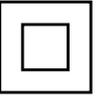


www.wackergroup.com

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11.2005	

Elektrik-hammer

EHB 10/... 

Operator's Manual

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.

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

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SAFETY INSTRUCTIONS FOR THE USE OF DRILLING AND BREAKING HAMMERS WITH ELECTRIC DRIVE

General instructions

1. Drilling and breaking hammers 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 operating drilling and breaking hammers and proven 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 operating drilling and breaking hammers by the employer.

2. Drilling and breaking hammers are to be applied for their proper use. Both the manufacturer's operator's manual and these safety instructions have to be observed.
3. The persons charged with the operation of these hammers 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 these drilling and breaking hammers exceed the admissible sound level of 89 dB (A). Operators must wear personal hearing protection if the admissible assessment sound level equals or exceeds 89 dB (A).

Operation

1. The function of operation levers or elements is not to be influenced or rendered ineffective.
2. Make sure that the machine is connected only to voltage and frequency as indicated on its name plate. Choose correct cross section for extension cord. See method of calculation instructions with diagram in this manual.
3. The operator has to switch off drilling and breaking hammers, to disconnect them from the electric mains and to store them in such a manner that they do not turn over before leaving the machines or going on breaks.
4. Wear safety goggles in order to avoid injuries to the eyes.
5. We recommend wearing suitable working gloves.
6. Wear safety shoes while working with drilling and breaking hammers.
7. Drilling and breaking hammers are always to be operated with both hands on the handles provided for this purpose.
8. When working with drilling and breaking hammers, especially when carrying out drilling jobs, the operator has to have a firm stand, particularly when working on scaffolding and ladders.
9. Drilling and breaking hammers are to be guided such that hand injuries caused by solid objects are avoided. When carrying out demolition jobs at elevated places, special care is required to prevent the machine or the operator from falling.
10. Avoid body contact with earthed components. When breaking connecting passages, make sure that there are no electric wires or gas pipes. No one may stay in the room to which the passage is broken through, as there is danger of injuries because of falling stones or tools.
11. During operation the tool holder must be closed. Tools and tool holder must be checked for wear in order to guarantee proper functioning of holder.
12. The operation of this machine may cause broken - off pieces to be flung away. Therefore, during operation, no one except the operator is to come near this machine.
13. Drilling and breaking hammers have to be disconnected from the electric mains before changing tools.
14. The tools always have to be in perfect conditions.
15. Do not operate these machine in areas where explosions may occur.

16. Do not misuse the electric cable to pull or lift up the unit or to pull the plug out of the socket. Protect cable from heat, oil and sharp edges.
17. Electric equipment and material may only be used if they comply with the operational and local safety requirements. They must be in proper condition and this condition is to be maintained.
18. Do not expose electric tools to rain. Do not use electric tools in damp or wet surroundings.

Safety checks

1. Drilling and breaking hammers 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. Before starting operation, the overload clutch of drilling hammers has to be checked for proper functioning.
4. Regularly check cable for damage.
5. In case of defects of the safety devices or other defects reducing the operational safety of the drilling and breaking hammers, the supervisor has to be informed immediately.
6. In case of defects jeopardizing the operational safety of the hammers, the machine has to be switched 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. Disconnect the drilling and breaking hammer from the electric mains before carrying out maintenance and repair jobs.
3. Work on the electric parts of the machines may only be carried out by skilled technicians.
4. The green and yellow ground wire of the connecting cable of machines without protective insulation has to be longer than the other wires so that it is not ripped out first in case the strain relief fails. A break in this wire would entail grave danger. Check ground wire for passage after repairs.
5. As soon as maintenance and repair jobs have been completed, all safety devices have to be reinstalled properly.

Transport

When being transported on vehicles, precautions have to be taken that these hammers do not slip or turn over.

Maintenance checks

According to the conditions and frequency of use, drilling and breaking hammers have to be checked for safe operation at least once every 6 months by skilled technicians, such as those found at Wacker-service depots and have to be repaired if necessary.

