

[www.wackergroup.com](http://www.wackergroup.com)

# VIBRATION RAMMER

## BS 30

0200056en - 01.2002
0005216 100

**Operator's Manual**



## Important information

**This machine has been equipped with an EPA certified engine.**

**Additional information can be found in the engine manufacturers notes.**

### **WARNING**

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

### **Caution**

This engine is an EPA engine.

Adjusting the engine speed will interfere with EPA certification and emissions.

Only authorized personnel can make adjustments to this engine.  
Please contact your nearest Motor dealer or your Wacker Dealer for more information.



### Emission Control System Information

#### Source of Emissions

The combustion process produces carbon monoxide, oxides of nitrogen, and hydrocarbons. Control of hydrocarbons and oxides of nitrogen is very important because, under certain conditions, they react to form photochemical smog when subjected to sunlight. Carbon monoxide does not react in the same way, but it is toxic.

Wacker utilizes lean carburetor settings and other systems to reduce the emissions of carbon monoxide, oxides of nitrogen, and hydrocarbons.

#### The U.S. and California Clean Air Acts

EPA and California regulations require all manufacturers to furnish written instructions describing the operation and maintenance of emission control systems.

The following instructions and procedures must be followed in order to keep the emissions from your Wacker engine within the emissions standards.

#### Tampering and Altering

Tampering with or altering the emission control system may increase emissions beyond the legal limit. Among those acts that constitute tampering are:

- Removal or alteration of any part of the intake, fuel, or exhaust systems.
- Altering or defeating the speed-adjusting mechanism to cause the engine to operate outside its design parameters.

#### Problems That May Affect Emissions

If you are aware of any of the following symptoms, have your engine inspected and repaired by your servicing dealer.

- Hard starting or stalling after starting.
- Rough idle.
- Misfiring or backfiring under load.
- Afterburning (backfiring).
- Black exhaust smoke or high fuel consumption.

## Replacement Parts

The emission control systems on your Wacker engine were designed, built, and certified to conform with EPA and California emissions regulations. We recommend the use of genuine Wacker parts whenever you have maintenance done. These original-design replacement parts are manufactured to the same standards as the original parts, so you can be confident of their performance. The use of replacement parts that are not of the original design and quality may impair the effectiveness of your emission control system.

A manufacturer of an aftermarket part assumes the responsibility that the part will not adversely affect emission performance. The manufacturer or rebuilder of the part must certify that use of the part will not result in a failure of the engine to comply with emission regulations.

## Maintenance

Follow the maintenance schedule. Remember that this schedule is based on the assumption that your machine will be used for its designed purpose. Sustained high-load or high-temperature operation, or use in unusually wet or dusty conditions, will require more frequent service.

## OXYGENATED FUELS

Some conventional gasolines are being blended with alcohol or an ether compound. These gasolines are collectively referred to as oxygenated fuels. To meet clean air standards, some areas of the United States and Canada use oxygenated fuels to help reduce emissions.

If you use an oxygenated fuel, be sure it is unleaded and meets the minimum octane rating requirement.

Before using an oxygenated fuel, try to confirm the fuel's contents. Some States / Provinces require this information to be posted on the pump.

The following are EPA-approved percentages of oxygenates:

**ETHANOL** - (ethyl or grain alcohol) 10% by volume. You may use gasoline containing up to 10% ethanol by volume. Gasoline containing ethanol may be marketed under the name "Gasohol".

**MTBE** - (methyl tertiary butyl ether) 15% by volume. You may use gasoline containing up to 15% MTBE by volume.

**METHANOL** - (methyl or wood alcohol) 5% by volume. You may use gasoline containing up to 5% methanol by volume, as long as it contains cosolvents and corrosion inhibitors to protect the fuel system. Gasoline containing more than 5% methanol by volume may cause starting and/or performance problems. It may also damage metal, rubber, and plastic parts of your fuel system.

If you notice any undesirable operating symptoms, try another service station, or switch to another brand of gasoline.

Fuel system damage or performance problems resulting from the use of an oxygenated fuel containing more than the percentages of oxygenates mentioned above are not covered under warranty.

### **Emission Control System Warranty**

Your new Wacker engine complies with the U.S. EPA emissions regulations. Wacker provides the same emission warranty coverage for engines sold in all 50 states.

