# Operating instructions

# MAB 480


CE

# Table of Contents

# Foreword

With the purchase of this machine you have decided in favour of a quality product whose engineering and sturdiness have been designed to meet the high demands of day-to-day professional use.

Read all the information contained here to familiarise yourself quickly with the machine and to be able to make full use of its functions.

This machine will serve you for many years to come if you handle and treat it properly.

## Instructions for use

These operating instructions form an integral part of the Magnetic Core Drilling Machine MAB 480 NV (hereinafter referred to as "machine") and contains important information for the commissioning, safety, intended use and care of the machine.

The operating instructions must be kept near the machine at all times. They must be read and observed by all persons entrusted with operation, troubleshooting and/or cleaning of the machine.

Keep these operating instructions in a safe place and pass them on with the machine to any future owners.

### Copyright

## Structure of the safety warnings

The following warnings are used in the present operating instructions:

**⚠ DANGER**

**A warning of this category draws attention to an impending dangerous situation.**

If the dangerous situation is not avoided, it may lead to serious injury or even death.

► Follow the instructions in this warning to avoid the danger of serious injury or even death.

**⚠ WARNING**

**A warning of this category draws attention to a potentially dangerous situation.**

If the dangerous situation is not avoided, it may lead to injuries.

► Follow the instructions in this warning to avoid the risk of injury.

***CAUTION***

**A warning of this category draws attention to potential material damage.**

If the situation is not avoided, it may lead to material damage.

► Follow the instructions in this warning to avoid material damage.

***NOTE***

► A note draws attention to additional information that simplifies the use of the machine.

## Intended use

The machine is intended solely for drilling operations in magnetic and non-magnetic metals, and for cutting threads, countersinking and reaming within the limits specified in the technical data.

Use in any other or further way is not considered an intended use.

**⚠ WARNING**

**Danger from use for other than the intended purpose!**

If not used for its intended purpose and/or used in any other way, the machine may be or become a source of danger.

- ► Use the machine only for its intended purpose.
- ► Observe the procedures described in these operating instructions.

No claims of any kind will be accepted for damage or injury resulting from use of the machine for other than its intended purpose.

The risk has to be borne solely by the machine owner.

***NOTE***

- ► If used commercially, pay attention to compliance with the accident prevention regulations and the Safety at Work Ordinance.

## Liability disclaimer

All technical information, data and instructions for commissioning, operation and care of the machine contained in these operating instructions represent the latest status at the time of printing.

The manufacturer assumes no liability for damage or injury resulting from failure to observe the operating instructions, use for other than the intended purpose, unprofessional repairs, unauthorised modifications or use of non-approved spare parts and accessories, tools and lubricants.

# Safety

**⚠ CAUTION**

**When using electrical tools, the following fundamental precautions must be taken to protect against electric shock and the risk of injury and fire!**

## Fundamental safety precautions

- Do not use the machine in flammable or potentially explosive environments.
- Persons who due to their physical, mental or motor response abilities are unable to operate the machine safely may only use the machine under supervision or instruction by a responsible person.
- Persons with heart pacemakers or other medical implants must not use this machine.
- Children must not be allowed to use the machine.
- Inspect the machine for visible signs of damage before use. Do not use a visibly damaged machine.
- Before beginning work, check the condition of the safety chain and the function of the switches on the machine.
- Repairs to the mains cable may only be carried out by a qualified electrician.
- Repairs to the machine may only be carried out by an authorised workshop or by the works after-sales service. Unqualified repairs can lead to considerable danger for the user.
- Repairs to the machine during the warranty period may only be carried out by a service centre authorised by the manufacturer, as otherwise the warranty will be voided.
- Defective parts may only be replaced with original spare parts. Only these parts guarantee that the safety requirements are satisfied.

- Do not leave the machine unsupervised during operation.
- Store the machine in a dry, temperate location out of the reach of children.
- Do not leave the machine standing outdoors and do not expose it to moisture.
- Make sure that your work area is sufficiently lit (>300 Lux).
- Do not use low power machines for heavy working.
- Make sure that your workplace is clean.
- Keep the machine clean, dry and free of oil and grease.
- Follow the instructions on lubricating and cooling the tool.

