

Operators manual

V 1.1 | June 2020

 **EUROBOOR**
FOR PROFESSIONALS BY PROFESSIONALS

Magnetic drilling machine

TUBE.30

Serial number:

Date of purchase:

Don't forget to register your machine at:

www.euroboor.com/register

[only when registered you benefit from extended warranty]

Congratulations on purchasing this premium magnetic drilling machine which has been established in collaboration with MagSwitch. At EUROBOOR we strive to exceed our customers' expectations by developing and providing premium and innovative portable drilling and cutting solutions. We believe that a professional like you must be able to rely on a professional supplier. Which has led us to become a major player in the industrial world, with our own factory and several offices worldwide. All because we have always listened to our customers and to the demands from the market.

Our vision is focused on developing innovative portable tools that add value for our customers and facilitate them in their daily work. We never lose sight of sustainability, time savings and cost savings.

Enjoy your new machine!

Before operating your new magnetic drilling machine, please first read all instructions. You find the instructions in this manual and on the warning label on your machine. With proper use, care and maintenance your machine will provide you with years of premium drilling performance.

TO REDUCE THE RISK OF INJURY USER MUST READ AND UNDERSTAND ALL INSTRUCTIONS

To view all our offices and their contact information please visit: www.euroboor.com

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1. Safety

1.1 General safety instructions

Do not use this magnetic drilling machine before you have thoroughly read and completely understood this manual, specifically the “General safety instructions” and “Specific safety information”, including the figures, specifications, safety regulations and the signs indicating DANGER, WARNING and CAUTION.



WARNING: When using electrical tools basic safety precautions should always be followed to reduce the risk of fire, electrical shock and personal injury.

Please also observe the relevant national industrial safety regulations. Non-observance of the safety instructions can lead to an electric shock, burns and/or severe injuries.

This manual should be kept for later use and enclosed with the magnetic drilling machine, should it be passed on or sold.

Work area

1. Keep your work area clean and well lit. Cluttered and dark work areas increase the change of accidents;
2. Do not operate a magnetic drilling machine in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. A magnetic drilling machine may create sparks which could ignite the dust or fumes;
3. Keep bystanders, children and visitors away while operating a magnetic drilling machine. Distractions can cause you to lose control.

Electrical safety

1. A magnetic drilling machine plug must match the outlet. Never modify the plug in any way. Do not use any adapter plugs;
2. Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded;
3. Do not expose the magnetic drilling machine to rain or wet conditions. Water entering a machine will increase the risk of electric shock;
4. Do not abuse the cord. Never use the cord to carry the magnetic drilling machine or pull the plug from an outlet. Keep the cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock;
5. When operating a magnetic drilling machine, use an extension cord suitable for outdoor use, this reduces the risk of electric shock;
6. If operating a magnetic drilling machine in a damp location is unavoidable, use a residual current device (RCD), this reduces the risk of electric shock.

Personal safety

1. Stay alert, watch what you are doing and use common sense when using a magnetic drilling machine. Do not use the machine while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating a magnetic drilling machine may result in serious personal injury;
2. Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewelry or long hair can be caught in moving parts;
3. Avoid accidental starting. Be sure the switch is off before plugging the machine in. Carrying a magnetic drilling machine with your finger on the switch or plugging in a magnetic drilling machine that has the switch on increases the change of accidents;
4. Never place hands, fingers, gloves or clothing near drilling area or rotating machine parts;
5. Remove adjusting keys or switches before turning the machine on. A wrench or a key that is left attached to a rotating part of the machine may result in personal injury;
6. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the magnetic drilling machine in unexpected situations;
7. Use safety equipment. Always wear eye protection. Dust mask, non-skid safety shoes, hard hat and hearing protection must be used for optimal safety;
8. Always use supplied safety chain during any work on non-horizontal surfaces. Magnetic drilling machine can release from surface.

When using this machine, you MUST wear ear and eye protection.

Machine use and care

1. When using the machine on non-horizontal surfaces, you must use cutting paste. Do not use oil because the oil can drip into the motor unit;
2. While operating the machine, the annular cutter must be cooled and lubricated with high quality cutting lubricants;
3. Always remove the slug from the annular cutter after each hole. **Caution;** the slug may be hot;
4. Use clamps or other practical solutions to secure and support the workpiece to a stable platform. Holding the workpiece by hand or against your body is unstable and may lead to loss of control;
5. Do not use the machine when the switch does not turn it on or off. Any machine that cannot be controlled with the switch is dangerous and must be repaired;
6. Disconnect the plug from the power source before making any adjustments, changing accessories or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally;
7. Store your magnetic drilling machine out of reach for children and other untrained persons. Tools are dangerous in the hands of untrained users;
8. Maintain your machine with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to break and are easier to control;
9. Check for misalignment of moving parts, breakage of parts and any other condition that may affect the machine's operation. If you detect damage have the machine serviced before use. Many accidents are caused by poorly maintained tools;
10. Only use accessories that are recommended by EUROBOOR for your machine model. Accessories that are suitable for one machine may become hazardous when used on another machine.

Service

1. Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in risk of injury;
2. When servicing a tool, use only identical replacement parts. Follow instructions in the maintenance section of this manual. Use of unauthorised parts or failure to follow maintenance instructions may create a risk of electric shock or injury;
3. EUROBOOR offers armature kits containing official EUROBOOR spare parts suitable for your magnetic drilling machine.

1.2 Specific safety information

- Keep your fingers away from the drilling area;
- Avoid touching the slug that is automatically ejected by the pilot pin when the working procedure is finished. Contact with the slug when it is hot, or if it falls, can cause personal injuries;
- Always use the safety guard. Before switching on the machine ensure that the guard is closed securely;
- Always use the safety chain;
- The magnetic drilling machine is suitable for use on round and flat steel with a thickness starting from 3 mm. Curvature, coats of paint and surface irregularities will create a distance between the magnets and the steel. Keep it to a minimum;
- Do not clamp the magnetic drilling machine on small or irregular shaped objects;
- Always place the machine on a surface that is clear of shavings, chips, swarf and surface dirt;
- Keep the magnet clean and free of debris and swarf;
- Do not switch on the machine before checking whether the magnetic stand has been tightened firmly to the mounting surface;
- Adjust the machine so cutter does not extend into the workpiece before drilling. Do not perform any design, assembly or construction activities on the workpiece while the machine is switched on;
- Before switching on the machine, make sure all accessories have been mounted correctly;
- Do not switch on the machine until it has been mounted and installed according to all above mentioned instructions;
- Always use the recommended speed for the accessories and material you are working with;
- Do not use the machine on the same workpiece on which electric welders are working;
- Only use an appropriate cutting lubricant. EUROBOOR offers a wide range of well-considered cooling and lubrication products to match your requirements;
- Do not use liquid cutting fluids while drilling vertically or overhead. Dip the cutter in cutting paste or apply an appropriate spray for these applications;
- Do not pour cutting fluid into the reservoir while it is mounted in the bracket. Do not allow cutting fluid to enter the drill motor;
- Before use, ensure movable safety guard operates properly;
- In case of a jammed cutter, turn off the machine, disconnect the machine from the power supply and then remove the reason for the jam before turning on the machine again.

Residual risk

In spite of following the relevant safety regulations and their implementation, certain residual risks cannot be avoided. These are:

- Impairment of hearing;
- Risk of personal injury from flying particles;
- Risk of burns due to accessories becoming hot during operation;
- Risk of personal injury due to prolonged use.