## **YOUR WARRANTY RIGHTS AND OBLIGATIONS**

### **All States**

Wacker must warrant the emission control system on your engine for the period of time listed below provided there has been no abuse, neglect or improper maintenance of your engine. Where a warrantable condition exists, Wacker will repair your engine at no cost to you including diagnosis, parts and labor.

Your emission control system may include such parts as the carburetor, the ignition system and the catalytic converter.

Also included may be hoses, connectors and other emission-related assemblies.

### **MANUFACTURER'S WARRANTY COVERAGE:**

The 1998 and later engines are warranted for two years. If any emission-related part on your engine is defective, the part will be repaired or replaced by Wacker.

### **OWNER'S WARRANTY RESPONSIBILITY:**

As the engine owner, you are responsible for the performance of the required maintenance listed in your owner's manual. Wacker recommends that you retain all receipts covering maintenance on your engine, but Wacker cannot deny warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the engine owner, you should be aware that Wacker may deny you warranty coverage if your engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your engine to a Wacker dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact your local Wacker dealer.

### **WARRANTY COVERAGE:**

Wacker engines sold after January 1, 1998, are covered by this Emission Control System Warranty for a period of two years from the date of delivery to the original retail purchaser. This warranty is transferable to each subsequent purchaser for the duration of the warranty period.

Warranty repairs will be made without charge for diagnosis, parts or labor. All defective parts replaced under this warranty become property of Wacker. A list of warranted parts is located on the next page. Normal maintenance items, such as spark plugs and filters, that are on the warranted parts list are warranted up to the required replacement interval only.

Wacker is also liable for damages to other engine components caused by a failure of any warranted parts during the warranty period.

Only Wacker approved replacement parts may be used in the performance of any warranty repairs and must be provided without charge to the owner. The use of replacement parts not equivalent to the original parts may impair the effectiveness of your engine emission control system. If such a replacement part is used in the repair or maintenance of your engine, and an authorized Wacker dealer determines it is defective or causes a failure of a warranted part, your claim for repair of your engine may be denied. If the part in question is not related to the reason your engine requires repair, your claim will not be denied.



### **TO OBTAIN WARRANTY SERVICE:**

You must take your Wacker product along with proof of original purchase date, at your expense, to any Wacker authorized dealer during their normal business hours. Claims for repair or adjustment found to be caused solely by defects in material or workmanship will not be denied because the engine was not properly maintained and used.

### **EXCLUSIONS:**

FAILURES OTHER THAN THOSE RESULTING FROM DEFECTS IN MATERIAL OR WORKMANSHIP ARE NOT COVERED BY THIS WARRANTY. THIS WARRANTY DOES NOT EXTEND TO EMISSION CONTROL SYSTEMS OR PARTS WHICH ARE AFFECTED OR DAMAGED BY OWNER ABUSE, NEGLECT, IMPROPER MAINTENANCE, MISUSE, MISFUELING, IMPROPER STORAGE, ACCIDENT AND/OR COLLISION, THE INCORPORATION OF, OR ANY USE OF, ANY ADD-ON OR MODIFIED PARTS, UNSUITABLE ATTACHMENTS, OR THE UNAUTHORIZED ALTERATION OF ANY PART.

THIS WARRANTY DOES NOT COVER REPLACEMENT OF EXPENDABLE MAINTENANCE ITEMS MADE IN CONNECTION WITH REQUIRED MAINTENANCE SERVICES AFTER THE ITEM'S FIRST SCHEDULED REPLACEMENT AS LISTED IN THE MAINTENANCE SECTION OF THE PRODUCT OWNER'S MANUAL, SUCH AS SPARK PLUGS AND FILTERS.

DISCLAIMER OF CONSEQUENTIAL DAMAGE AND LIMITATIONS OF IMPLIED WARRANTIES:

WACKER DISCLAIMS ANY RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES SUCH AS LOSS OF TIME OR THE USE OF THE POWER EQUIPMENT, OR ANY COMMERCIAL LOSS DUE TO THE FAILURE OF THE EQUIPMENT; AND ANY IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. THIS WARRANTY IS APPLICABLE ONLY WHERE THE U.S. EPA EMISSION CONTROL SYSTEM WARRANTY REGULATION IS IN EFFECT.

