



KERNLOCHBOHRER[®]
PROFESSIONAL POWER TOOLS



Operating instructions

MKB-35HD MKB-50HD

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Operating instructions

WARNING

The magnetic drilling machines of the MKB series are intended for professional use and may only be operated by instructed persons. Strictly adhere to the instructions in the operating manual to avoid electric shock or fire.

In case of violations of the operating instructions, which may lead to injuries or machine damage, our company declines any responsibility.

In conjunction with the appropriate core drills, the machine is intended for drilling in all magnetic metals.

The machine may only be serviced by persons who have the appropriate qualification and certification.

THANKS TO THE BUYER

Thank you for purchasing a magnetic drilling machine of the MKB series from Kernlochbohrer GmbH. Please read the operating instructions and observe the safety instructions. Through proper operation, you will fully appreciate the excellent performance of our products. Keep this manual in a safe place for future reference. If you have any questions regarding the operation of the magnetic drilling machine, please contact Kernlochbohrer GmbH directly. We are available to answer your questions at any time.

ABOUT THIS GUIDE

These operating instructions are for the models

MKB-35HD

MKB-50HD

Check the machine model against the nameplate.



SAFETY REGULATIONS

- ❖ Read all precautions before start-up and keep the operating instructions.
 - ❖ Please follow the operating instructions carefully, as failure to follow these safety precautions and instructions may cause electric shock, fire and/or serious injury.
1. Keep your work area clean and well lit. Disorder or unlit work areas can lead to accidents.
 2. Do not work with the power tool in potentially explosive atmospheres if flammable liquids, gases or dust are present. Power tools generate sparks that can ignite dust or fumes.
 3. Keep children and other persons away from the power tool during use. If you are distracted, you may lose control of the tool.

4. Be attentive, work with concentration and pay attention to what you are doing. Do not use a power tool when you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while using a power tool can result in serious injury.
5. Wear suitable protective equipment and always protective goggles. Wearing suitable protective equipment such as dust mask, non-slip safety shoes, gloves, hard hat or hearing protection reduces the risk of injury.



6. Avoid unintentional starting of the machine. Make sure that the power tool is switched off before connecting it to the power supply. If you have your finger on the switch when carrying the power tool or connect the machine to the power supply when it is switched on, this can lead to accidents.
7. Remove setting tools or Allen keys before switching on the power tool. A tool or Allen key that is on a rotating device can cause injuries.
8. Avoid unusual postures. Ensure a secure footing and maintain your balance at all times. Do not work on a ladder. This will give you better control of the power tool in unexpected situations.
9. Wear appropriate clothing. Do not wear loose clothing or jewelry. Keep hair, clothing and gloves away from moving parts. Loose clothing, jewelry or long hair can be caught by moving parts.

10. Do not overload the device. Use the appropriate power tool for your work. With the appropriate power tool, you will work better and more gently in the specified power range.
11. Do not use a power tool whose switch is damaged. A power tool that cannot be switched on and off is dangerous and must be repaired.
12. Unplug the power tool from the wall outlet before making any adjustments, replacing accessories, or setting aside the power tool. This safety measure prevents the power tool from starting unintentionally.
13. Keep unused power tools out of reach of children. Do not allow persons to use the device who are not familiar with it or have not read these instructions. Power tools are dangerous when used by inexperienced persons.
14. Note that the voltage must not exceed +5% of the nominal voltage. Higher voltages can cause irreparable damage. Note that higher voltage peaks are not generated when operating the machine via a generator.

DESCRIPTION OF THE PRODUCT

The magnetic drilling machine is an electric tool for attaching and drilling on horizontal and vertical planes as well as overhead. Ideal for use in steel construction, industrial construction, mechanical engineering, plant construction, shipbuilding, bridge construction, crane construction and assembly work in locksmith stores. With our magnetic drilling machines you can drill large steel workpieces and all magnetic metals. The handling is very convenient and the machine can be used flexibly. Using MKB series machine can reduce labor, improve machining precision and work efficiency.