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

		EHB 10/230 EHB 10/230 THW EHB 10/230 DBP EHB 10/230 SEV EHB 10/230 BW	EHB 10/240 EHB 10/240 GB
Item no.		0006943 ... 0007082 ... 0007081 ... 0007083 ... 0007087 ...	0007084 ... 0007085 ...
Length x width x height (without tool)	mm:	545 x 105 x 245	
Operating weight (mass) without tool	kg:	10	
Voltage	V:	230 ~	240 ~
Power input	kW:	1,15	1,1
Current consumption	A:	5	4,5
Frequency	Hz:	50/60	50
Percussion rate electronic control	min ⁻¹ :	1300 - 2100	
Drill speed electronic control	min ⁻¹ :	170 - 265	
Special lubricating grase		Grease Unirex N2	
Shaft for drilling tools Shaft for breaking tools		hexagonal SW 19 x 80 SW 19 x 82,5	
Power transmission percussion system		From motor via crank mechanism to air-cushioned percussion system	
Power transmission drilling drive		From motor via crank mechanism to bevel gear, safety clutch, drive shaft, tool holder bushing	
Drive motor		Built-in insulatet universal motor for single phase operation	
Sound pressure level at operators station	L _{PA} :	96 dB(A)	
The weighted effective acceleration value, determined according to ISO 8662, Part 1	m/s ² :	is 7,7	

Application

This versatile breaking and drilling hammer is used in civil engineering and building industry, in concrete works, cast stone plants, foundries, by plumbing installation firms and communities. It is particularly suited for use on natural and cast stone, as well as for all kinds of brickwork and concrete. A wide selection of easily interchangeable tools is available for drilling holes from 12 to 125 mm, for breaking, chiselling, digging, puddling, hammering ramming and deburring.

Putting into operation

1. Attachment of the tool
 - * Snap out holder spring.
 - * Insert tool as far as it will go.
 - * Only use sharp tools.
 - * Snap back holder spring.

Use tools with shanks in proper condition to eliminate rebound blows. It is recommended to slightly grease or oil the tool shanks and tool holder bushing to avoid dry operation resulting in seizure.

2. Connectionn

This electric hammer is powered by 230/240 V, A. C. (single phase). A suitable plug is provided for connection.

During operation

1. Changing the application

The position for breaking or drilling is indicated by the arrow on the cylinder housing and the respective symbol situated opposite on the control lever. To change application turn lever 1/2 turn to the next notch.
2. Speed control

To reduce the power of the hammer turn knurling wheel in handle in anti-clockwise direction (-). Turn wheel as far as it will go. (Operation at reduced power is necessary for spot drilling and for work on brittle material). To set hammer to full power turn knurling wheel in clockwise direction (+).
3. Lock button

Lock control lever by means of lock button when using the hammer for long breaking operations. When pression on control tongue, lock button i released.

 **ATTENTION!** Do not use lock button for drilling jobs!
4. Handle at tool holder

Can be turned 360° according to need; tighten strongly with supplied tommy ban before starting work.

Disassembly

1. Tool holder/Cylinder housing
Remove pin. Remove supplementary handle with holder spring from tool holder. Remove cheese head screw. Remove tool holder, tool holder bushing, intermediate gear and intermediate plate. Remove cylinder housing with drive shaft from crankcase. Remove percussion piston.
2. Crankcase
Access to rotor circlip : Remove hexagon screws, take bearing cover and crank mechanism out of crankcase.
3. Disassembly of handle
Remove cheese head screws and slotted screws. Remove handle half.
4. Motor
Access to carbon brushes: Remove self-tapping screws remove cover. Take both carbon brushes out of brush holder. Access to stator pack and rotor: Remove cheese head screws, remove bearing bracket from crankcase. Remove self-tapping screws, then remove stator pack . After that pull out protection sleeve. Remove circlip and force out rotor.