<b>SYSTEMS COVERED BY THIS WARRANTY</b>	<b>PARTS DESCRIPTIONS</b>
FUEL METERING	CARBURETOR ASSEMBLY
EXHAUST SYSTEM	MUFFLER
AIR INDUCTION	AIR FILTER HOUSING AIR FILTER ELEMENT*
IGNITION	FLYWHEEL MAGNETO IGNITION MODULE SPARK PLUG CAP SPARK PLUG*
MISCELLANEOUS PARTS	TUBING, FITTINGS, SEALS, GASKETS AND CLAMPS ASSOCIATED WITH THESE LISTED ITEMS
* Indicates expendable maintenance items.	

## Foreword

For your own safety and protection from bodily injuries, carefully read, understand and follow the safety instructions in this manual.

Please operate and maintain your Wacker machine in accordance with the instructions in this manual.

Defective machine parts are to be replaced as soon as possible.

All rights, especially the right for copying and distribution are reserved.

Copyright by Wacker Construction Equipment AG.

No part of this publication may be reproduced in any form or by any means, electronic or mechanical, including photocopying, without express permission in writing from Wacker Construction Equipment AG.

Any type of reproduction, distribution or saving on data carriers of any type or method not authorized by Wacker represents an infringement of valid copyrights and will be prosecuted.

We expressly reserve the right to technical modifications- even without express due notice - which aim at improving our machines or their safety standards.

<b>Important information</b>	<b>1</b>
<b>Emission Control System Information</b>	<b>3</b>
<b>FOREWORD</b>	<b>9</b>
<b>SAFETY INSTRUCTIONS</b>	<b>12</b>
General instructions	12
Operation	12
Safety checks	13
Maintenance	13
Transport	13
Maintenance checks	13
<b>TECHNICAL DATA</b>	<b>15</b>
<b>DESCRIPTION</b>	<b>16</b>
Applications	16
Description of function	16
<b>TRANSPORT TO WORK SITE, RECOMMENDATIONS ON COMPACTION</b>	<b>17</b>
Transport to work site	17
Recommendations on compaction	17
<b>OPERATION</b>	<b>18</b>
Operation	18
After operation	18
<b>MAINTENANCE</b>	<b>19</b>
Maintenance schedule	19
Engine	20
Ramming system	20
Assembly instructions	20
Disassembly engine	20
Disassembly ramming system	21
Assembly	21
<b>FAILURES</b>	<b>22</b>
Engine will not start	22
Vibratory rammer does not work, even though engine is running	22

<b>LABELS</b>	<b>23</b>
<b>TORQUE WRENCH SETTINGS</b>	<b>24</b>
<b>EC - CONFORMITY-CERTIFICATE</b>	<b>25</b>

## SAFETY INSTRUCTIONS FOR THE USE OF VIBRATION RAMMERS WITH COMBUSTION ENGINE

### General instructions


1. Vibration rammers may only be operated by persons who
  - \* are at least 18 years of age,
  - \* are physically and mentally fit for this job
  - \* have been instructed in guiding vibration rammers and proved their ability for the job to the employer
  - \* may be expected to carry out the job they are charged with carefully.

The persons must be assigned the job of guiding vibration rammers by the employer.

2. Vibration rammer may only be used for compaction jobs. Both the manufacturer's operating instructions and these safety instructions have to be observed.
3. The persons charged with the operation of vibration rammers have to be made familiar with the necessary safety measures relating to the machine. In case of extraordinary uses the employer shall give the necessary additional instructions.
4. It is possible that this vibration rammer exceeds the admissible sound level of 89 dB (A). According to the rules for the prevention of accidents regarding emission of noise, the employees have to wear ear protection if the sound level reaches 89 dB (A) or more.

### Operation

1. The functioning of operation levers or elements is not to be influenced or rendered ineffective.
2. During operation the operator may not leave the control elements.
3. The operator has to stop the engine of the vibrator before going breaks. The machine has to be placed such that it cannot turn over.
4. Stop engine before filling fuel tank. When refilling fuel tank, do not allow fuel to come into contact with the hot parts of the engine or spill onto the ground.
5. Do not smoke or handle open fire near this machine.
6. The tank lid must fit tightly. Shut fuel cock if available when stopping the engine. For long distance transports of machines operated by fuel or fuel-mixtures, the fuel tank has to be drained completely.