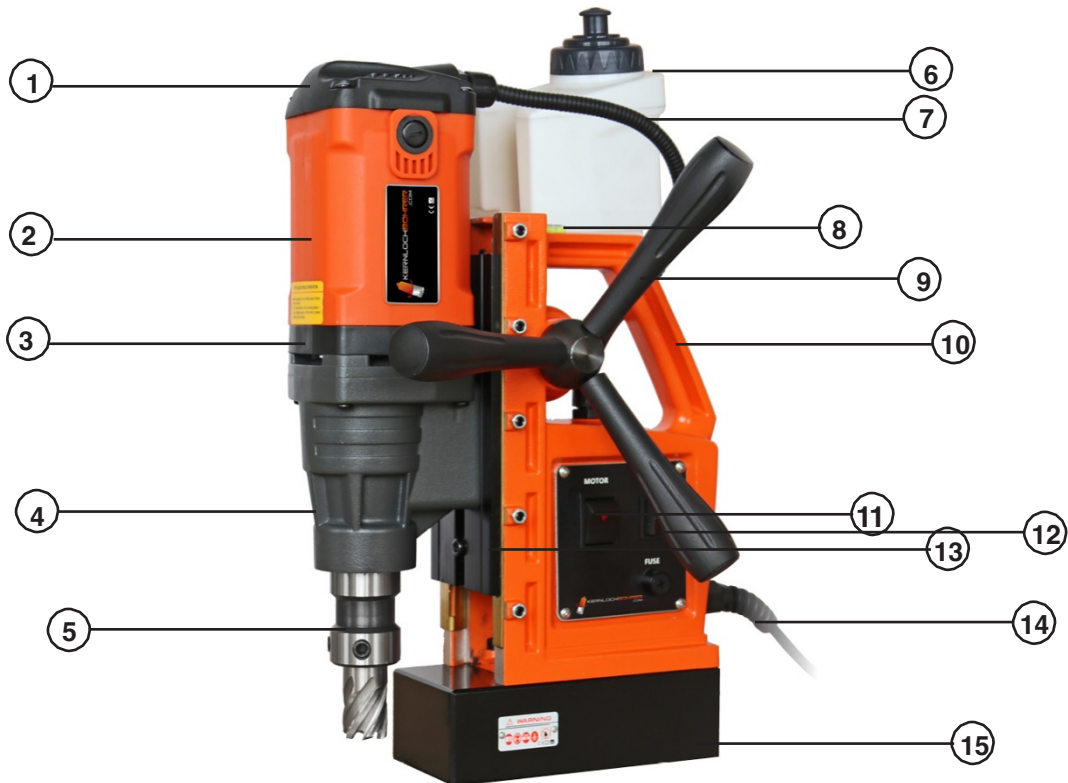
The magnetic drilling machines of the MKB series combine numerous advantages in one machine: The small volume with low weight makes particularly efficient work and easy transport of the machine possible. The magnetic drills have a built-in cooling system, a soft start, an electronic, infinitely variable speed control and an overload protection. All this makes the magnetic drills of the MKB series a machine with constant and superior performance and maximum safety for the user.

TECHNICAL DATA

Model	Drilling diameter (mm)	Mains voltage (V)	Power consumption (W)	Max. Attractive force (N)	Gauge speed (rpm)	Net / gross weight (kg)
MKB-35HD	35	230~	1550	14800	100-870	11/15,5
MKB-50HD	50	230~	1700	15600	100-830	11,5/16

In order to constantly improve the product, our company reserves the right to change the technical data without prior notice.