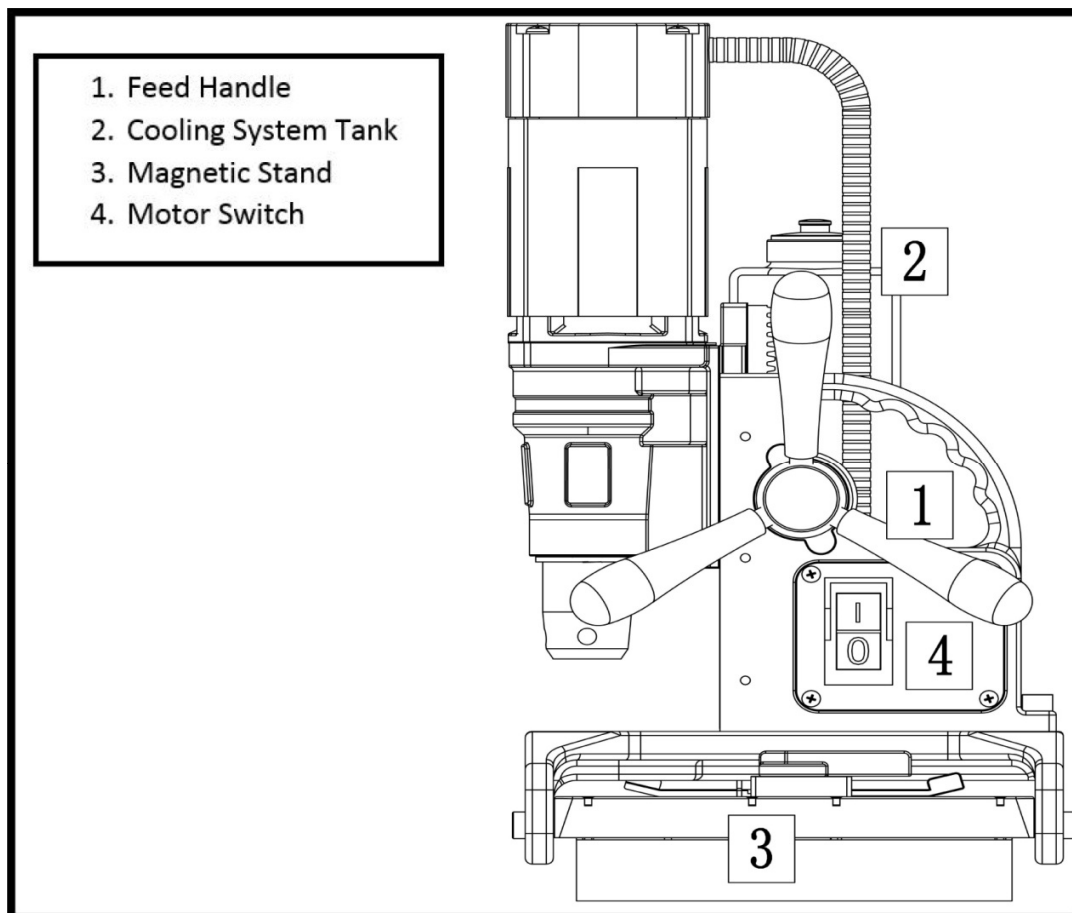
Always try to reduce these risks as much as possible.

2. Description

2.1 Intended use

This magnetic drilling machine has been designed for commercial use in a weather-protected environment as a machine for drilling, countersinking and reaming of high precision holes in steel tubes and pipes, using annular cutters, twist drills and accessories recommended by EUROBOOR. The magnetic drilling machine can be used horizontally, vertically or overhead.

2.2 Description and features



[image 2-1]

2.3 Box contents

- 1 TUBE.30 Magnetic drilling machine
- 1 x user manual
- 3 x handles
- 1 x hex key 2.5 mm
- 1 x hex key 3 mm
- 1 x hex key 4 mm
- 1 x hex key 5 mm
- 1 x lubrication system
- 1 x bottle (200 ml) of IBO.10 cutting oil
- 1 x safety chain
- 1 x set of ear plugs
- 1 x pair of safety glasses
- 1 x pair of gloves

2.4 Serial number

The serial number is mentioned on the machine 2 times: engraved on the frame, plus on the serial no. sticker on the motor housing. Additional serial no. stickers are provided with the machine for your administration.

The serial number will help you and your sales point validate and identify the machine.

As example:

302006001

breaks down to:

30 20 06 001

Machine series

Year of manufacture







Month of manufacture

Identification number

2.5 Technical data

	Metric	Imperial
Annular cutters	Ø 12 -30 mm	Ø 7/16 -1 3/16"
Twist drills	Ø 1 – 13 mm	Ø 1/16 - 1/2"
Threading	-	-
Countersinking	Ø 10 -35 mm	Ø 3/8 -1 3/8"
Length	275 mm	10 13/16"
Width	185 mm	7 1/4"
Height	326 -416 mm	12 13/16-16 3/8"
Stroke	90 mm	3 9/16"
Weight	11 kg	24.2 lbs
Magnet (l x w x h)	187 x 165 x 83 mm	7 3/8 x 6 1/2 x 3 1/4"
Magnetic force	532 kg	1,169 lbs
Motor power	900 W	8.2 A
Total power	950 W	8.6 A
Speed (no load)	775 rpm	775 rpm
Speed(load 900 W / 8.2 A)	400 rpm	400 rpm
Spindle (Weldon)	19.05 mm	3/4"
Voltage	220-240 V AC / 50 - 60 Hz	110-120 V AC / 60 Hz

2.6 Symbols

Symbol	Term, meaning	Explanation
	Read documentation	Be sure to read the documentation in this user manual and specifically the "General safety instructions" and "Specific safety information".
	Wear ear protection	Use ear protection during operation.
	Wear eye protection	Use eye protection during operation.
	Danger/warning/caution	Read and apply the information in the adjacent text!
	European conformity symbol	Confirms the conformity of the magnetic drilling machine with the directives of the European Community.
	Class of protection I	Product with basic insulation and exposed (touchable) conductive parts additionally connected to the protective earth conductor.
mm	Millimetre	Unit of measure for the dimensions.
"	Inch	Unit of measure for the dimensions.

Symbol	Term, meaning	Explanation
kg	Kilogram	Unit of measure for the mass.
lbs	Pound	Unit of measure for the mass.
V	Volt	Unit of measure for the electric voltage.
A	Ampere	Unit of measure for the electric current intensity.
W	Watt	Unit of measure for the output.
no	No load speed	Revolution speed at no load.
rpm	Revolutions per minute	Unit of measure for the revolutions.

2.7 Environmental



Separate collection. This product must not be disposed of with normal household waste.



Separate collection of used products and packaging allows materials to be recycled and used again. Re-use of recycled materials helps prevent environmental pollution and reduces the demand for raw materials.

Local regulations may provide for separate collection of electrical products from the household, at municipal waste sites or by the retailer when you purchase a new product.