 **ATTENTION!** Leaky fuel tanks may cause explosions and must therefore be replaced immediately.

7. Do not operate the machine in areas where explosions may occur.
8. Make sure that sufficient fresh air is available when operating vibration rammers with combustion engines in enclosed areas, tunnels, adits and deep trenches. For this particular use we offer vibration rammers with electric drive
9. During operation keep your hands, feet and clothes away from the moving parts of the vibration rammer. Wear safety shoes.

10. The operation of this vibrator may cause stones to bounce up. During operation no one except the operator is to come near the machine.
11. The vibration rammer is to be guided in such a way that the operator is not squeezed between the vibrator and solid objects. Special care is required when working on uneven ground or when compacting coarse material. Make sure to stand firmly when operating the machine under such conditions.
12. Vibration rammers have to be used such that their stability is guaranteed.
13. When working near the edges of breaks, pits slopes, trenches and platforms, vibration rammers are to be operated such that there is no danger of their turning over or falling in.

### **Safety checks**

1. Vibration rammers may only be operated with all safety devices installed.
2. Before starting operation, the operator has to check that all control and safety devices function properly.
3. In case of defects of the safety devices or other defects reducing the operational safety of the vibration rammer, the supervisor has to be informed immediately.
4. In case of defects jeopardizing the operational safety of the vibrator, the machine has to be stopped immediately.

### **Maintenance**

1. Only use original spare parts. Modifications to this machine including the adjustment of the maximum engine speed set by the manufacturer are subject to the express approval of WACKER. In case of non-observance all liabilities shall be refused.
2. Stop engine and pull off spark plug cap (if cluded )before carrying out maintenance jobs to avoid unintentional starting of the engine. Deviations from this are only allowed if the maintenance job requires a running engine.
3. As soon as maintenance and repair jobs have been completed all safety devices have to be reinstalled properly.

### **Transport**

1. During transport, loading and unloading of vibration rammers by means of lifting devices, appropriate slinging means or hooks have to be used on the lifting points provided for this purpose on the vibration rammer.
2. The load-carrying capacity of the loading ramps has to be sufficient and the ramps have to be secure such that they cannot turn over. Make sure that no one be endangered by machines turning over or slipping or by moving machine parts.
3. When being transported on vehicles, precautions have to be taken that vibration rammers do not slip or turn over.

### **Maintenance checks**

According to the conditions and frequency of use, vibration rammers have to be checked for safe operation at least once a year by skilled technicians, such as those found at WACKER-service centers and have to be repaired if necessary.

**Please also observe the corresponding rules and regulations valid in your country.**





		<b>BS 30</b>
Machine No.		0005216 ...
Length x width x height	mm:	540 x 340 x 1000
Rammings shoe	mm:	280 x 150
Operating weight (masse)	kg:	30
Power transmission		From drive engine via centrifugal clutch
Percussion rate/min. throttle regulated	min <sup>-1</sup> :	830
Single stroke	J/mkp:	32 (3,2)
Stroke of ramming shoe up to	mm:	42
Drive motor		2-stroke petrol engine
Piston displacement	cm <sup>3</sup> :	80
Power	kW:	1,1
Engine speed	min <sup>-1</sup> :	4800
Fuel mixture ratio (gasoline-oil):		50 : 1
Fuel consumption	l/h:	0,45
Tank capacity	l:	2,2

The required sound specifications, called-for by the EC-Machine Regulations per Appendix 1, Paragraph 1.7.4.f, are

- sound pressure level at the operator's location  $L_{pA} = 92 \text{ dB(A)}$
- sound power level  $L_{wA} = 103 \text{ dB(A)}$

The sound values were determined according to ISO 3744 for the sound power level ( $L_{wA}$ ) and, alternately, ISO 6081 for the sound pressure level ( $L_{pA}$ ) at the operator's location.

The weighted effective acceleration value, determined according to ISO 8662, Part 1, is  $12 \text{ m/s}^2$ .

The sound and vibration measurements were carried out and obtained with the machine working on crushed gravel at nominal engine speed.