MKB-35HD



- | | |
|------------------------|---------------------------|
| 1. Air inlet cover | 9. Drilling lever |
| 2. Electric motor | 10. Carrying handle |
| 3. Intermediate flange | 11. On/Off switch drill |
| 4. Gearbox | 12. On/Off switch Magnet |
| 5. Drilling spindle | 13. Sledge |
| 6. Coolant tank | 14. Power connection |
| 7. Cable routing | 15. Magnetic base/magnets |
| 8. Dragonfly | |

MKB-50HD



1. Air inlet cover
2. Electric motor
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9. Dragonfly
10. Drilling lever
11. Carrying handle
12. On/Off switch drill
13. On/Off switch Magnet
14. Power connection
15. Magnetic base/magnet

CAUTIONS

1. Read the manual carefully before use to understand the structure and handling of the magnetic drilling machine (electromagnetic attitude, drilling machine itself and the gear function).
2. Before installing or removing a magnetic drilling machine, make sure that the motor switch is turned off and the power plug is disconnected.
3. After mounting and tightening the drill, the key must be removed.
4. Make sure to use a sharp and suitable drill.
5. Make sure that the work surface is level and corresponds at least to the base area of the magnet. The base surface must be made of a material that is at least 10mm thick, magnetizable and clean.
6. Make sure that the power cord is not near the drill.
7. Make sure that both the motor switch and the magnetic switch are switched off.
8. The magnetic drilling machines are equipped with a coolant tank. The coolant tank is attached to the frame of the magnetic drilling machine with two screws. Only use an oil/water mixture which is available from specialist dealers. After use, it is mandatory to clean the drill spindle to prevent subsequent corrosion. In order for the coolant to flow through the machine, the centering pin must be inserted in the crown drill.
9. The use of the magnetic drilling machine in the equipment with electromagnet or permanent magnet in an inclined or vertical position on steel components is only permitted if the magnetic drilling machine has been secured with the safety belt included in the scope of delivery. In the event of a power failure or excessive load, the magnetic holding force is not retained. The magnetic drilling machine may fall down and cause accidents.

10. Non-magnetic materials cannot be drilled with the magnetic drill. To drill non-magnetic material, a drill with a vacuum foot must be selected.
11. You cannot use an electric welder and a magnetic drill at the same time on the same piece of steel sheet, otherwise there is a risk of electric shock.
12. Continuous operation of the magnetic drilling machine for more than 2 to 3 hours is not permitted.



WARNING!

Strong magnet!

Persons with pacemakers or other medical implants must not use the magnetic drilling machine. The carrying of metal parts and watches is prohibited.



WARNING!

Risk of falling due to sudden pendulum motion of the magnetic drilling machine!

When working on a scaffold, the magnetic drilling machine may perform a sudden pendulum motion when starting up or in the event of a power failure. Secure the magnetic drilling machine with the enclosed safety belt.



CAUTION!

Disconnect the plug from the socket before making any adjustments to the magnetic drilling machine or changing accessories. Unintentional starting of the drilling machine can lead to accidents.



CAUTION!

Observe the inspection interval for load slinging equipment of your employer's liability insurance association! The safety belt supplied with the magnetic drilling machine is a load sling and must be checked regularly.

SAFETY CHECK

Check the magnetic drilling machine before each switch-on or at least once per shift. Report any damage or defects and changes in operating behavior immediately to the responsible manager.

Check all safety devices

- at the beginning of each shift (in case of interrupted operation),
- once a week (in case of continuous operation),
- after each maintenance and repair.

Check whether the prohibition, warning and instruction signs as well as the markings on the magnetic drilling machine are

- are legible (clean if necessary),
- are complete (replace if necessary).

SICHERHEIT WÄHREND DES BETRIEBS



WARNING!

Before switching on the magnetic drilling machine, make sure that this will cause

- no danger to persons arises,
- no things are damaged.

Refrain from any operation that may compromise safety:

- Make sure that no one is endangered by your work.
- Always follow the instructions in this operating manual during installation, operation, maintenance and repair.
- Do not work on the magnetic drilling machine if your ability to concentrate is reduced for any reason - such as the influence of medication.
- Observe the accident prevention regulations of the employers' liability insurance association responsible for your company or other supervisory authorities.
- Remain at the magnetic drilling machine until a complete stop has occurred.
- Do not leave magnetic drilling machines with electromagnet unattended magnetized at the place of work.
- Use the prescribed body protection equipment. Wear close-fitting clothing and a hair net if necessary.