3. Preparation & adjustment

3.1 Assembly

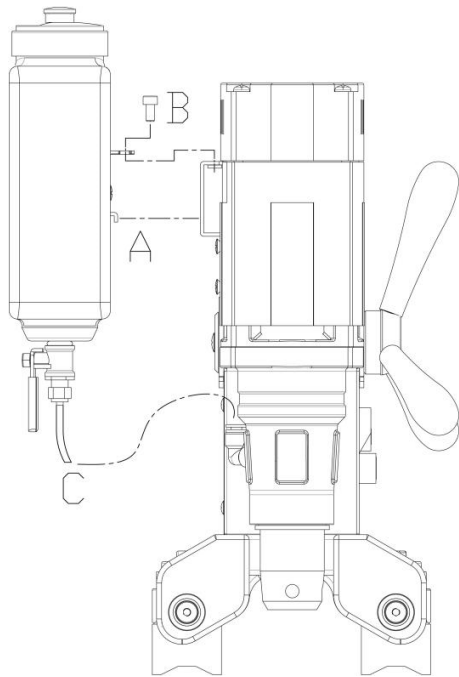


WARNING: To reduce the risk of injury, turn unit off and disconnect machine from power source before installing and removing accessories, before adjusting or changing set-ups or when making repairs. Be sure all switches are in the OFF position. An accidental start-up can cause injury.

Fitting the feed handles

1. Fit each of the three feed handles by screwing them into the hub in clockwise directions
2. Tighten firmly by hand

The handles are supposed to face slightly outward. Be careful not to cross-thread any of the components.



Fitting the lubrication system

The lubrication system can be used for horizontal drilling applications (the drill being used vertically).

1. Hang the coolant tank (A) on the coolant tank holder
2. Position and tighten the attachment pin (B)
3. Connect the coolant hose (C) to the fitting on the gearbox. Make sure the hose is connected fully and tightly
4. To disconnect the coolant hose, press the blue ring on the connection and gently pull out the hose

[image 3-1]



WARNING: Do not use the lubrication system in vertical or overhead drilling applications. Instead use EUROBOOR cutting paste or spray.

Fitting the safety chain

1. Pass the safety chain through the opening near the grip;
2. Wrap the chain around the work piece;
3. Securely close the chain using the lock.



WARNING: Always use the safety chain when using machine vertically and/or upside-down. The safety chain does not replace the magnetic force of the magnetic drilling machine: it is simply used to secure against falling in the event of a magnet malfunction.

3.2 Prior to use

Please make sure that the contacting surface for the magnet is level, clean and rust free. Remove any varnish or primer. When working on materials that are not magnetisable, suitable fixation devices must be used. When working on steel tubes or pipes with a material thickness of less than 3 mm, the workpiece must be reinforced with additional steel in order to guarantee the magnetic holding power.

Check the machine for possible damage; Before using the machine, you must carefully check the protective components or slightly damaged components to ensure they are operating perfectly and as intended.

Check that moving parts are in perfect working order, do not jam and check whether the parts are damaged. All parts must be correctly installed and fulfill all conditions necessary to ensure perfect operation of the machine.

Damaged protective components must be repaired or replaced according to specifications by EUROBOOR or any authorised EUROBOOR dealer.

DO NOT use under wet conditions or in presence of flammable liquids or gases.

DO NOT let children come into contact with the machine. Supervision is required when inexperienced operators use this machine.

Electrical safety

The electric motor has been designed for one voltage only. Always check that the power supply corresponds to the voltage on the rating plate.

Your EUROBOOR magnetic drilling machine is designed in class I (grounded) according to EN 61029-1. Earth wire is required.

If the supply cord is damaged, it must be replaced by a specially prepared cord available at EUROBOOR or your EUROBOOR dealer.

Extension cable

If an extension cable is required, use an approved 3-core extension cable suitable for the power input of this machine (see technical data). The minimum conductor size is 1.5 mm²; the maximum length is 30 metre. When using a cable reel, always unwind the cable completely.

Useful tips

- Try a few simple projects using scrap material until you develop a “feel” for the magnetic drilling machine;
- Let the machine run in for a period of eight to ten hours before starting with big operations. Do not load the machine too much during this run-in period;
- Never use the machine with serious overload;
- Keep the machine clear from moisture at all times to protect the machine, yourself and others.

4. Using the machine



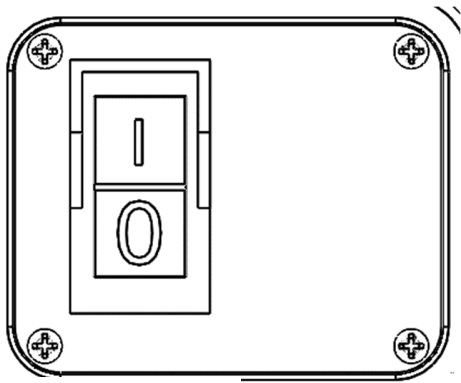
WARNING: Always observe the safety instructions and applicable regulations.



WARNING: To reduce the risk of serious personal injury, turn tool off and disconnect tool from power source before making any adjustments or removing/installing attachments or accessories.

4.1 Control panel

The control panel on your magnetic drilling machine is designed for maximum operating facility and safety.



[image 4-1]

4.2 Magnet base

By combining Magswitch's rotating magnet technology and EUROBOOR's magnetic drilling unit, we have created a tool that is capable of quickly and safely drilling on contoured and flat surfaces. Magswitch magnets allow for a much more efficient field on thinner material, allowing more consistent tip forces.

The attachment force generated by the magnets depends on various factors:

- Thickness of the material
- Material grade
- Pain or coating of the material the magnet is placed on
- Metal chips, oil or other dirt under the magnet

As guideline on regular construction steel:

- Minimal required material thickness 3.0 mm (1/8")
- Full saturation as from material thickness 12.5 mm (1/2")

Make sure that both magnet arrays attach tightly to the workpiece before turning on the motor unit of the magnetic drilling machine.

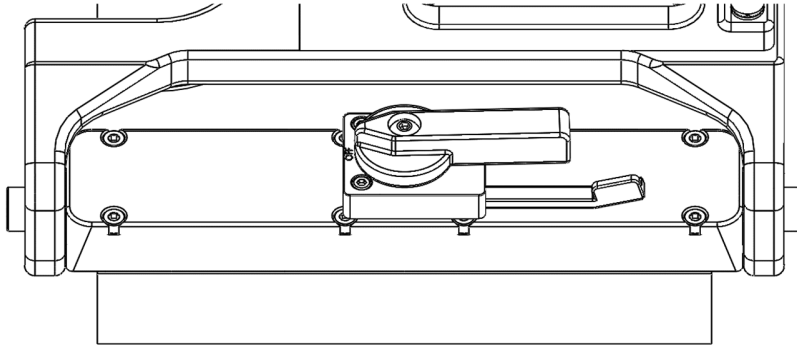
For placement on the outside of a pipe, a minimum outer diameter of 76.2 mm (3") is required.

Always use the safety chain included. Drilling above your head is extremely dangerous and is not recommended.

Activating the magnets

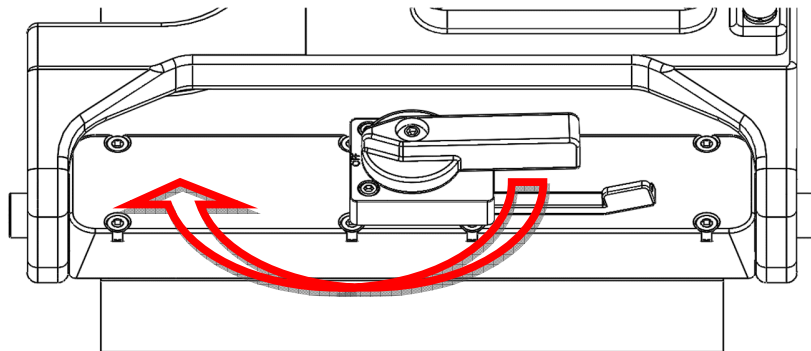
Both magnet arrays are to be handled individually.