## Applications

Building and civil engineering: For all sorts of ramming jobs in confined areas, particularly suited to pack earth under pipes and to compact soil while erecting power pylons.

Concrete: Especially suited to compact dry mixtures.

## Description of function

The vibration required for compaction is produced by the ramming system, which is firmly attached to the ramming shoe.

The engine, which is flanged to the crankcase and is held in place by 3 screws, drives the ramming system over a gear transmission and a connecting rod. The engine torque is transmitted by means of a centrifugal clutch.

The centrifugal clutch interrupts the flow of power to the ramming system at low engine speeds, thus allowing for a perfect idling of the engine.

The advance movement in forward direction of the rammer is ensured by means of the tilt of the ramming system.

The engine can be switched off with the stop button or the fuel tap.

The drive engine works according to the 2-stroke principle, and is started mechanically by means of a recoil starter. The engine is air cooled and the air necessary for combustion is directed through the air filter.

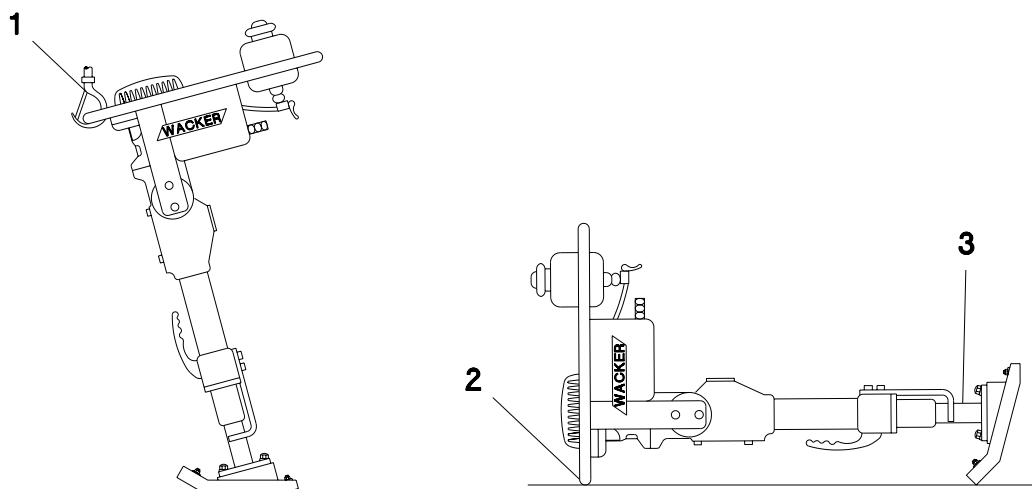
The guide handle and frame are mounted on the ramming system by means of a set of shockmounts, thereby assuring a minimum transmission of vibrations to the hands of the operator.

### Transport to work site

Conditions:

- Only use suitable lifting equipment with a minimum lifting capacity of 40 kg for the transport of the vibration rammer.
- Always switch off engine during transport!
- Attach appropriate securing devices to the central lifting point (1) provided for this purpose.
- Tie down the vibration rammer securely (2, 3) during transport on the loading surface of a vehicle.

**Note:** Also refer to the specifications in Chapter, Safety Instructions.



### Recommendations on compaction

Soil conditions

The maximum compaction depth of the soil depends on several factors relating to the nature of the soil, such as water content, grain-size distribution etc.

It is therefore not possible to specify a given layer depth.

**Recommendation:** In each case determine the maximum possible compaction depth through compaction tests and soil samples.

## Operation

### Fuel


2-stroke mixture oil/fuel ratio 1 : 50. Note! ratio of initial tank filling must be 1 : 25. *Unleaded fuel (gasoline) may be used!*

### Starting

Open fuel cock. If engine is cold close starter flap on carburettor. Place throttle into idling position. Pull hard on starter rope (max. 60 cm) until engine starts. Do not allow starter rope to snap back. After starting engine open starter flap.

### Clutch

When engine has warmed up open throttle completely.

 **ATTENTION!** To be observed for operation in winter. Extremely low temperatures necessitate 2-3 minutes warming up of the engine at idling speed. As a result of the cold, grease will have stiffened in the system. To overcome the difficulties arising from that, warm up the engine and lift the machine several times, then put system into operation by quickly opening the throttle.

## After operation

### Short-term interruptions of compaction work

Press stop button.