Assembly

For assembly proceed in the reverse order to dismantling. The following has to be observed in particular:

- * All parts must be carefully cleaned and checked. Grease bearings, crank mechanism and percussion system with special grease (see technical data).
- * Clean front surfaces of cylinder housing and crankcase and seal with Omni Visc, model 1002.
- * Use Omnifit 230L to glue outer race of deep groove ball bearing.
- * After completion of any kind of repairs, test-run with increasing load.

Maintenance schedule

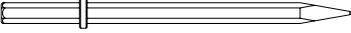
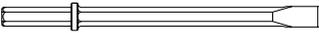
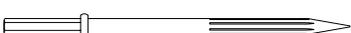
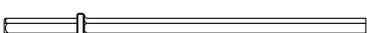
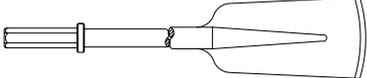
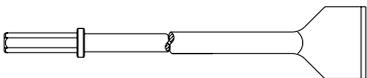
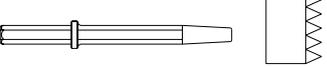
Check all external screw connections for tight fit approx. 8 hours after first operation.		
Component	Maintenance work	Maintenance interval
Feed line Miscellaneous Tools	Check for perfect condition - if cable defective, replace. Fan slits dirt - free - clean if necessary. Check the shafts and cutting edges - if necessary, sharpen, reforge or replace.	daily
Miscellaneous	Regrease via grease nipples.	20 hours
Tool bush	Check for wear - change if necessary.	monthly
Carbon brush Miscellaneous	Check for wear, remaining length about 9 mm - change if necessary. Check cheese head screws of housing for tight fit retighten if necessary - 25 Nm.	80 hours
Miscellaneous	Regrease crankshaft drive.	600 hours

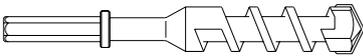
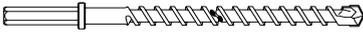
Maintenance and lubrication

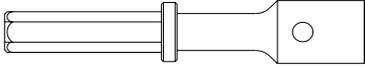
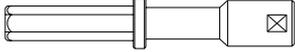
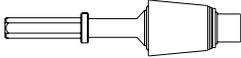
1. General instructions
Keep hammer and tools clean.

2. Motor
Carbon brushes: This hammer is equipped with automatic switch-off carbon brushes. These brushes switch-off the hammer as soon as their length is worn down to approx. 9 mm. Therefore, before starting a long operation check brushes for wear. Replace if necessary.

3. Mechanical part
Every 20 hours of operation moderately grease crank mechanism and percussion system via lubricating nipple situated on crankcase (see technical data). Use special grease. Check tool holder brushing for wear. The tool may have a play of max. 6 mm at a distance of approx. 200 mm from the entrance. If the bushing is worn to a greater degree, replace it to avoid damages and operational failures.

Shank for breaking: Hexagonal, spanner opening SW 19x82,5		Type	Ref. - No.
For breaking: Moil point	Effective length 230 mm 430 mm		0022763 0032860
Flat chisel, wide 24 mm	Effective length 230 mm		0022764
Wedge flat chisel, wide 25 mm	Effective length 190 mm		0109320
Star profile chisel	Effective length 250 mm		0109321
Blank	Effective length 660 mm		0034103
Flat spade, wide 90 mm	Effective length 280 mm		0022769
Asphalt spade, wide 80 mm	Effective length 320 mm		0032601
Plaster chisel, wide 65 mm	Effective length 180 mm		0022772
For roughing: Bush hammer holder and bush hammer inserts	Effective length 110 mm 5 x 5 teeth 7 x 7 teeth 9 x 9 teeth		0022775 2006935 2006937 2006939

