU 30). *		■

* Have these tasks carried out by the service department of your Wacker Neuson representative person.

8.3 Maintenance work

Working in the workshop

Perform maintenance work in a workshop on a workbench. This has the following benefits:

- Protection of the machine of contamination on the construction site.
- A level and clean work surface makes work easier.
- There is a better overview over small parts and they are not lost as easily.

Visual inspection for damage



WARNING

A damaged machine part, protective hose or power cable can result in personal injury caused by electric current.

- ▶ Do not operate a damaged machine.
 - ▶ Have a damaged machine repaired immediately.
-
- ▶ Check all machine parts and components for damage.
 - ▶ Check the tightness of the switch diaphragm for the ON/OFF switch.

Checking the wear dimensions of the vibrator head

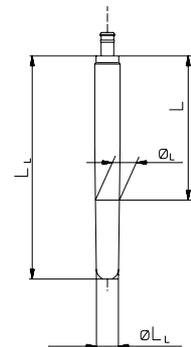
Wear dimensions:

- Minimum diameter of lower tube $\varnothing L_L$
- Minimum diameter of vibrator head $\varnothing L$
- Length of vibrator head L_L

Wear is highest at the end of the vibrator head.

Let the vibrator head be exchanged by your Wacker Neuson contact if the wear dimensions are reached at a certain point.

Machine type	Dimensions for vibrator head and lower tube [mm]			
	$\varnothing L_L$	L_L	$\varnothing L$	L
IR... 30	28 (30)	347 (353)	— *	— *
IR... 38	33 (38)	338 (345)	36 (38)	218
IR... 45	38 (45)	372 (382)	42 (45)	333
IR... 57	50 (58)	390 (400)	54 (58)	253
IR... 57k		320 (330)	54 (58)	213
IR... 65	52 (65)	475 (490)	58 (65)	322



* Vibrator head does not comprise 2 parts.

Dimensions in bold are wear dimensions.

Dimensions in brackets are original dimensions of new machines.

Changing the oil in the vibrator head

Take the machine to your Wacker Neuson representative to change the oil in the vibrator head.

Note: For the vibrator head of *IR...30* the oil cannot be exchanged. The vibrator head must be exchanged from the Wacker Neuson representative.

9 Malfunctions

Please refer to the following table if the machine does not work properly. It contains potential faults, their causes and remedies.

9.1 Bodyguard®

Malfunction	Cause	Remedy
Control lamp lights red. The line voltage is applied.	<ul style="list-style-type: none"> - The Bodyguard® has turned off the machine. - Machine malfunction. 	<ol style="list-style-type: none"> 1. Pull the plug from the plug receptacle. 2. Check power cable for damage – if damaged, have it replaced. * 3. Insert the plug into the plug receptacle. <p>If the fault is not remedied, have the machine repaired. *</p>
	<ul style="list-style-type: none"> - Water in inverter. - Defect in the vibrator head. 	Have the machine repaired. *
Control lamp does not light up.	No line voltage.	<ol style="list-style-type: none"> 1. Pull the plug from the plug receptacle. 2. Check power cable for damage – if damaged, have it replaced. * 3. Insert the plug into the plug receptacle.
	Bodyguard® is defective.	Have the machine repaired. *

* Have these tasks carried out by the service department of your Wacker Neuson representative person.

9.2 Inverter

Malfunction	Cause	Remedy
Control lamp lights red.	<ul style="list-style-type: none"> - Line voltage is interrupted. - Incorrect line voltage. 	Inverter starts automatically as soon as the correct line voltage is available (again).
Control lamp flashes red.	Defect in the vibrator head.	Have the machine repaired. *
Control lamp flashes red twice.	Inverter has switched off due to excess temperature.	<ol style="list-style-type: none"> 1. Allow the inverter to cool down. 2. Carry out a reset: Switch the machine off and on again.
Control lamp flashes red three times (for a short period).	The Bodyguard® has turned off the machine.	<ol style="list-style-type: none"> 1. Pull out the plug. 2. Eliminate the fault or have it eliminated. * 3. Insert the plug.
	No Bodyguard® present.	Have the machine reset to its original condition. *

* Have these tasks carried out by the service department of your Wacker Neuson contact person.