### Finishing of compaction work

Close fuel cock. Allow engine to run until fuel in carburettor is used up.

### Longer operational pauses

Clean rammer. Add corrosion preventative to fuel mixture and allow engine to run for 5 minutes. Oil parts susceptible to rust.

# Maintenance schedule

Check all external screw connections for tight fit approx. 8 hours after first operation.		
Components	Maintenance work	Maintenance interval
Air filter	Check for external damage and tight fit.	daily
	Check filter cartridge, clean or replace if necessary.	
Fuel	Check tank lid for tight fit, replace if necessary.	
Other parts	Check Bowden cable for easy - running. Check bellows for damage and tight fit.	
Fuel	Check fuel hose with filter for tightness and flow, replace if necessary.	weekly
Other parts	Tighten all screws on ramming shoe.	
Ignition system	Clean spark plug, check spark plug gap 0,5 mm.	monthly
Ramming system	First oil change.	50 hours
Ramming system	Further oil changes.	200 hours

## Engine

- \* Air filter: Clean by means of tapping or blowing. Do not use petrol or any similar cleaning agents. Change heavily soiled filters or filters already cleaned several times. Check filter seat before assembly.
- \* Fuel system and carburettor: Clean parts regularly with petrol, blow through jets.
- \* Spark plug: Clean dirty or wet spark plugs. Check spark plug gap (0,5 mm).
- \* Ignition: Gap between fan 0,3 - 0,4 mm.
- \* Cylinder: Keep cooling fins clean.
- \* Rewind starter: Oil bearing bolts lightly after approx. 200 hours of operation.

## Ramming system

### Grease check

- \* Lubricate breaker every day before starting operation. For this purpose apply the grease gun to the red-marked grease nipples on the crankcase (approx. 20 strokes of the grease gun).
- \* Grease spring of ramming system every 100 hours of operation For this purpose expose percussion system. (See disassembly of ramming system).
- \* Every 600 hours of operation renew grease in bearings of crank mechanism. Wash bearings thoroughly in pure petrol or trichlorethelene and fill the approx. 2/3 full with grease. Make sure not to fill in a greater or lesser amount than that specified.
- \* Check and/or tighten all external screw connections three hours after first operation or after repairs. This applies in particular to the mounting screws of the base plate of the ramming shoe.

## Assembly instructions

### Disassembly engine

#### Starter

- \* Detach starter from engine,
- \* Remove hexagon nut, remove elastic washer and guide disk,
- \* Remove torsion spring, catch,
- \* Wind up starter rope anti-clockwise and place return spring under tension by 1-2 rotations of the rope sheave,
- \* Remove rope sheave and return spring.

#### Access to the ignition system

Remove raised countersunk head screw, remove fan hood with starter, remove the ignition armature by loosening the screws. Use extractor (no. 0046503) to remove fan wheel.

#### Centrifugal clutch

 **ATTENTION!** Do not start disassembled engine before clutch is removed.

### Disassembly ramming system

- \* Loosen socket head cap screw.
- \* Lift crankcase up from guide cylinder until piston pin is accessible.
- \* Remove washer and circlip.
- \* Press piston pin out of guide piston.
- \* Loosen socket head cap screw and remove anti-torsional device.
- \* Remove spring cylinder out of guide cylinder.
- \* Remove ramming shoe.
- \* Remove eye bolt, spacer sleeve and Deva gasket out of guide cylinder.

#### **ATTENTION! Springs are under tension**

- \* Hold guide piston with a press before loosening bush cover, then remove bush cover and nylon wedge.
- \* Remove lower spring set.
- \* Remove damper and washer.
- \* Loosen hexagon nut with spring washer and piston guide.
- \* Remove upper spring set and damping bush.

### Assembly

For assembly proceed in the reversed order of dismantling and note the following:

- \* Wind up starter rope anti-clockwise and place return spring under tension by 1-2 rotations of the rope disc.
- \* Keep centrifugal drum and clutch free from grease.
- \* Remove grease from hexagon nut and guide piston. Secure hexagon nut with Omnifit 100 M and torque to 35 Nm (3,5 mkp).
- \* Replace nylon wedge. Wash bearings of mechanical part in petrol cleaning or similar do not grease.