ELECTRICAL SAFETY

Have the electrical machine/equipment checked regularly. Have any defects, such as loose connections, damaged cables, etc., rectified immediately.

A second person must be present when working on live parts and switch off the voltage in an emergency. Switch off the magnetic drilling machine immediately in case of malfunctions of the electrical supply!

Observe the required inspection intervals according to the Ordinance on Industrial Safety and Health and the inspection of operating equipment.

The operator of the machine must ensure that the electrical systems and equipment are checked for proper condition, namely,

- before initial commissioning, before recommissioning and after modification or repair by a trained electrician in accordance with VDE or under the direction and supervision of a trained electrician in accordance with VDE
- and at certain intervals.

The deadlines are to be set in such a way that any defects that arise and are to be expected are detected in good time.

During the inspection, the electrotechnical rules relating to this must be observed. Testing prior to initial startup is not required if the manufacturer or installer confirms to the operator that the electrical systems and equipment are in compliance with the accident prevention regulations.

COMMISSIONING

Remove the hand levers from the case and fasten them.

Observe the mains voltage! The voltage of the power source must match the specifications on the type plate of the magnetic drilling machine. Your power source must be equipped with a protective earth connection.

Permissible voltage fluctuations under normal conditions: $\pm 5\%$ volts.

Permissible frequency fluctuations: ± 1 Hz (50/60 Hz).

OPERATION

- Continuous operation of the magnetic drilling machine for more than 2 to 3 hours is not permitted. There is a risk of fire if the load is too high! The magnetic drilling machine must first cool down again before continuous operation is resumed.
- If the drill becomes jammed, the magnetic drilling machine must be switched off immediately.
- Operation of the magnetic drilling machine in a free environment is not permitted.
- For magnetic drilling machines with automatic feed, the lowest speed and feed must be selected first when starting work.
- Drilling into non-magnetizable surfaces is only possible if a sufficiently large steel plate has been fixed to the non-magnetizable surface.
- First switch on the electromagnet and then the drill spindle. When switching off, first switch off the drill spindle and then the electromagnet.
- Two persons must be present when drilling in a vertical position or overhead.
- The safety belt should also be used during horizontal drilling operations to secure the magnetic drill against falling from elevated work locations.
- The manually operated drill feed should not exceed 0.05mm per revolution.
- Use only suitable core drills for the intended machining task.

Usable tools: Weldon; clamping of tools with cylindrical shank 19mm and lateral driving surface similar to DIN 1835-B and DIN 6535-HB.



WARNING!

Ejection and spillage of cooling lubricants and lubricants. Make sure that cooling lubricants are removed immediately after finishing work. Close the stopcock of the coolant tank again.

FASTENING THE TOOL IN THE HOLDER

Standard

Insert the tool and clamp it with the screw on the side.

Quick change

Push sleeve upwards and insert tool. Release sleeve again and check secure fastening.

Standard



Quick change



Place the magnetic drilling machine on the workpiece.

Note:

A sensor controls the possible magnetic holding force. If the magnetic holding force on the component is not sufficient, the magnetic drilling machine cannot be switched on.

The magnetic drilling machine will only adhere properly to the material to be drilled into if the surface of the material is clean and smooth. Loose rust, dirt and grease must be removed before setting up the magnetic drilling machine, and any welding beads or unevenness must be smoothed out. A thin layer of paint does not impair the adhesive effect. If necessary, also clean the magnet base. After switching on the magnet, shake the magnetic drill vigorously to make sure that it adheres properly to the material. If this is not the case, check the surface of the material and the underside of the magnet base, clean if necessary and switch the magnet on again.

STEEL WITH LOW THICKNESS

Optimum adhesion is achieved on low-carbon steel with a minimum thickness of 12mm. For drilling in steel with less thickness, you can place a 12mm steel plate under the material (at the place where the magnetic foot is placed).