## Electric shock hazard

**⚠ DANGER**

**Danger to life by electric shock!**

**Contact with live wires or components could lead to serious injury or even death!**

Observe the following safety precautions to avoid electric shocks:

- ► Do not open the housing of the machine. Risk of electric shock if live terminals are touched.
- ► Never immerse the machine or the plug into water or other liquids.
- ► Use only extension leads or cable drums with a cable cross-section of 1.5 mm².
- ► Only use extension leads that are approved for the place of work.
- ► Check the condition of the extension lead regularly and replace if damaged.
- ► Avoid direct body contact with grounded parts (e.g., tubes, radiators, steel girders) to reduce the risk of electric shock in the event of a defect.
- ► When using the machine outside or in a humid environment, an RCD (residual circuit device) must be used.

## Risk of injury

**⚠ WARNING**

**Improper handling of the machine increases the risk of injury!**

Observe the following safety precautions to avoid injuring yourself and/or others:

- Operate the machine only with the protective equipment stipulated in these operating instructions (see section ***Personal protective equipment***).
- Do not wear protective gloves when the machine is running. A glove can be caught by the drilling machine and torn off the hand. Risk of losing one or more fingers.
- Remove loose jewellery before beginning work. Wear a hair net if you have long hair.
- Always switch off the machine before changing tools, performing maintenance or cleaning. Wait until the machine has come to a complete standstill.
- Always remove the plug from the mains socket before changing tools, cleaning or performing maintenance, in order to avoid unintentional starting of the machine.
- Do not put your hand into the machine while it is in operation. Remove shavings only when the machine is at a standstill. Wear protective gloves when removing swarf.
- When working on scaffolding, the operator must be secured with a safety belt as the machine can oscillate dangerously in the event of interruption to the power supply.
- Check for secure clamping of the electromagnets on the substrate before every use (see section ***Preparing***).
- Secure the machine with the safety chain supplied when working from an inclined or vertical position or during overhead work. The machine could fall down if the magnet is loosened or the power fails.
- Check that the tool is tightened securely before using (see section ***Inserting the tool***).
- Do not allow the connecting cable to hang over edges (danger of tripping).

## Prevention of damage

***CAUTION***

**Potential property damage in case of inexpert handling of the machine!**

Observe the following instructions to avoid property damage:

- ► Before connecting the machine, compare the connection data (voltage and frequency) on the rating plate with those of your mains power supply. The data must correspond in order to avoid damage to the machine.
- ► Always carry the machine at the handle, not by the connecting lead.
- ► Always pull the mains lead out of the plug socket at the plug, not at the mains lead.
- ► Do not pinch the connecting lead.
- ► Do not expose the connecting lead to heat or chemical liquids.
- ► Do not pull the connecting lead across sharp edges or hot surfaces.
- ► Lay the connecting lead in such a way that it cannot be caught and wound up in the rotating part of the machine.

## Safety installations

### Restarting protection

| *NOTE* |
| --- |
| ► The machine stops automatically if the magnetic clamp is switched off or in the event of a power failure. |

In order to prevent unexpected starting of the machine when the magnetic clamp is switched on again or when the power supply returns after a power failure ("restarting protection"), the machine must be switched on at the ON/OFF switch again.

### Magnet indicator

The magnet indicator provides a visual control of the magnet's clamping force.

- Magnet indicator is lit **GREEN**:
  The magnet's clamping force satisfies the minimum requirements. Machining can be carried out.
- Magnet indicator is lit **RED**:
  Insufficient magnet clamping force. Machining must not be carried out with the machine. This can be the case in the event of insufficient material thickness, uneven surface or due to paint, scale or zinc coatings.

### Thermal overload protection

The machine is additionally equipped with thermal overload protection. If the machine becomes too hot, it switches off automatically.

Carry out the following steps before continuing to work with the machine:

- ◆ Remove any blockages that may have occurred.
- ◆ Allow the machine to run at no-load speed for approx. 2 minutes.

The machine is then ready for operation again.