**Engine will not start**

- Cause:
- No fuel in the tank.
  - Fuel cock closed.
  - Throttle control lever is not at "START" position.
  - Recoil starter pulled too slowly.
  - Air filter dirty.

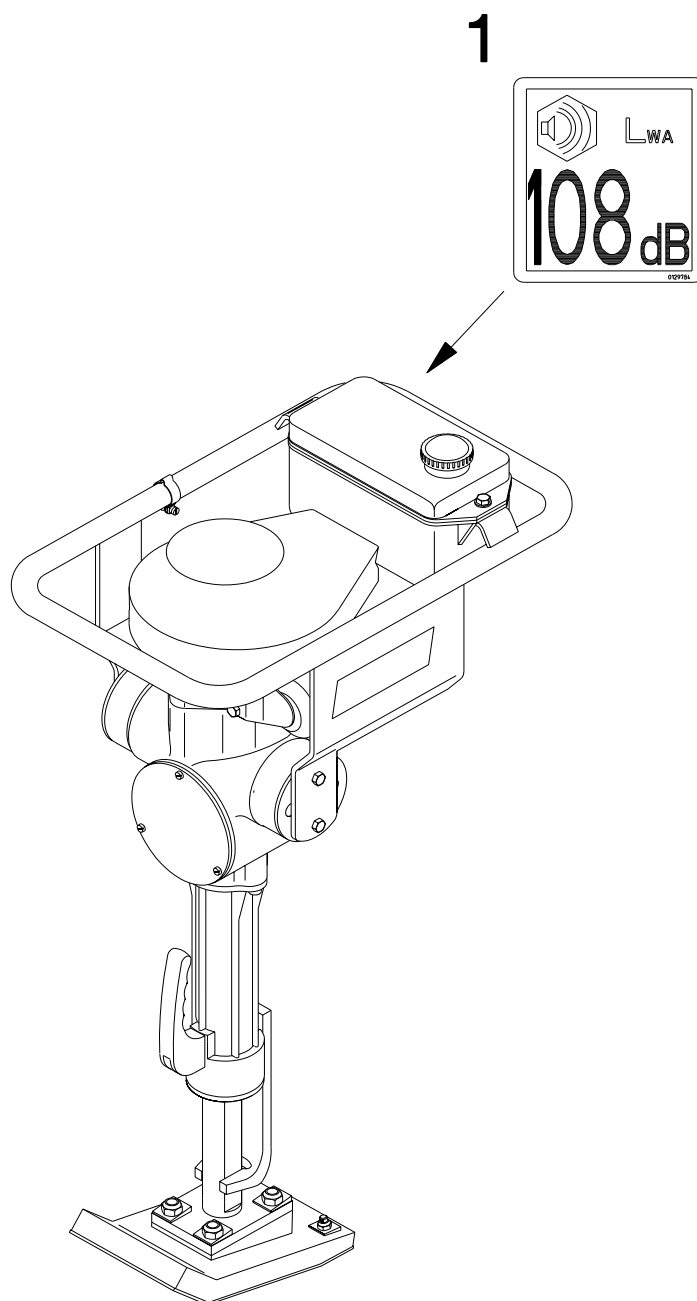
- Remedy:
- Check fuel level in tank and refill.
  - Open fuel cock.
  - Set throttle control lever to "START" position.
  - Pull recoil starter hard and quickly.
  - Clean air filter.

**Vibratory rammer does not work, even though engine is running**





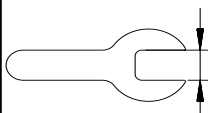

- Cause:
- Engine rpm's too low.
  - Centrifugal clutch does not engage.

- Remedy:
- Regulate rpm's with throttle control lever.
  - Call WACKER-Service.