NON-FERROUS METALS

For drilling in non-ferrous metals, a steel plate is fixed on the material to be processed and the magnetic drill stand is placed on it. Insert the power plug into the socket. Position the machine on the position to be machined and switch on the magnet. Make sure that there is no contamination on the surface and that the holding force of the magnet is sufficient. The material thickness of the steel plate should be more than 10mm.

MACHINING OF ROUND OR STRONGLY CURVED MATERIAL

When processing round or strongly curved material, the magnetic foot is placed on the material so that its longitudinal axis is parallel to the longitudinal axis of the round material. Fill the free space between the magnet foot and the material on both sides over the entire length of the magnet foot with wedges made of steel. After switching on the magnet, the holding force via the wedges placed underneath should be so high that the machine has a secure and firm hold.

The steel wedges must be distributed on both sides of the magnet foot so that the axis of the drill is directly aligned with the highest point of the curved material. The drill may otherwise run sideways. Convince yourself by shaking the magnetic drill that the holding force of the magnetic foot is fully and sufficiently given.

CARE AND MAINTENANCE

Before starting maintenance or repair work, be sure to disconnect the power plug!

Repairs may only be carried out by qualified personnel who are suitable on the basis of their training and experience. The unit must be checked by a trained electrician according to VDE after each repair. The power tool is designed to require a minimum of care and maintenance.

However, the following points must always be observed:

- Clean the magnetic drilling machine after completing the drilling work. Then grease the drill spindle thread. The ventilation slots must always be clean and open. Make sure that no water gets into the magnetic drilling machine during the cleaning process.
- After approx. 300 operating hours, the carbon brushes must be checked by a trained electrician in accordance with VDE and replaced if necessary (use only original carbon brushes).
- Have switches, cables and plugs checked quarterly by a trained electrician in accordance with VDE.

ENVIRONMENTAL PROTECTION

Raw material recovery instead of waste disposal!

To avoid transport damage, the device must be delivered in sturdy packaging. Packaging as well as device and accessories are made of recyclable materials.

The plastic parts of the device are marked according to the material. This enables environmentally compatible, single-variety disposal via the collection facilities offered.

For EU countries only

Do not dispose of power tools in household waste! According to the European Directive 2012/19/EU on waste electrical and electronic equipment and its implementation in national law, used power tools must be collected separately and recycled in an environmentally friendly manner.

NOISE/VIBRATION

The noise of this power tool is measured according to DIN 45 635, part 21. The sound pressure level at the workplace can exceed 85 dB (A); in this case, sound protection measures for the operator are required.

Wear hearing protection!



Hand/arm vibration is typically lower than 2.5m/s². Measured values determined according to EN 61 029.

The specified vibration level represents the actual applications of the power tool. However, if the power tool is used for other applications, with deviating application tools or insufficient maintenance, the vibration level may deviate. This can significantly increase the vibration load over the entire working period.

For an accurate estimation of the vibration load, the times when the unit is switched off or running but not actually in use should also be taken into account. This can significantly reduce the vibration load over the entire work period.

Specify additional safety measures to protect the operator from the effects of vibration such as: Maintenance of power tool and insert tools, keeping hands warm, organization of work procedures.

SHUTDOWN CARBONS

The power tool is equipped with a self-shutting carbon brush to protect the motor. If the carbon brushes are worn, the machine switches off automatically. In this case, both carbon brushes must be replaced simultaneously with original carbon brushes by a trained electrician in accordance with VDE.