- Make sure the magnet arrays are switched off (see below)



[image 4-2]

- Place the magnetic drilling machine on the workpiece in the desired location, and make sure both magnet arrays are positioned correctly and the machine is in a stable position
- Rotate the ratcheting action handles:
 - o For precise positioning: partly (around 90°) clockwise, this allows for some manoeuvrability
 - o For drilling: 180° clockwise (see below)



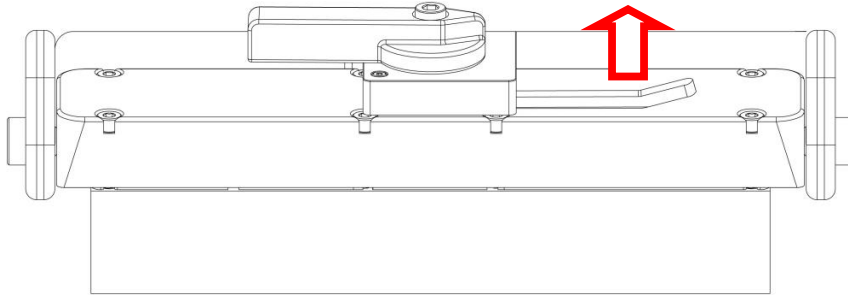
[image 4-3]

- If you are not able to rotate the handles to this position easily and fully, not enough magnet force is generated and the machine is unsafe to use. Check above mentioned possible factors and fix the cause of insufficient magnetic force before proceeding. The two handles on the Magswitch arrays need to be rotated the full 180° to be considered fully on
- Connect the machine to the mains

Deactivating the magnets

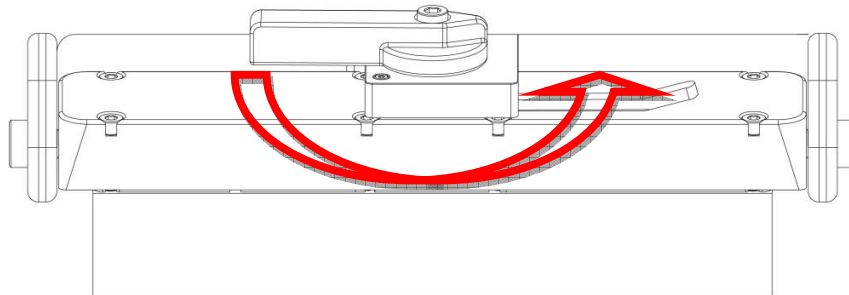
To deactivate the magnets:

- Gently press the release lever beneath the ratcheting action handle about 1.5 cm (9/16") towards the machine body to release the ratcheting action handle



[image 4-4]

- While keeping the release lever pressed, return the ratcheting action handle counter clockwise to the original off position



[image 4-5]

4.3 Switching motor on and off

Once the machine is plugged into the mains, it is automatically put in standby-mode and the motor can be started without any additional steps.

To switch the motor ON, press the green button with marking "I". To switch the motor OFF, press the red button with marking "O".

Always allow the motor to run at least 3 seconds after starting the motor, before starting any type of operation.

4.4 Tool lubrication

Horizontal applications

In order to use the lubrication system, the tank must be filled with a cutting fluid or oil:

1. Make sure the flow regulator is closed
 2. Unscrew the cap
 3. Fill the container with cutting fluid or oil
 4. Screw the cap back on
- Adjust the fluid flow as required using the flow regulator;
 - Add more cutting fluid if the shavings (metal chips) become blue.

Vertical and overhead applications

Dip the cutter in cutting paste or apply an appropriate spray.



WARNING: Do not use the lubrication system in vertical or overhead drilling applications. Instead use EUROBOOR cutting paste or spray.

Make sure to use only suitable cutting oil or fluid. EUROBOOR offers a wide range of cutting lubricants for all tool and material combinations. Proper cooling will help you create better and faster results, and extend the lifetime of your tools.

5 Working with operation tools

5.1 Annular cutters

Annular cutters only cut material at the periphery of the hole, rather than converting the entire hole to shavings. As a result, the energy required to make a hole is lower than for a twist drill. When drilling with an annular cutter, it is not necessary to drill a pilot hole.



WARNING: Do not touch the cutter or the parts close to the cutter immediately after operation, as they may be extremely hot and cause burns to the skin. Ensure nobody is in the work area where the metal core (slug) is ejected.

Drilling conditions

The ease with which material can be drilled depends on several factors including tensile strength and abrasion resistance. Whilst hardness and/or strength is the usual criterion, wide variations in machinability can exist among material showing similar physical properties.

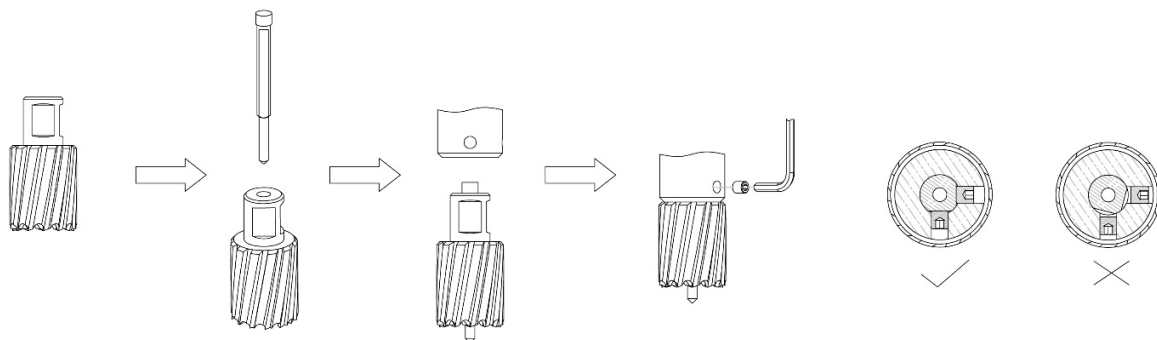
The drilling conditions are dependent on requirements for tool life and surface finish. These conditions are further restricted by the rigidity of the tool and the workpiece, lubrication and machine power available. The harder the material, the lower the cutting speed.

Some materials of low hardness contain abrasive substances leading to rapid cutting edge wear at high speeds. Feed rates are governed by rigidity of set-up, volume of material to be removed, surface finish and available machine power.

Drilling a hole

Now that you have read the information and safety recommendations above, you are ready to actually start drilling. Follow these 12 steps for best drilling result:

1. Install the annular cutter:
 - Place the pilot pin into the cutter;
 - Align the flat faces on the cutter shank with the screws in the tool holder;
 - Make sure the cutter shank is entered fully and correctly;
 - Tighten the screws;



[image 5-1]

2. Precisely mark the center of the hole;
3. Use the pilot pin to position the machine in the correct position, with the tip of the pilot pin to meet the marked center of the hole;
4. Switch on the magnet and verify that the drill is in the right position and that the machine is pushed tight against the work piece;
5. Put open the valve of your lubrication system to release the oil;
6. Switch the motor on and allow it to run at the required speed;
7. Turn the feed handles to start drilling. Apply only a slight pressure when the annular cutter touches the metal. Do not push the annular cutter with force into the metal;
8. Apply a regular pressure while drilling. The drilling performance does not improve by putting more pressure on the machine. Too much pressure will overload the motor and your annular cutter will be worn sooner;

A continuous, non-discoloured iron swarf is a sign of correct drilling speed and a well-cooled, sharp cutter. Let the cutter do the job and give it time to cut the metal!