Shank for drilling tools: Hexagonal, spanner opening SW 19x80 (82,5)		Type	Ref. - No.
For drilling purposes: Carbide-tipped twist drill,	160 mm WI ø 26 mm ø 42 mm		0065671 0047653
Carbide-tipped twist drill,	200 mm WI ø 22 mm ø 25 mm		0096626 0096627
	250 mm WI ø 18 mm ø 20 mm ø 28 mm ø 32 mm ø 35 mm ø 40 mm		0096628 0096629 0096630 0096631 0096632 0096633
Carbide-tipped twist drill, (We recommend predrilling with short drill)	400 mm WI ø 22 mm ø 25 mm ø 28 mm ø 32 mm ø 40 mm ø 45 mm		0096634 0096635 0096636 0096637 0096638 0096639
	550 mm WI ø 35 mm ø 55 mm ø 65 mm ø 80 mm		0096640 0065672 0039859 0065673
Pilot drill	50 mm WI ø 16 mm		0124287
	75 mm WI ø 16 mm		0124288
Threaded bolt	65 mm WI		0124277
Adapter	200 mm WI		0124278
	300 mm WI		0124279
	460 mm WI		0124280
Adapter with WACKER-connection	330 mm WI		0124281
Conveyor spiral for concrete and natural stone	80 mm Whole length		0124282
	ø 33 mm		0124283
	ø 48 mm		0124284
	ø 63 mm		0124285
	ø 78 mm		

Shank for drilling tools: Hexagonal, spanner opening SW 19x80 (82,5)		Type	Ref. - No.
Cone adapter 1:10	55 mm WI		0037105
Machine adapter			0124275
Adapter for Hilti tools			0063747
Cross drill crown type G	ø 65 mm ø 70 mm ø 80 mm ø 90 mm ø 100 mm ø 110 mm ø 125 mm		0124289 0124290 0124291 0124292 0124293 0124294 0124295
Cross drill crown type X	ø 35 mm ø 40 mm ø 42 mm ø 50 mm ø 52 mm ø 55 mm ø 60 mm ø 65 mm ø 70 mm ø 80 mm ø 90 mm ø 100 mm ø 110 mm ø 125 mm		0124296 0124297 0124298 0124299 0124300 0124301 0124302 0124303 0124304 0124305 0124306 0124307 0124308 0124309
Cross drill crown type S	ø 35 mm ø 42 mm ø 50 mm ø 52 mm ø 55 mm ø 60 mm ø 65 mm ø 70 mm ø 80 mm ø 90 mm ø 100 mm ø 110 mm ø 125 mm		0124310 0124311 0124312 0124313 0124314 0124315 0124316 0124317 0124318 0124319 0124320 0124321 0124322

ATTENTION! Use safety glasses when doing this job.

When reforging of the tools becomes necessary, care should be taken that only that part of the tool that needs reforging is heated. Moreover, it is important that the heat is increased slowly and that it is constantly watched, otherwise heat cracks are likely to occur on hardened tools.

Forging temperature: 800° to 1000° (1470° to 1830° F) bright cherry - red to yellow

The tool should be forged within these limits and, if necessary, should be heated repeatedly. A temperature below 800° C (1470° F) may cause tension cracks, whereas when the temperature exceeds 1000° C (1830° F) the steel is overheated and spoilt. After forging, the tools should be quenched in an ash or sand box. Do not harden the tools before they have cooled from the forging.

Hardening: Heat point or blade in direction of tool shank up to a cherry red colour (780° - 810° C) over the shortest distance possible (approx. 30 - 40 mm), then quench in water with approx. 20° C while constantly swinging tool around.