### Symbols on the machine

The symbols on the machine have the following meaning:

| Symbol | Meaning |
|---|---|
|  | Electric shock hazard! |
|  | Read the operating instructions before beginning work! |
|  | Wear protective goggles and ear protection! |

## Personal protective equipment

Wear the following protective equipment at all times when working with the machine:

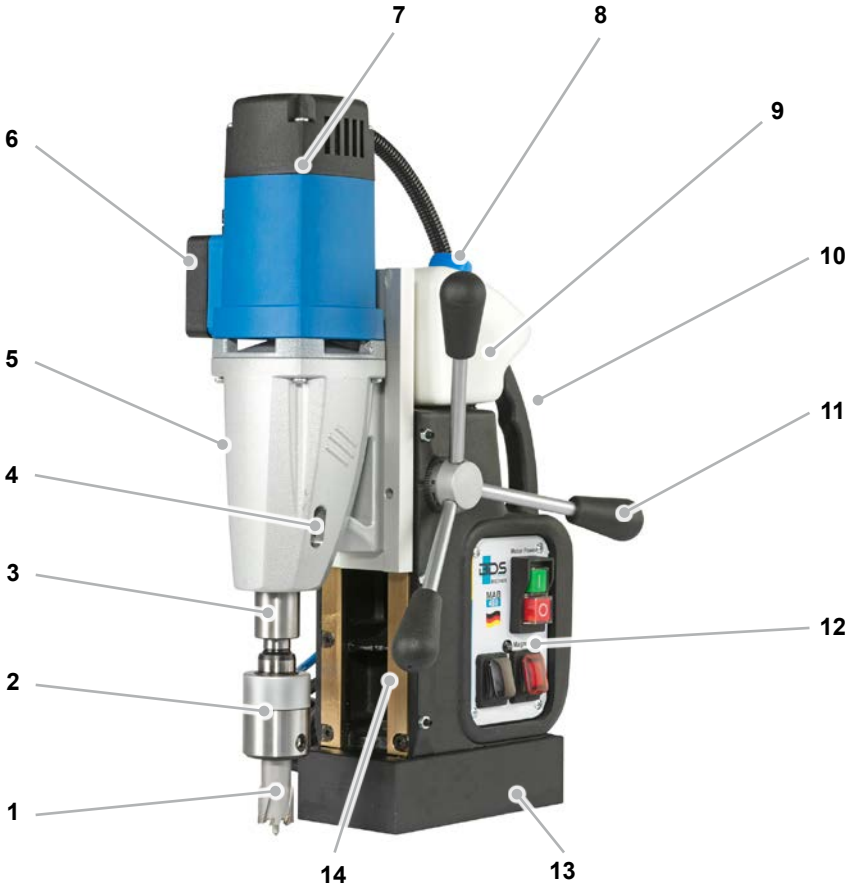
| Symbol | Meaning |
|---|---|
|  | Close-fitting work protection clothing with a low tearing resistance |
|  | Goggles for protecting eyes against flying parts and liquids and ear protection in areas with noise emission >80 dB(A) |
|  | Safety shoes to protect the feet from falling objects |

Wear the following additional protective equipment during special operations:

| Symbol | Meaning |
|---|---|
|  | Helmet to protect your head from falling objects |
|  | Wear a safety belt where there is a danger of falling |
|  | Working gloves as protection against injury |

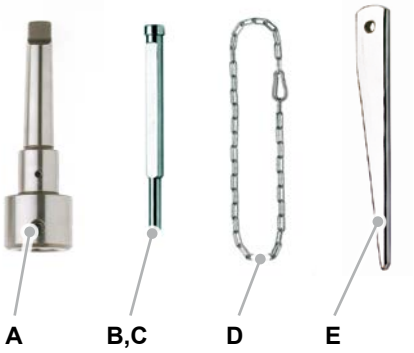
# Components/scope of supply

## Machine overview



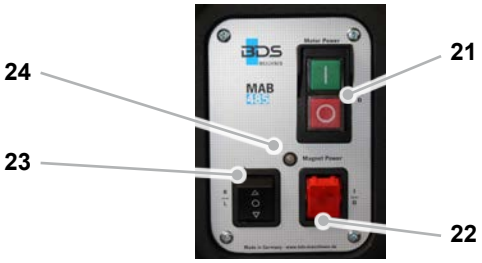

| | | | |
|---|---|---|---|
| 1 | Core drill (not supplied as standard) | 8 | Filler neck for cutting oil |
| 2 | Industrial holder MK2 19 mm Weldon | 9 | Cutting oil tank |
| 3 | Morse taper MK2 | 10 | Handle |
| 4 | Opening for ejector pin | 11 | Hand lever |
| 5 | 2-speed gearbox with selector | 12 | Control panel |
| 6 | Electronic speed controller | 13 | Magnetic foot |
| 7 | Drive motor | 14 | Machine slide and guide |