10 Disposal

10.1 Disposal of waste electrical and electronic equipment

For customers in EU countries

This device is subject to the European Directive 2002/96/EC on waste electrical and electronic equipment (WEEE) and the corresponding national legislation. The WEEE directive outlines the procedure for handling electrical waste equipment across the EU.



The device is labelled with the symbol of a crossed out dustbin shown here. This means you may not dispose of it with normal household waste but in a separate environmentally-friendly waste collection.

This device is a professional electrical tool designed for commercial applications only (B2B device according to WEEE directive). Contrary to equipment used in most private households (B2C devices), in some EU countries such as Germany, this device may not be disposed of at a collection point in a public disposal facility (for example at public waste depots). In case of doubt, ask the sales outlet about the proper disposal procedure for B2B electrical equipment in your country and ensure you dispose of the device in accordance with the valid legal guidelines. Please also note any information in the sales contract and the general terms and conditions from the point of sales.

The proper disposal of this device prevents the occurrence of any negative effects on people or the environment, follows the specific procedures for handling harmful substances and enables valuable raw materials to be recycled.

For customers in non-EU countries

The proper disposal of this device prevents the occurrence of any negative effects on people or the environment, follows the specific procedures for handling harmful substances and enables valuable raw materials to be recycled. Therefore, we recommend that this device is disposed of in a separate, environmentally-friendly waste collection and not with normal household waste. In some cases, national legislation also stipulates the separate disposal of electric and electronic products. Please ensure you dispose of this device in accordance with the valid regulations in your country.

11 Technical data

11.1 IRFU 30

Designation	Unit	IRFU 30/120	IRFU 30/230
Item no.		0610101 0610102 0610277	0008959 0610276 0610278
Rated voltage	V	110–130 1~	220–240 1~
Rated frequency	Hz	50/60	
Rated power consumption	W	400	
Rated current consumption	A	4.4	2.2
Diameter of vibrator head	mm (in)	30 (1.18)	
Length of vibrator head	mm (in)	353 (13.90)	
Vibration range	mm (in)	2.0 (0.08)	
Class rating *		I	
Protection class **		IP67	
Oil specification		SAE 0W-30 (API SF or superior)	
Oil quantity	cm ³ (in ³)	8 (0.49)	
Sound pressure level L _{pA} at operator's station ***	dB(A)	76	
Total vibration value of the acceleration a _{hV} ****	m/s ²	0.7	
Uncertainty K	m/s ²	0.5	

* In accordance with DIN EN 61140, for explanation see Chapter *Glossary*.

** In accordance with DIN EN 60529, for explanation see Chapter *Glossary*.

*** According to DIN EN ISO 11201.

****Determined according to DIN EN ISO 5349, measured at a distance of 2 m (6.6 ft) from the lower tube, freely suspended in the air, at nominal speed.

11.2 IRFU 38

Designation	Unit	IRFU 38/120	IRFU 38/230
Item no.		0610099 0610100 0610246	0610025 0610245 0610247
Rated voltage	V	110–130 1~	220–240 1~
Rated frequency	Hz	50/60	
Rated power consumption	W	650	
Rated current consumption	A	7.0	3.5
Diameter of vibrator head	mm (in)	38 (1.50)	
Length of vibrator head	mm (in)	345 (13.59)	
Vibration range	mm (in)	1.9 (0.07)	
Class rating *		I	
Protection class **		IP67	
Oil specification		SAE 0W-30 (API SF or superior)	
Oil quantity	cm ³ (in ³)	(0.49)	
Sound pressure level at operator's station ***	dB(A)	79	
Total vibration value of the acceleration a_{hv} ****	m/s ²	0.7	
Uncertainty K	m/s ²	0.5	

* In accordance with DIN EN 61140, for explanation see Chapter *Glossary*.