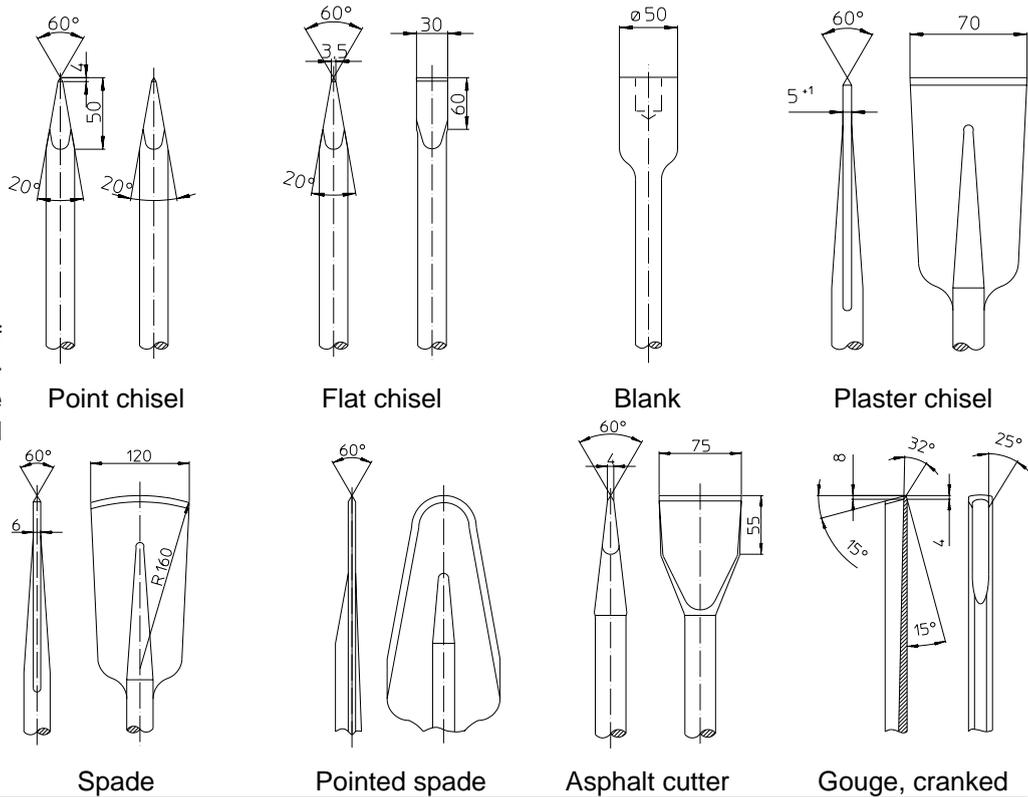
Tempering: Heat tool at shaft approx. 10 cm behind tip until point or blade reaches brown-red tempering colour:

Let tool cool off in air.

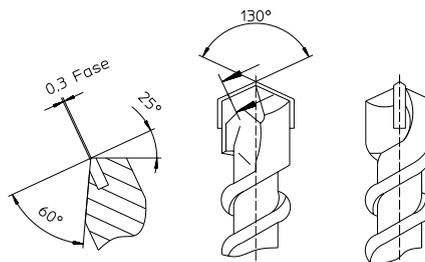
Polish one side of the tool's point or blade to be able to recognize tempering colour.

Grinding: Sharpen the insert tools on grinding wheels-favourably sandstone-under sufficient cooling water. The edges should not be allowed to turn blue as the hardness of the tools will be affected. Take care to achieve the proper cutting edge and pointed angle. The harder the material to be cut, the greater the angle should be.

Tools made out of tempering steel - C70W2 - can be forged, hardened and ground



Tools with hardmetal bits may only be sharpened on special emerywheel machines for hard metal



Carbide-tipped twist drill

Selection of required cross section for extension of cables and power lines

This procedure takes into consideration:

1. The ohmic and inductive resistance of the line with an admissible loss of voltage of 5% and $\cos \phi = 0,8$ as per voltage-frequency-curves.
2. The admissible warming-up of the lines as per VDE standard (table of required minimum cross section).