## Delivery contents




| | | | |
|---|---|---|---|
| | MAB 480 NV machine (not illustrated) | | Hexagonal offset screwdriver, size SW2.5 (not illustrated) |
| A | Industrial holder MK2 19 mm Weldon ZIA 219-M MK2 | | Hexagonal offset screwdriver, size SW2.5 (not illustrated) |
| B | Ejector pin ZAK 075 | | |
| C | Ejector pin ZAK 100 | | Open-end wrench, size SW8 (not illustrated) |
| D | Safety chain | | |
| E | Ejector pin MK2 | | Operating instructions/guarantee card (not illustrated) |
| | Transport case (not illustrated) | | |

## Control panel




| | |
|---|---|
| 21 | Motor ON/OFF switch |
| 22 | Magnet ON/OFF switch |
| 23 | Direction of rotation switch |
| 24 | Magnet indicator |

# Before using for the first time

## Transport inspection

The machine is supplied as standard with the components indicated in chapter ***Components/scope of supply***.

| ***NOTE*** |
| --- |
| ► Inspect the delivery for completeness and obvious signs of damage. Report an incomplete or damaged delivery to your supplier/dealer immediately. |

# Preparations

This chapter contains important instructions for the necessary preparations before starting work.

## Additional safety measures for certain operations

Additional safety precautions must be taken for the following operations with the machine:

### Non-horizontal working position

| ⚠ **WARNING** |
| --- |
| **Risk of injury from the falling machine.**<br>When working in inclined or vertical position and during overhead work, the machine must be secured to prevent it from falling using the safety chain (D) supplied.<br>► Check the safety chain for proper function before every use. A damaged safety chain must not be used. Replace a damaged safety chain immediately.<br>► Attach the safety chain in such a way that the machine moves away from the operator in the event of slipping.<br>► Lay the safety chain as tightly as possible around the handle of the machine.<br>► Check the secure fitting of the safety chain and lock before starting work.<br>► Use the protective equipment stipulated in chapter ***Personal protective equipment.*** |

### Work on scaffolding

**⚠ WARNING**

**Risk of falling from sudden oscillating movements of the machine.**

When working on scaffolding, the machine can make a sudden oscillating movement on starting or in the event of a power failure.

- ► Secure the machine with the safety chain (D) supplied.
- ► Wear a safety belt to protect yourself from falling.

## Check the condition of the substrate

The magnet clamping force is dependent on the condition of the substrate. The clamping force is significantly reduced by paint, zinc and scale coatings and rust.

The substrate must satisfy the following preconditions in order that a sufficient magnet clamping force can be achieved:

- The substrate must be magnetic.
- The clamping surface and the magnetic foot must be clean and grease-free.
- The clamping surface must be completely smooth and level.

***NOTE***

- ► Clean the substrate and the magnetic foot of the machine before use.
- ► Remove any unevenness and loose rust from the substrate.
- ► BDS offers special holding devices in its range of accessories.

The best clamping effect is obtained on low-carbon steel substrate with a thickness of at least 20 mm.

### Steel of low thickness

When drilling in steel of low thickness, an additional steel plate (minimum dimensions 100 x 200 x 20 mm) must be placed under the workpiece. Secure the steel plate to prevent it from falling.

### NF metals or workpieces with an uneven surface

A special holding device must be used when drilling in NF metals or in workpieces with an uneven surface.

| *NOTE* |
| --- |
| ► BDS offers special clamping devices for tubes and non-magnetic materials in its range of accessories. |

## Inserting the tool

The machine is equipped with an MK tool mounting. Depending on the type of tool to be used, corresponding drill chucks, quick-clamping systems or adapters must be employed.

| Tool | Tool mounting to be used |
| --- | --- |
| Tool with taper MK | Insert the tool directly into the morse taper (3). |
| Tools with 19 mm Weldon shank | Industrial holder MK2 19 mm Weldon (A). |
| Tools with straight shank | Use drill chuck with MK2/B16 tapered mandrel (available as an accessory). |
| Thread taps | Use the appropriate adapter for thread taps (available as an accessory). |

## Safety precautions

**⚠ WARNING**

**Risk of injury!**

- ► Do not use damaged, soiled or worn tools.
- ► Carry out tool changes only when the machine is switched off and at a standstill. Remove plug from the mains socket.
- ► After inserting, check that the tool is engaged securely.
- ► Only use tools, adapter and accessories that match the machine.