9. Adjust the oil supply when necessary;
10. Apply less pressure when the drill cuts through the material. The slug will be pushed out of the cutter by the pilot pin;
11. Turn the feed handles to put the motor in highest position and switch off the motor unit;
12. Remove the burrs, metal chips and clean the cutter and surface without getting injuries.

Caution: The metal slug can be sharp and very hot!

5.2 Twist drills

1. Only use Weldon shank twist drills;
2. Fit the Weldon shank twist drill directly to the gearbox output shaft;
3. Precisely mark the center of the hole, and use the tip of the twist drill to position the machine in the correct position, with the tip of the twist drill to meet the marked center of the hole.

Steps 4-12: see paragraph 5.1 Annular cutters.

5.3 Countersinks

Thanks to its wide range of operating speeds, the machine can also be used for reaming or counter-sinking. Follow the steps mentioned in paragraph 5.2 Twist drills.

6. Maintenance

Your EUROBOOR power tool has been designed to operate over a long period of time with a minimum of maintenance. Continuous satisfactory operation depends upon proper tool care and regular cleaning.



CAUTION: To reduce the risk of injury, turn unit off and disconnect machine from power source before installing and removing accessories, before adjusting or changing set-ups or when making repairs. Be sure the switch is in the OFF position. An accidental start-up can cause injury.

Just as every magnetic drilling machine with moving parts, your EUROBOOR magnetic drilling machine also needs regular maintenance service. A few recommendations follow :

Visually check the machine for damage

Machine must be checked before operation for any signs of damage that will affect the operation of the machine. Particular notice must be taken of the mains cable, if the machine appears to be damaged it should not be used failure to do so may cause injury or death.

Cleaning

- Clean all dirt, dust, metal chips and burrs of your magnetic drilling machine
- Blow dirt and dust out of the main housing with dry air as often as dirt is seen collecting in and around the air vents. Wear approved eye protection and an approved dust mask
- Never use solvents or other harsh chemicals for cleaning the non-metallic parts of the tool. These chemicals may weaken the materials used in these parts. Use a cloth dampened only with water and mild soap. Never let any liquid get inside the tool; never immerse any part of the tool into a liquid.

Operation of the machine

The machines operation must be checked to ensure that all components are working correctly. Replace any defective parts immediately. This prevents properly function parts from being damaged.

Check magnetic base

Before every operation the magnetic base should be checked to make sure that the base is flat and there is no damage present. An uneven magnet base will cause the magnet to hold not as efficiently and may cause injury to the operator. When the machine is put out of use for a longer period, apply a small amount of machine oil to the underside of the magnetic base for rust protection. Clean the magnetic base again with next use.

Check machine grease

The gearbox grease should be checked once a month to ensure all moving components are covered to prevent wear. The grease should be changed at least once a year to ensure you gain the best from the machine.

Carbon brushes

Brushes should be checked to make sure there is no abnormal wear present. This should be checked at least once a week if used frequently. If the carbon brush has worn more than 2/3 the original length the brushes should be changed. Failure to do so may cause damage to the machine.

Check armature

This should be checked at least 1 per month to check that there are visual signs of damage to the body or to the commutator. Some signs of wear will be seen on the commutator over a period of time this is normal as this is the part that comes in contact with the brushes but any signs of abnormal damage and the part should be replaced.

Adjustment of slide

An essential requirement of the machine is that the slide can move in a smooth and controlled manner, free of lateral movement and vibration. This situation can be maintained by periodic adjustment of the slide and is accomplished in the following manner:

1. Place the machine in an upright position and, by means of the capstan, raise the slide to its highest position. Clean the aluminum rails and apply a small amount of light machine oil to the wear surfaces
2. Gently feed in setting screw with supplied Allen key 2.5 until slight resistance is encountered. Follow your way down adjusting all setting nuts and screws
3. Operate the slide up and down a few times to test the movement and make any further necessary adjustments. Try to ensure that all the screws are exerting a uniform pressure on the slide from top to bottom. A perfectly adjusted slide will operate freely up and down without any sideways movement

Lubricating the feed travel

The feed travel should be lubricated periodically with grease to ensure smooth operation.

- Raise the motor unit to the highest position possible
- Lubricate the dove-tail guide way at both sides
- Lubricate the gear rack

After repeated use, the gear rack may become loose. If necessary, adjust the self-locking setscrews at the left side. Tighten screws in series until the gear rack moves freely in the dove-tail guide but does not allow the motor to wobble.

Repair, modification and inspection

Repair, modification and inspection of EUROBOOR Magnetic drilling machines must be done by EUROBOOR or an EUROBOOR authorised dealer. The spare parts list will be helpful if presented with the machine to the EUROBOOR dealer for service when requesting repair or other maintenance.

EUROBOOR machines are constantly being improved and modified to incorporate the latest technological advancements. Accordingly, some parts (i.e. part numbers and/or design) may be changed without prior notice. Also, due to EUROBOOR's continuing program of research and development, the specifications of machines are subject to change without prior notice.



WARNING: *Since accessories, other than those offered by EUROBOOR, have not been tested with this product, use of such accessories with this tool could be hazardous. To reduce the risk of injury, only EUROBOOR recommended accessories should be used with this product.*

Consult your dealer for further information on the appropriate accessories.