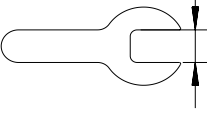
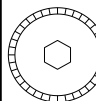
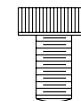





Ref.	Part No.	Qty.	Part
1	0129784	1	Decal - Sound power level

 Type	 8.8		 10.9		 12.9					
	ft lb	Nm	ft lb	Nm	ft lb	Nm	inch	Met.	inch	Met.
M3	* 11	1.2	*14	1.6	*19	2.1	7/32	5.5	-	2.5
M4	*26	2.9	*36	4.1	*43	4.9	9/32	7	-	3
M5	*53	6.0	6	8.5	7	10	5/16	8	-	4
M6	7	10	10	14	13	17	-	10	-	5
M8	18	25	26	35	30	41	1/2	13	-	6
M10	36	49	51	69	61	83	11/16	17	-	8
M12	63	86	88	120	107	145	3/4	19	-	10
M14	99	135	140	190	169	230	7/8	22	-	12
M16	155	210	217	295	262	355	15/16	24	-	14
M18	214	290	298	405	357	485	1-1/16	27	-	14
M20	302	410	427	580	508	690	1-1/4	30	-	17

\* = in.lb.

 Type	 SAE 5		 SAE 8				 			
	ft lb	Nm	ft lb	Nm	inch	Met.	ft lb	Nm	inch	Met.
No. 4	*6	0.7	*9	1.0	1/4	-	*12	1.4	3/32	-
No. 6	*12	1.4	*17	1.9	5/16	8	*21	2.4	7/64	-
No. 8	*22	2.5	*31	3.5	11/32	9	*42	4.7	9/64	-
No. 10	*32	3.6	*45	5.1	3/8	-	*60	6.8	5/32	-
1/4	6	8	9	12	7/16	-	12	16	3/16	-
5/16	13	18	19	26	1/2	13	24	33	1/4	-
3/8	23	31	33	45	9/16	-	43	58	5/16	-
7/16	37	50	52	71	5/8	16	69	94	3/8	-
1/2	57	77	80	109	3/4	19	105	142	3/8	-
9/16	82	111	115	156	13/16	-	158	214	-	-
5/8	112	152	159	216	15/16	24	195	265	1/2	-
3/4	200	271	282	383	1-1/8	-	353	479	5/8	-

1 ft.lb. = 1.357 Nm

1 inch = 25.4 mm

## EC - CONFORMITY-CERTIFICATE

**Wacker-Werke GmbH & Co. KG**

hereby certify that the construction equipment specified hereunder

1. Category

**Vibration rammer**

2. Make

**WACKER**

3. Type

**BS 30**

4. Type serial number of equipment

**0005216 ...**

has been produced in accordance with the following standards

- **EG - Maschinenrichtlinie i.d.F 91/368/EWG, Anh.I Nr. 1 und Nr. 3**

\* **89/392/EWG**

\* **91/368/EWG**

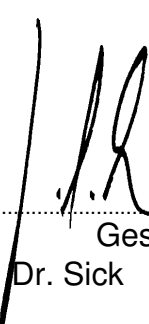
\* **93/44/EWG**

\* **EN 500-1, EN 500-4**

- **EMV - Richtlinie 89/336/EWG**

\* **EN 50082-1**

\* **VDE 0879-1**

  
.....  
Geschäftsleitung Technik  
Dr. Sick Beierlein

File certificate carefully

---

**Wacker-Werke GmbH & Co. KG**

Preußenstraße 41 \* 80809 München

Tel. (089) 35 40 21 \* Teletex: 89 73 95 viwa d \* Fax: (089) 35 40 23 90





# VDE Prüf- und Zertifizierungsinstitut

VDE VERBAND DER ELEKTROTECHNIK  
ELEKTRONIK INFORMATIONSTECHNIK e.V.

## C E R T I F I C A T E

Registration Number 6236/QM/06.97

This is to certify that the company

# WACKER



**Wacker Construction Equipment AG**  
**Wacker-Werke GmbH & Co. KG**

with the locations

**Head Office Munich**  
**Preussenstr. 41**  
**80809 München**

**Production plant Reichertshofen**  
**Karlsfeld logistics centre**  
**Sales regions with all branches all over Germany**

has implemented and maintains a  
**Quality System for the following scope**

**Machine manufacture**  
**Construction machines**

This Q System complies with the requirements of

**DIN EN ISO 9001:2000**

This Certificate is valid until 05.06.2006

**VDE Testing and Certification Institute**  
Certification

D-63069 Offenbach/Main, Merianstraße 28  
Date 02.06.2003

The VDE Testing and Certification Institute is accredited by DARA Accreditation Bodies  
according to DIN EN 45012 and notified in the EU under ID. No. 0366.