## MK tool mounting

### Inserting the tool

- ◆ Before mounting, clean the shank of the tool, adapter or drill chuck and the morse taper (3) of the machine.
- ◆ Push the tool from below into the morse taper (3) of the machine.

**⚠ WARNING**

**Risk of injury from incorrectly inserted tool!**

- ► Check the proper seating of the tool, adapter or drill chuck in the MK tool mounting.

### Removing the tool

- ◆ Turn the tool until the ejector pin (E) slips into the opening for the ejector pin (4).
- ◆ Prise out the tool with the ejector pin (4) or loosen the tool by tapping against the ejector pin.

## Weldon industrial tool holder

### Inserting the tool

- Insert the MK2/19 mm Weldon industrial holder (A) into the morse taper (3) of the machine.
- Before inserting, clean the Weldon shank of the tool and the tool holder.
- Loosen both hexagonal socket screws in the tool mount (A) with the corresponding hexagonal offset screwdriver supplied.
- Insert the tool into the tool mounting

***NOTE***

► Insert the appropriate ejector pin (B,C) before inserting a core drill.

- Tighten both hexagonal socket screws in the tool mount (A) with the corresponding hexagonal offset screwdriver supplied.

### Removing the tool

- Loosen both hexagonal socket screws in the tool mount (A) with the corresponding hexagonal offset screwdriver supplied and remove the tool from below.

# Operation

## Activating/deactivating magnetic clamp

### Activating magnetic clamp

**CAUTION**

► Switch on the magnetic clamp only when the machine is standing on a magnetic substrate to avoid overheating of the magnet.

◆ Turn on switch (22). The indicator light in switch (22) comes on.

◆ Check the magnet clamping force at the magnet indicator (24). When the magnet clamping force is sufficient, the MAGNET POWER indicator light (24) is green. If the MAGNET POWER indicator light (24) is red, there is not sufficient magnet clamping force available.

**CAUTION**

► The maximum magnet clamping force is only available after switching on the motor.

### Deactivating magnetic clamp

◆ Secure the machine at the handle to prevent the machine from slipping off the surface.

◆ Turn off switch (22). The indicator light in switch (22) goes out.

## Switching machine ON/OFF


◆ Turn the machine ON at the ON/OFF switch (21) with the green button (I) and OFF with the red button (O).

**NOTE**

► The machine can only be switched on when the magnetic clamp has been switched on.

► Allow a severely overheated machine to run on at no-load speed for approx. 2 minutes to let it cool down.

► The machine switches off automatically in the event of a power failure or if the magnetic clamp is switched off.

## Selecting the speed range

**CAUTION**

► Switch over the gear stages only with the machine at standstill.

The machine has a gearbox with two mechanical gear stages:

Gear stage 1: Load speed - 250 rpm
Gear stage 2: Load speed - 450 rpm

◆ To select the desired gear stage, set selector lever (5) to stage 1 or 2 with the machine switched off.

**NOTE**

► Select the speed range according to the material and drilling diameter.

## Setting the speed

In addition to the mechanical gearbox, the machine also has full-wave control electronics with which the speed can be infinitely varied.

◆ First set the appropriate gear stage, then adapt the speed using the electronic speed control (7).

Gear stage 1: 50 - 250 rpm
Gear stage 2: 100 - 450 rpm

**NOTE**

► If possible, always select a setting with low gear stage and high motor speed. The motor is thus set to high torque and protected against overheating under heavy load.

## Drilling with the machine

### Drilling with twist drills

Proceed as follows when drilling with twist drills:

- Push twist drills with MK taper from below into the morse taper (3) of the machine.
- Position the machine at the working location, align it and switch on the magnetic clamps.
- Select the appropriate speed and switch on the machine.

***NOTE***

Observe the following instructions when drilling with twist drills:

- ► Under high pressure, the drill can glow out and the machine can be overloaded.
- ► When working overhead, use the high-performance grease spray ZHS 400. Spray the drill with grease spray before drilling. Repeat the procedure when drilling deep holes.
- ► Pay attention to a regular chip discharge. With larger drilling depths, the chip may break.