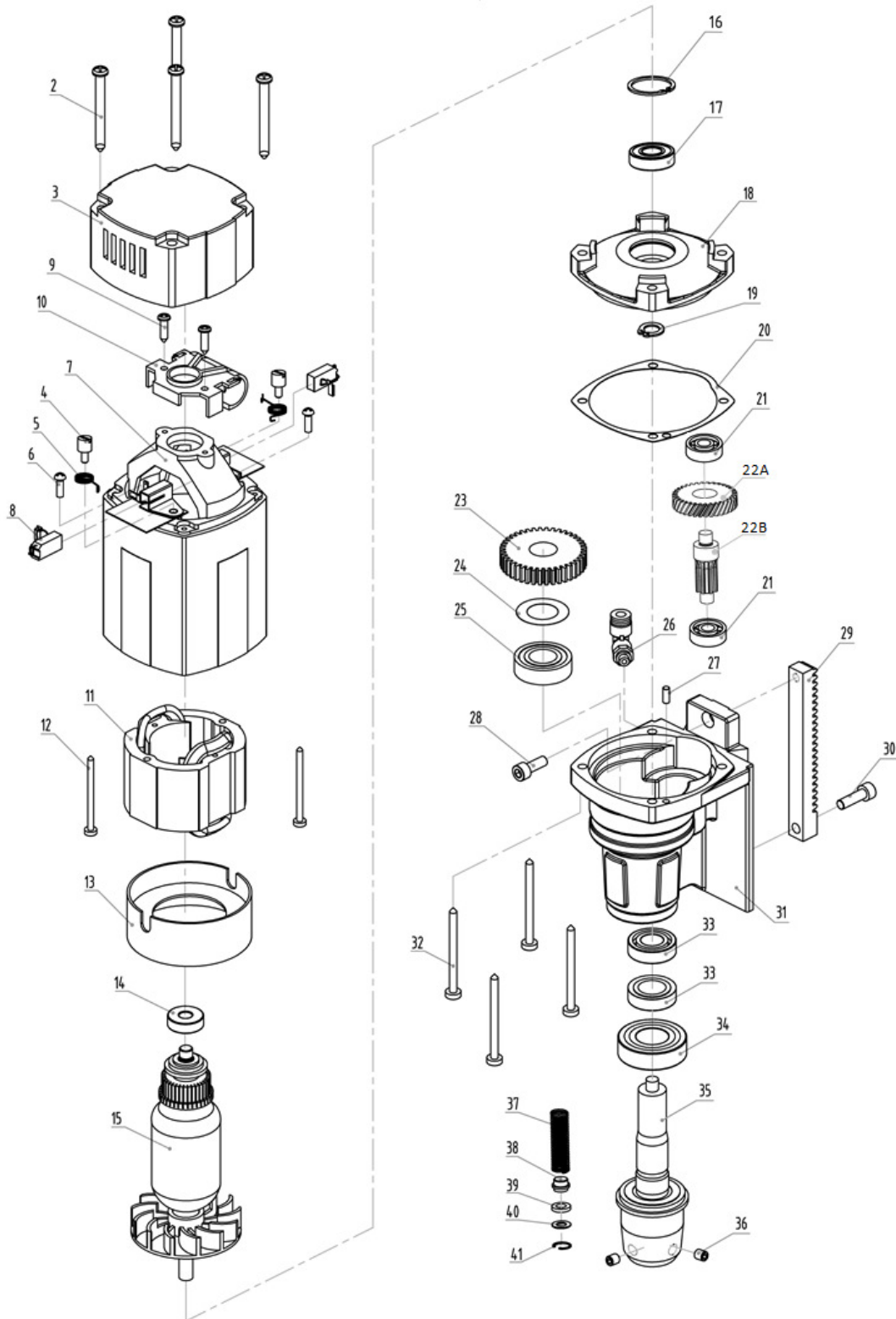
7. Trouble shooting

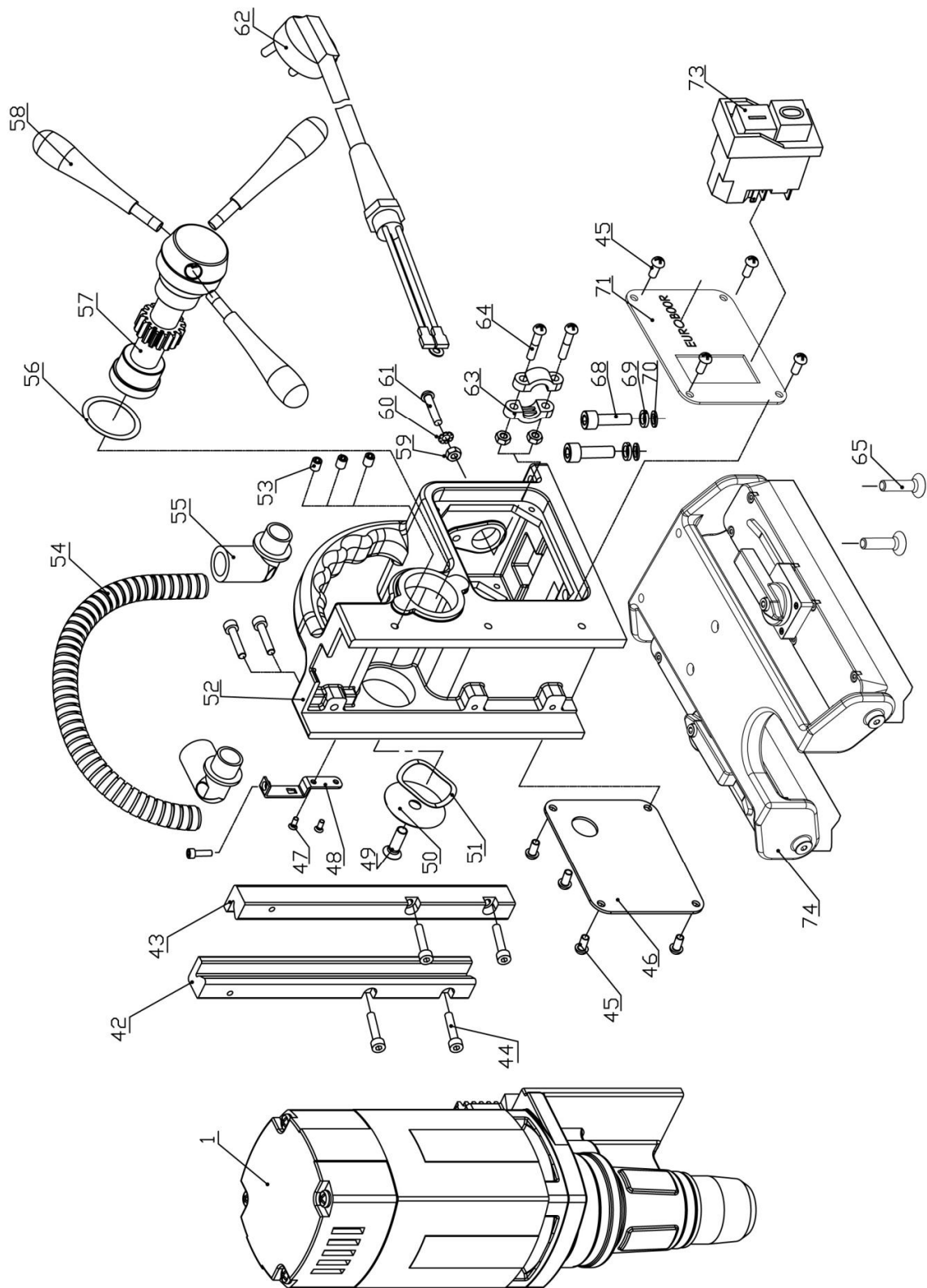
Motor does not work	<ul style="list-style-type: none"> - Damaged or defective wiring - Carbon brushes are stuck or worn out - Defective magnet switch - Defective On / Off switch - Defective control unit - Defective armature and/or field
Annular cutters break quickly, holes are bigger than the hole cutter	<ul style="list-style-type: none"> - Clearance in the guide - Bent spindle - Shaft extending from the motor is bent - Bent pilot pin
Motor running roughly and/or seizing up	<ul style="list-style-type: none"> - Bent spindle - Shaft extending from the motor is bent - Triangular guide not mounted straight - Dirt between spindle and triangular guide
Motor starts running when machine is plugged into mains	<ul style="list-style-type: none"> - Damage or defective relays in control unit
Motor making a rattling sound	<ul style="list-style-type: none"> - Gear ring (bottom of the armature) worn out - Gear(s) worn out - Insufficient oil in gear box
Motor humming, big sparks and motor has no force	<ul style="list-style-type: none"> - Armature damaged (burned) - Field burned - Carbon brushes worn out
Motor does not start or fails.	<ul style="list-style-type: none"> - Damaged or defective wiring - Dirt in sensor speed control unit - Defective or loose magnet on top of armature - Damaged or defective (sensor) speed control unit - Damage to armature or field coil - Damaged or defective carbon brushes
Guiding takes a great deal of effort	<ul style="list-style-type: none"> - Guide is set too tight - Guide is dry, needs to be greased - Guide/gear- rack/rotation system dirty or damaged
Insufficient magnetic force	<ul style="list-style-type: none"> - Bottom of magnet not clean and dry - Bottom of magnet not suitable for workpiece - Work piece is not bare metal - Work piece is not clean or flat - Work piece too thin - Defective magnet
Frame under voltage	<ul style="list-style-type: none"> - Damaged / defective wiring - Motor seriously dirty or damaged
Fuse blows when machine is plugged into mains	<ul style="list-style-type: none"> - Damaged or defective wiring - Wrong value fuse - Defective switch - Defective control unit