** In accordance with DIN EN 60529, for explanation see Chapter *Glossary*.

*** According to DIN EN ISO 11201.

**** Determined according to DIN EN ISO 5349, measured at a distance of 2 m (6.6 ft) from the lower tube, freely suspended in the air, at nominal speed.

11.3 IRFU 45

Designation	Unit	IRFU 45/120	IRFU 45/230
Item no.		0610097 0610098 0610254	0610024 0610253 0610255 0610259 0610260
Rated voltage	V	110–130 1~	220–240 1~
Rated frequency	Hz	50/60	
Rated power consumption	W	880	
Rated current consumption	A	9.6	4.8
Diameter of vibrator head	mm (in)	45 (1.77)	
Length of vibrator head	mm (in)	382 (15.04)	
Vibration range	mm (in)	2.3 (0.09)	
Class rating *		I	
Protection class **		IP67	
Oil specification		SAE 0W-30 (API SF or superior)	
Oil quantity	cm ³ (in ³)	8 (0.49)	
Sound pressure level at operator's station ***	dB(A)	79	
Total vibration value of the acceleration a_{HV} ****	m/s ²	1.7	
Uncertainty K	m/s ²	0.5	

* In accordance with DIN EN 61140, for explanation see Chapter *Glossary*.

** In accordance with DIN EN 60529, for explanation see Chapter *Glossary*.

*** According to DIN EN ISO 11201.

****Determined according to DIN EN ISO 534, measured at a distance of 2 m (6.6 ft) from the lower tube, freely suspended in the air, at nominal speed.

11.4 IRFU 57

Designation	Unit	IRFU 57/120	IRFU 57/230	IRFU 57k/230
Item no.		0610008 0610009 0610264 0610269 0610270 0610272	0610007 0610263 0610265 0610273 0610274	0610262
Rated voltage	V	110–130 1~	220–240 1~	
Rated frequency	Hz	50/60		
Rated power consumption	W	1,100	1,100	920
Rated current consumption	A	12.0	6.0	5.0
Diameter of vibrator head	mm (in)	58 (2.28)		
Length of vibrator head	mm (in)	400 (15.75)		330 (12.99)
Vibration range	mm (in)	2.5 (0.10)		1.9 (0.07)
Class rating *		I		
Protection class **		IP67		
Oil specification		SAE 0W-30 (API SF or superior)		
Oil quantity	cm ³ (in ³)	12 (0.73)		
Sound pressure level at operator's station L _{pA} ***	dB(A)	79		
Total vibration value of the acceleration a _{hV} ****	m/s ²	2.2		
Uncertainty K	m/s ²	0.5		

* In accordance with DIN EN 61140, for explanation see Chapter *Glossary*.

** In accordance with DIN EN 60529, for explanation see Chapter *Glossary*.

*** According to DIN EN ISO 11201.

**** Determined according to DIN EN ISO 5349, measured at a distance of 2 m (6.6 ft) from the lower tube, freely suspended in the air, at nominal speed.

11.5 IRFU 65

Designation	Unit	IRFU 65/120	IRFU 65/230
Item no.		0610105 0610106 0610286 0610287 0610288 0610289	0610104 0610284 0610285 0610290
Rated voltage	V	110–130 1~	220–240 1~
Rated frequency	Hz	50/60	
Rated power consumption	W	1,400	1,840
Rated current consumption	A	15.0	10.0
Diameter of vibrator head	mm (in)	65 (2.56)	
Length of vibrator head	mm (in)	490 (19.29)	
Vibration range	mm (in)	2.5 (0.10)	
Class rating *		I	
Protection class **		IP67	
Oil specification		SAE 0W-30 (API SF or superior)	
Oil quantity	cm ³ (in ³)	12 (0.73)	
Sound pressure level at operator's station ***	dB(A)	79	
Total vibration value of the acceleration a_{HV} ****	m/s ²	3.4	
Uncertainty K	m/s ²	0.5	