### Drilling with core drills

Proceed as follows when drilling with core drills:

- Install the MK2/19 mm Weldon industrial holder (A) and connect up the cooling lubricant system.
- Install the appropriate ejector pin in the core drill and insert the core drill into the MK2/19 mm Weldon industrial holder (A).
- Position the machine at the working location, align it and switch on the magnetic clamps.
- Select the appropriate speed and switch on the machine.

***NOTE***

Observe the following instructions when drilling with core drills:

- Drilling with core drills requires no great effort. The drilling process is not accelerated by higher pressure. The drill wears faster and the machine can be overloaded.
- Use the cooling lubricant system installed on the machine with high-performance cutting oil BDS 5000.
- The cooling lubricant system cannot be used when working overhead. In this case use the high-performance grease spray ZHS 400. Spray the drill on the inside and outside before drilling. Repeat this procedure when drilling deeper holes.
- Pay attention to a regular chip discharge. With larger drilling depths, the chip may break.

## Thread cutting

The machine is equipped with a reversible direction of rotation and can also be used for cutting threads.

Proceed as follows for cutting threads:

- Drill the hole for the thread.
- Switch off the machine and select the lowest gear stage and speed.
- Set the direction of rotation to clockwise (right = R) at switch (23).
- Chuck the thread tap in the machine using the appropriate drill tap adapter.
- Switch on the machine and set the thread tap onto the drilled hole.
- Guide the machine slide down at hand lever (11) without exerting pressure until the desired thread length has been cut.
- Switch off the machine and set the direction of rotation to anti-clockwise (left = L) at switch (23).
- Switch on the machine again and allow the thread tap to come completely out of the workpiece. Then guide the machine slide upwards at hand lever (11) to avoid damaging the start of the thread.

## Reaming/counter-sinking

Thanks to its wide range of operating speeds, the machine can also be used for reaming or counter-sinking.

| *CAUTION* |
| --- |
| ► Observe the limits of the tools to be used for reaming and counter-sinking given in the technical data. |

# Eliminating blockages

**⚠ WARNING**

**Danger of cutting by broken tool parts or shavings.**

► Put protective gloves on before starting work.

### Blockages caused by a broken tool:

- Switch off the machine. Remove plug from the mains socket.
- Use the handle to move the machine slide to the upper position.
- Replace defective tool. Remove shavings.

### Other blockages:

- Switch the machine of at the motor switch. Leave magnetic clamp switched on.
- Use the handle to move the machine slide to the upper position.
- Remove shavings and check tool.

# Cleaning

**⚠ WARNING**

- ► Switch off the machine and pull the mains plug out of the plug socket before starting maintenance and cleaning.
- ► When using compressed air for cleaning, wear protective goggles and protective gloves and protect other persons in the working area.

***CAUTION***

- ► Never immerse the machine in water or other liquids.

## After every use

- ◆ Remove the installed tool.
- ◆ Remove chips and coolant residues.
- ◆ Clean the tool and the tool mounting on the machine.
- ◆ Clean the guide of the machine slide.
- ◆ Return the machine and accessories to the transport case.

# Maintenance

**⚠ WARNING**

**Danger caused by unqualified repairs!**

Unqualified repairs can pose considerable dangers for the user and cause damage to the machine.

► Repairs to electrical appliances may only be carried out by the works after-sales service or by specialists trained by the manufacturer.

## Adjusting the guide of the machine slide

If the guide of the machine slide (14) shows signs of backlash, it must be adjusted. Proceed as follows:

- Loosen the clamping bolts.
- Tighten the adjusting screws uniformly.
- Tighten the clamping bolts again.

## Replacing the carbon brushes

Replacement of the carbon brushes may only be carried out by BDS or by an authorised repair workshop. Unauthorised repairs will void the warranty.

## After-Sales Service/Service

Should you have any questions about after-sales service or service, please contact BDS. We will be happy to give you the address of your nearest service partner.