Fuse blows when motor is started	<ul style="list-style-type: none"> - Damaged or defective wiring - Wrong value fuse - Motor running roughly - Defective armature and / or field - Carbon brushes worn out - Defective control unit
Rotation system free stroke too long	<ul style="list-style-type: none"> - Loose or defective gear-rack - Defective rotation system
Motor suddenly stops	<ul style="list-style-type: none"> - Components loose or missing, causing vibration - Machine shifting on workpiece (not attached) - Machine shifting with workpiece - Unstable cutter/arbor combination - Dull cutter - Cutter not suitable for workpiece - Machine set to incorrect spindle speed - Defective sensor or control unit

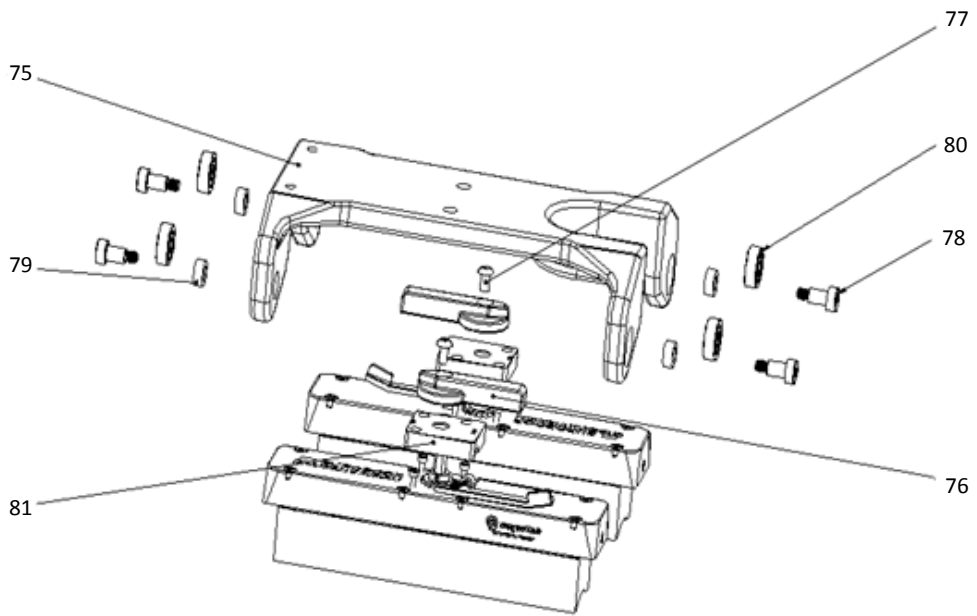
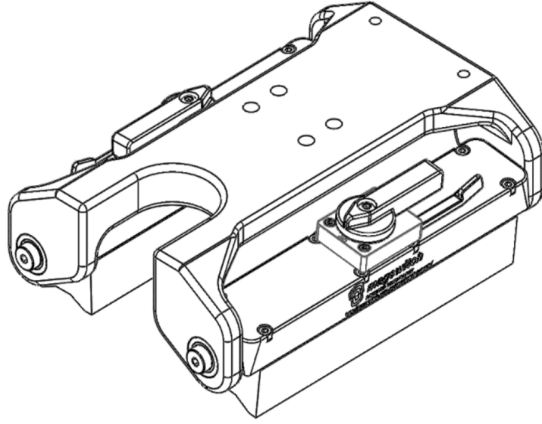
8. Exploded view & spare parts list