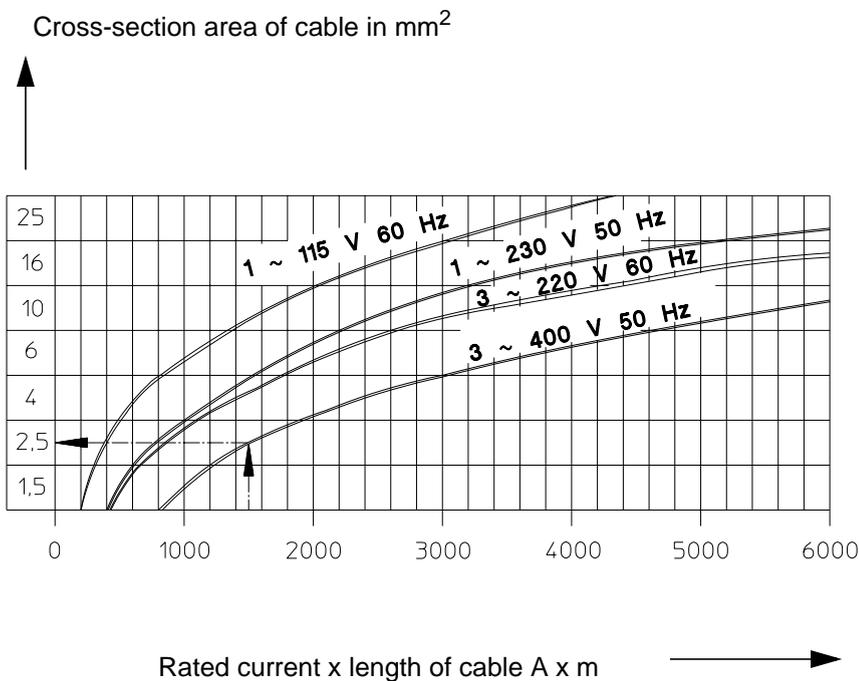
ATTENTION! The larger one of both cross sections has to be chosen.

Example:

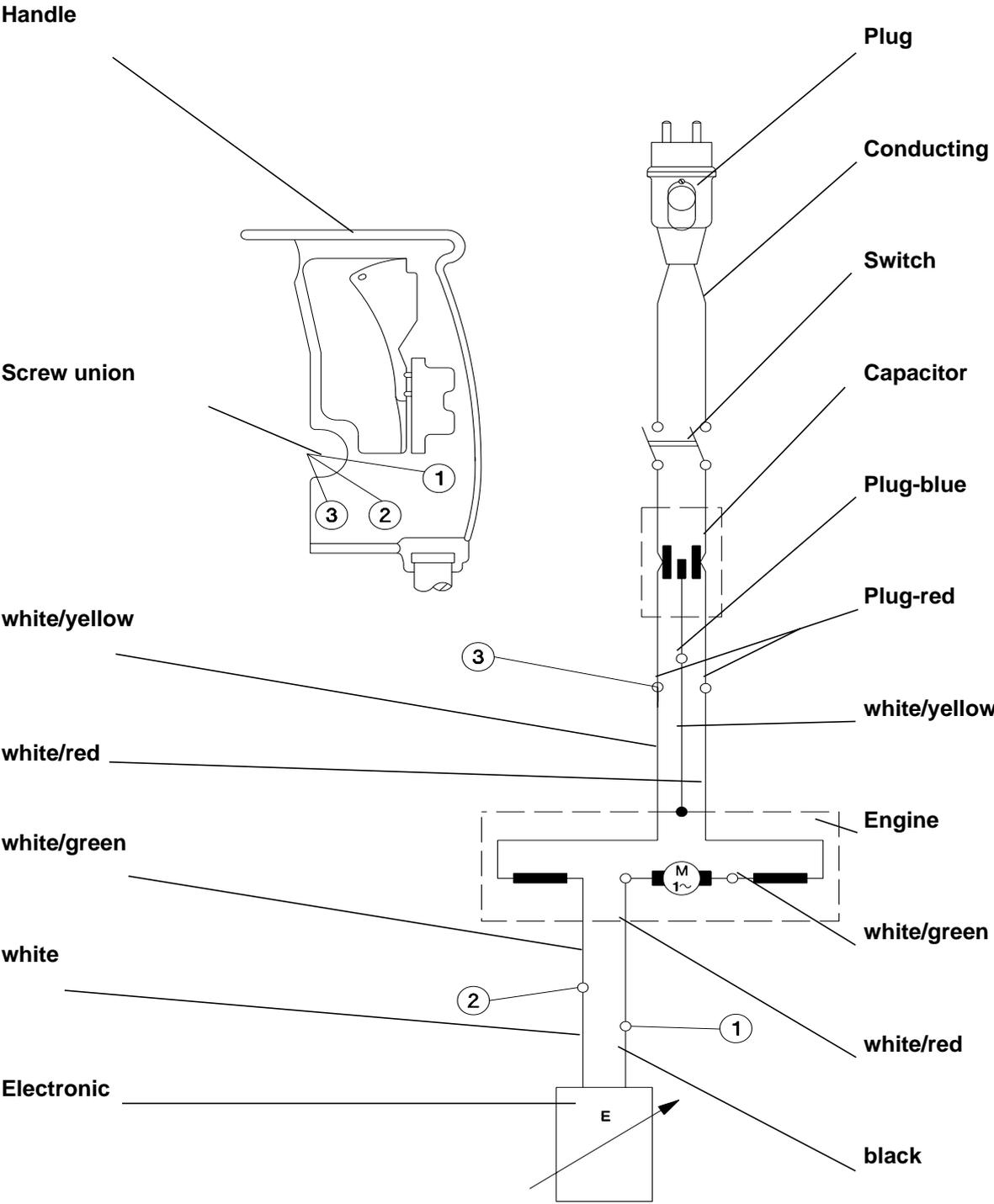
Nominal voltage 3 ~ 400 V, 50 Hz
 Rated current 15 A Line length 100 m
 $15 \text{ A} \times 100 \text{ m} = 1500 \text{ A} \times \text{m}$

Cross section as per diagramm: 2,5 mm²
 Cross section as per table: 15 A : 1 mm²
 Chosen cross section: 2,5 mm²

Voltage - Frequency - Curves



Minimum cross-section area according to VDE		
Cable	Max. load	Max. fuse
mm ²	A	A
1	15	10
1,5	18	10/3~16/1~
2,5	26	20
4	34	25
6	44	35
10	61	50
16	82	63
25	108	80



EC - CONFORMITY-CERTIFICATE

Wacker Construction Equipment AG , Preußenstraße 41, 80809 München

hereby certify that the construction equipment specified hereunder:

1. Category: **Breaking / Drilling hammer**
2. Type:

EHB 10/230	EHB 10/240
-------------------	-------------------

3. Equipment item number:

0006943 ... 0007081 ... 0007082 ... 0007083 ... 0007087 ...	0007084 ... 0007085 ...
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4. Operating weight:

10 kg

has been evaluated in conformity with Directive 2000/14/EC:

Conformity assessment procedure	At the following notified body	Measured sound power level	Guaranteed sound power level
Annex VIII	VDE Prüf- und Zertifizierungsinstitut Zertifizierungsstelle Merianstraße 28 63069 Offenbach/Main	104 dB(A)	105 dB(A)

and has been manufactured in accordance with the following directives:

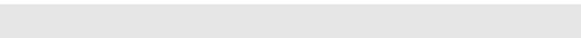
- * **2000/14/EG**
- * **89/336/EG**
- * **98/37/EG**
- * **73/23/EG**

ppa Otto C

Dr. Stenzel
Research and Development Management

File certificate carefully





VDE Prüf- und Zertifizierungsinstitut

VDE VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

CERTIFICATE

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 DAR Accreditation Bodies
according to DIN EN 45012 and notified in the EU under ID. No. 0366.