# Troubleshooting

## Faults - causes and remedies

| Fault | Possible cause | Remedy |
|---|---|---|
| The motor does not start after pressing the ON/ OFF switch or stops during operation. | Plug not inserted into socket. | Insert plug. |
| | Automatic circuit breaker tripped. | Switch on the automatic circuit breaker again. |
| | The magnetic clamp is not switched on. | Switch on the magnetic clamp. |
| | The internal safety switch has switched off the machine due to overheating. | Allow the machine to cool down. |
| | Direction of rotation not selected. | Preselect direction of rotation. |
| The automatic circuit breaker in the electrical distribution board trips | Too many appliances connected to the same power circuit. | Reduce the number of appliances on the power circuit. |
| | Machine is defective. | Contact After-sales Service. |
| The magnetic clamp does not function. | Magnet not switched on. | Switch on magnet. |
| | The surface is not magnetic. | Use a suitable base. |
| The lubrication system does not function. | No lubricant available. | Top up the lubricant. |
| | Lubricant tap closed. | Open the lubricant tap. |
| | Connecting nipple clogged. | Clean tank and nipple. |

***NOTE***

► If you cannot resolve the problem with the steps described above, please contact After-Sales Service.

# Storage/disposal

## Storage

If you do not intend to use the machine for a longer period of time, clean it as described in chapter ***Cleaning***. Store the machine and all the accessories in the transport case in a dry, clean and frost-free location.

## Disposal

### Disposal of the packaging

The packaging protects the machine from transport damage. The packaging materials have been selected according to environmental and waste disposal aspects and can therefore be recycled.

The return of the packaging to the material cycle helps conserve raw materials and reduces the production of waste.

When no longer required, dispose of the packaging materials in accordance with the local regulations in force.

### Disposal of the old appliance

Within the European Community, this product must not be disposed of in the domestic refuse.

Dispose of the machine in accordance with the EC Directive 2002/96/EC-WEEE (Waste Electrical and Electronic Equipment).

Should you have any questions, please contact your local authority responsible for waste disposal.

### Disposal of the lubricant

| ⚠ WARNING |
| --- |
| ► Observe the disposal instructions from the lubricant manufacturer. |

# Annex

## Technical data

| Model | **MAB 480** |
|---|---|
| Dimensions (L x W x H) | 295 x 178 x 598 mm |
| Magnetic foot (L x W) | 168 x 84 mm |
| Net weight approx. | 13 kg |
| Operating voltage (see type plate) | 230 V / 50-60 Hz<br>110-125 V / 50-60 Hz |
| Power consumption | 1150 W |
| Noise level | 87 db(A) |
| Vibration | 0,81 m/s² |
| Stroke | 160 mm |
| Core drill, short | dia. 12-40 mm |
| Core drill, long | dia. 12-40 mm |
| Twist drill | max. dia. 18 mm |
| Thread | max. M16 |
| Reaming | max. dia. 18mm |
| Counter-sinking | max. dia. 40 mm |
| Speed stage 1 | $n_0$ = 50 - 250 $min^{-1}$ |
| Speed stage 2 | $n_0$ = 100 - 450 $min^{-1}$ |
| Overheating protection | Yes |
| Full-wave control electronics | Yes |
| Clockwise/anti-clockwise rotation | Yes |
| Morse taper | MK2 |
| Core drill mounting | Industrial holder MK2 19 mm Weldon<br>ZIA 219-M MK2 |
| Length of the connecting lead: | 2.8 m |
| Protection class | I |

# EC Declaration of Conformity

| **in accordance with Machine Directive 2006/42/EC, appendix II 1A** | |
|---|---|
| Name/address of the manufacturer: | **BDS Maschinen GmbH**<br>Martinstraße 108<br>D-41063 Mönchengladbach |
| We hereby declare that the product: | |
| Model: | **Magnetic core drilling machine** |
| Model | **MAB 480** |
| conforms to the following relevant regulations:<br>■ **EC Directive 2006/42/EC on machinery** | |
| The following harmonised standards were applied in whole or in part:<br>● DIN EN ISO 12100-2010<br>● DIN EN 61029-1/A11:2011-11<br>● DIN EN 62841-1:2012-11 | |
| Authorised person for compiling the technical documentation: | **BDS Maschinen GmbH** |
| Full technical documentation is available.<br>The operating instructions associated with the product is available. | |
| It is required that the product is only operated as intended. Information on operating as intended can be obtained from the technical documentation. | |
| Mönchengladbach, 1th August, 2016 |  <br>Wolfgang Schroeder,<br>Technical Director<br>(Legally binding signature of the issuer) |

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