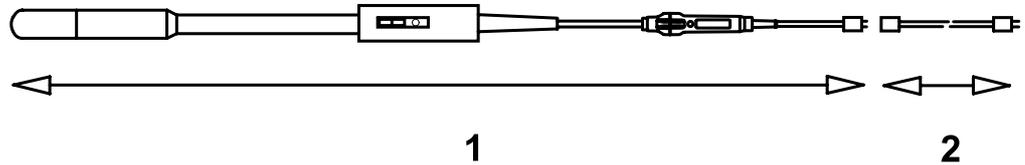
* In accordance with DIN EN 61140, for explanation see Chapter *Glossary*.

** In accordance with DIN EN 60529, for explanation see Chapter *Glossary*.

*** According to DIN EN ISO 11201.

****Determined according to DIN EN ISO 5349, measured at a distance of 2 m (6.6 ft) from the lower tube, freely suspended in the air, at nominal speed.

11.6 Extension cable



Item	Description
1	Machine, Standard Package
2	Extension cable



WARNING

Electrical voltage.
Injuries from electrocution.

- ▶ Check power cable and extension cable for signs of damage.
- ▶ Only use extension cables for which grounded conductors are connected to the plug and the coupling (only for machines of class rating I, see chapter *Technical Data*).

- Only use permitted extension cables, see chapter *Safety*.
- Refer to the following table for the required cross-section area of the extension cable:

Note: Refer to the nameplate or the chapter *Technical data* (via the item number) for the type designation and voltage rating of your machine.

Machine	Voltage [V]	Extension [m]	Cross-section area of cable [mm ²]
IRFU 30	110–130 1~	≤ 34	1.5
		≤ 57	2.5
		≤ 90	4.0
	220–240 1~	≤ 135	1.5
IRFU 38	110–130 1~	≤ 21	1.5
		≤ 36	2.5
		≤ 57	4.0
	220–240 1~	≤ 86	1.5
		≤ 142	2.5
IRFU 45	110–130 1~	≤ 16	1.5
		≤ 26	2.5
		≤ 41	4.0
	220–240 1~	≤ 63	1.5
		≤ 104	2.5
		≤ 150	4.0
IRFU 57	110–130 1~	≤ 12	1.5
		≤ 21	2.5
		≤ 33	4.0
	220–240 1~	≤ 50	1.5
		≤ 83	2.5
		≤ 132	4.0
IRFU 57k	220–240 1~	≤ 50	1.5
		≤ 83	2.5
		≤ 132	4.0

Machine	Voltage [V]	Extension [m]	Cross-section area of cable [mm ²]
IRFU 65	110–130 1~	≤ 10	1.5
		≤ 17	2.5
		≤ 26	4.0
	220–240 1~	≤ 30	1.5
		≤ 50	2.5
		≤ 79	4.0

Example

You utilize an IRFU 45/120 and want to use an extension cable with a length of 25 m.

The machine has an input voltage of 120 V.

According to the table, the extension cable must feature a cross-section area of 2.5 mm².

12 Glossary

Class rating

The class rating according to DIN EN 61140 specifies the safety measures for electrical equipment to avoid electrocution. There are four class ratings:

Class rating	Meaning
0	No special protection apart from the basic insulation. No grounded conductor. Plug connection without grounded conductor contact.
I	Connection of all conductive housing components to the grounded conductor. Plug connection with grounded conductor contact.
II	Reinforced or double insulation (protective insulation). No connection to the grounded conductor. Plug connection without grounded conductor contact.
III	Machines are operated on protective low voltage (< 50 V). Connection to the grounded conductor is not necessary. Plug connection without grounded conductor contact.

Protection class IP

The protection class according to DIN EN 60529 indicates the suitability of electrical equipment for use in certain ambient conditions as well as the protection against risks.