MISSING SEARCH

Error	Cause	Remedy
Magnetic base without function	Switching contact faulty	Replace switch
	Power supply is defective, plug loose	Replace cable and connector
	Overload, the fuse has blown	Replace fuse
	Short circuit in the electromagnet or defective electromagnet	Replace or repair electromagnet
	Magnetizability of the substrate too low	Check the thickness of the substrate, check the material property of the substrate.
	Printed circuit board defective	Replace printed circuit board
Drilling spindle does not switch on	Electromagnet not switched on	Before switching on the drill spindle, first switch on the electromagnet
	The sensor detects insufficient magnetic holding force on the component	See operating instructions "Steel with low thickness"
	Switching contact faulty	Replace switch
	Defective armature or stator winding	Replace defective component completely
Drive motor problems	The spark color on the electric motor turns orange-red	Reduce the drilling feed rate
	Sparks fly out	Replace the carbon brushes
	Sparks fly out in a ring of fire	Check for defective armature or stator winding, motor burned out
Drill tip runs away, Drilled hole is out of round	Hard spot in the workpiece Length of the cutting spirals/or angle on the drill unequal	Use new drill
	Drill bent	Use new drill
Drill or core hole drill "burns"	Feed rate too high	Reduce feed rate
	Chips do not come out of the hole	Retract drill more often
	Drill blunt	Sharpen drill bit/use new drill bit
	No or too little cooling	Use coolant
The drill chuck or the taper mandrel cannot be inserted	Dirt, grease or oil on the tapered inside of the drill chuck or on the tapered surface of the drill spindle Position of the driver in the drill spindle not observed	Clean surfaces carefully, keep surfaces free of grease
Drill feed does not work	Transmission gear manual feed worn	Replace transmission gear
Coolant does not run	Centering pin in the crockery drill is missing	Insert centering pin

BEHAVIOUR IN THE EVENT OF MALFUNCTIONS

Switch off the machine in case of malfunctions, disconnect it from the mains. Work on the electrical system of the machine may only be carried out by a trained electrician in accordance with VDE.

WARRANTY

In accordance with our general terms of delivery, a warranty period for material defects of 12 months applies in business transactions with companies (proof by invoice or delivery bill). Damage caused by natural wear and tear, overloading or improper handling shall remain excluded from this. Damage caused by material or manufacturer defects will be remedied free of charge by repair or replacement. Complaints can only be accepted if the device is sent to the supplier unassembled.

EC Declaration of Conformity

The manufacturer/marketer
Kernlochbohrer GmbH
Geigersbühlweg 52
72663 Großbettlingen

hereby declares that the following product

Product name: Magnetic drilling machine
Type: MKB-35HD; MKB-50HD

complies with all relevant provisions of the applied legal regulations (hereinafter) - including their amendments in force at the time of the declaration. The sole responsibility for issuing this declaration of conformity lies with the manufacturer. This declaration refers only to the machine in the condition in which it was placed on the market; parts added and/or interventions made subsequently by the end user are not taken into account.

The following legislation has been applied:

Machinery Directive 2006/42/EG
EMC Directive 2014/30/EU
RoHS Directive 2011/65/EU

The protection goals of the following other legal regulations were met:

Low Voltage Directive 2014/35/EU

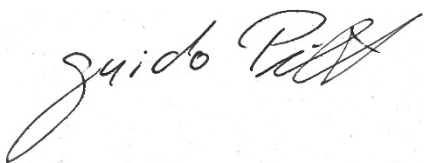
The following harmonized standards have been applied:

EN 60204-1:2006/AC:2010	Safety of machinery - Electrical equipment of machines - Part 1: General requirements (IEC 60204-1:2005 (Modified))
EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction (ISO 12100:2010)
BS EN 62841-2-1	Electric motor-driven hand-held tools, portable tools, and lawn and garden machinery. Safety Special requirements for hand-held drills and impact drills.
EN 61000-6-1:2007	Electromagnetic compatibility (EMC) - Generic standards; Immunity for residential, commercial and light-industrial environments
BS EN 61000-6-3+A1	Electromagnetic compatibility (EMC). Basic technical standards. Interference emission for residential, commercial and small businesses.

Name and address of the person authorized to compile the technical documentation:

Kernlochbohrer GmbH
Geigersbühlweg 52
72663 Großbettlingen

Location: Großbettlingen
Date: 03.07.2023



Guido Pillat, Chief Executive Officer