The protection class is specified by an IP code according to DIN EN 60529.

Code	Meaning 1st number: Protection against touching hazardous parts. Protection against permeating foreign objects.
0	Not protected against contact. Not protected against foreign bodies.
1	Protected against contact with the back of the hand. Protected against large foreign objects with diameter > 50 mm (1.9 in).
2	Protected against contact with one finger. Protected against medium-sized foreign objects (diameter > 12.5 mm (0.5 in)).
3	Protected against touch with a tool (diameter > 2.5 mm (0.01 in)). Protected against small foreign objects with (diameter > 2.5 mm (0.01 in)).
4	Protected against touch with a wire (diameter > 1 mm (0.03 in)). Protected against granular foreign objects (diameter > 1 mm (0.03 in)).
5	Protected against contact. Protected against dust depositing inside.
6	Completely protected against any contact. Protected from dust.

Code	Meaning 2nd number: Protection against permeating water
0	Not protected against permeating water.
1	Protected against water dropping vertically.
2	Protected against diagonally falling water (15° angle).
3	Protected against spray (60° angle).
4	Protected against spraying water from all directions.
5	Protected against water jets (nozzle) from any angle.
6	Protected against strong water jets (overflow).
7	Protected from temporary immersion in water.
8	Protected from ongoing immersion in water.



EC Declaration of Conformity

Manufacturer

Wacker Neuson SE
Preußenstraße 41, 80809 München

Product

Type	IRFU 30	IRFU 38	IRFU 45	IRFU 57	IRFU 65
Product type	Internal vibrator with integrated inverter				
Item no.	0008959, 0610101, 0610276, 0610277, 0610278,	0610025, 0610099, 0610245, 0610246, 0610247,	0610024, 0610097, 0610253, 0610254, 0610255, 0610259, 0610260	0610007, 0610008, 0610262, 0610263, 0610264, 0610265, 0610272, 0610273, 0610274	0610104, 0610105, 0610284, 0610285, 0610286, 0610287, 0610290,

Guidelines and standards

This is to certify that this product meets and complies with the relevant regulations and requirements of the following guidelines and standards:

2006/42/EC,

2006/95/EC, 2004/108/EC, EN 61000, EN 55014

Authorized person for technical documents: Axel Häret

Munich, 01.12.2009

Franz Beierlein
Head of product management

Dr. Michael Fischer
Head of Research and Development



America

CERTIFICATE

No. U8 09 05 54130 005

Holder of Certificate: **Wacker Neuson SE**

Preußenstr. 41
80809 München
GERMANY

Production Facility(ies): 64228

Certification Mark:



Product: **Handheld electric tools
(Concrete vibrators)**

Model(s): IRFU 30/120 US; IRSE-FU 30/120 US
IRFU 38/120 US; IRSE-FU 38/120 US
IRFU 45/120 US; IRSE-FU 45/120 US
IRFU 57/120 US; IRFU 57/120 8m US
IRFU 57/120 10m US; IRSE-FU 57/120 US
IRFU 65/120 US; IRFU 65/120 8m US

Parameters:

Rated voltage:	110-130V ~ 50/60 Hz				
Frequency:	IR...30	IR...38	IR...45	IR...57	IR...65
Rated power:	400W	650W	880W	1100W	1400W
Rated current:	4,4A	7,0A	9,6A	12,0A	15,0A
Protect class:	I				
Degree of (water) protection:	IP 67				

Tested according to:

CAN/CSA-C22.2 NO. 60745-2-12:2005
UL 60745-2-12:2005
The products are intended and certified for USA and Canada. Additional requirements may apply for other countries.

The product was voluntarily tested according to the relevant safety requirements and mentioned properties. It can be marked with the certification mark shown above. The certification mark must not be altered in any way. See also notes overleaf.

Test report no.: 034-340381-000

Date, 2009-06-04

Page 1 of 1