8.1 Exploded view

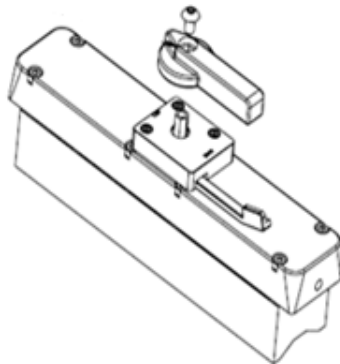


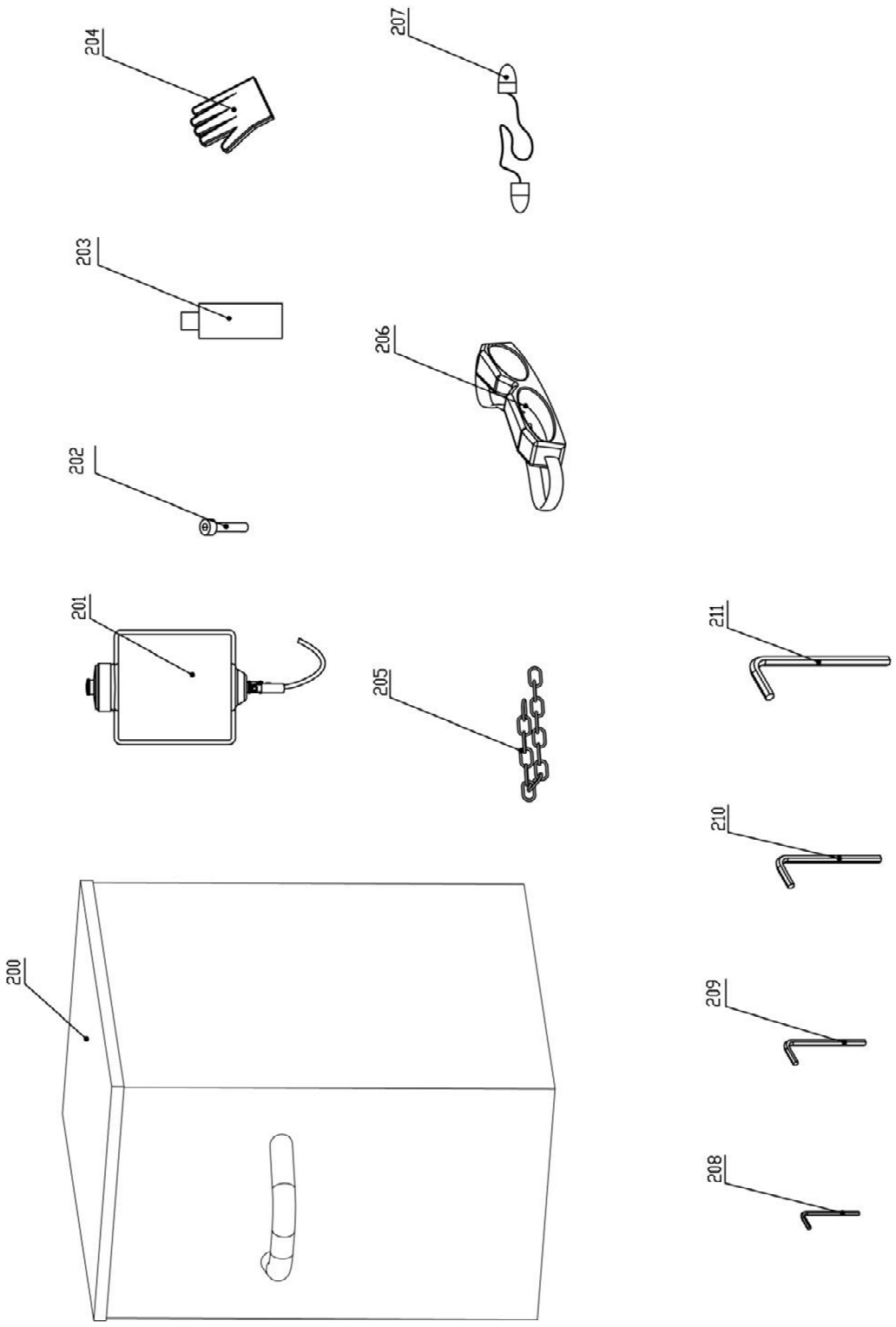


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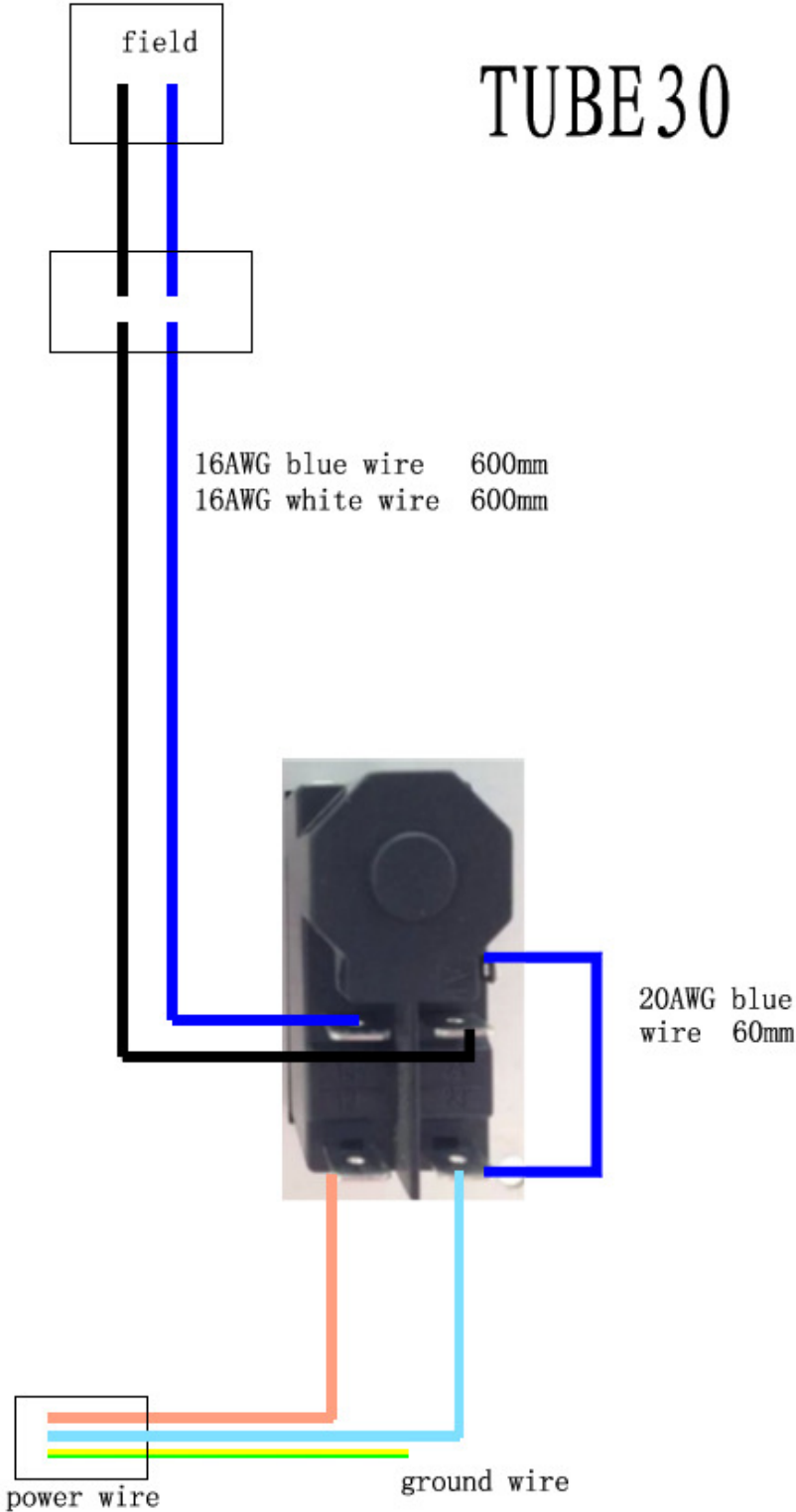
8.2 Spare parts list

No	Part no.	Description	Qty
1	030E.5001	Motor complete	1
	030E.5002	Motor 110V	
2	032.0106	Screw BK4,8x55	4
3	032.0111	End Cover	1
4	032.0136	Screwfor spring	2
5	032.0141	Spring	2
6	020.0183	Screw M4x15	2
7	032.0241	Housing	1
8	032.0146	Carbon Brush Set 220v	2
	032.0147	Carbon Brush set 110v	
9	032.0116	Screw 4,2x13	2
10	032.0131	Adaptor Ring Cap	1
11	032.0151	Field 220v	1
	032.0152	Field 110v	
12	032.0156	Screw M4x55	2
13	032.0161	Baffle	1
14	032.0126	Bearing 608	1
15	032.0181	Armature 220-240v	1
	032.0182	Armature 110-120v	
16	032.0166	Circlip 472/28	1
17	032.0171	Bearing 6001	1
18	032.0236	Inner Gear Plate	1
19	032.0176	Circlip 471/10	1
20	032.0237	Gasket small	1
21	032.0126	Bearing 608	1
22	032.0226	First Gear	1
23	032.0186	Spindle Gear	1
24	032.0191	Adaptor ring	1
25	032.0196	Bearing 6003	1
26	KSP.S	Coolantnipplequickconnect	1
27	032.0211	Casing Pin	1
28	030E.5028	M6x12	1
29	030E.5029	Rack	1
30	020.0156	Hexscrew M8x25	3
31	030E.5031	Gear Box	1
31/Set	030E.5031/ Set	Gear box complete	1
32	032.0216	Screw BK5x40	4
33	030E.5033	Seal	2
34	030E.5034	Bearing	1
35	030E.5035	Spindle	1
36	020.0136	M8x8	2
37-41	030E.5037	Spindle set ECO.30	1
42	030E.5042	Brass rail left	1
43	030E.5043	Brass rail right	1
44	020.0086/S	M4x20	6
45	020.0101	M4x8	8

No	Part no.	Description	Qty
46	PP.30/2ET	Back panel ECO-TUBE.30	1
47	KSP.MS	M5x10	2
48	KSP.M4	Tank holder ECO.30(S) (frame side)	1
49	020.0081	End screw M6x16	1
50	020.0077	End Plate	1
51	030E.5051	Spring washer	1
52	030E.5052/ 2	Frame	1
53	020.0056/S	Setting Screw M5x6	3
54	020.0046	Motor cable complete	1
55	030E.5055	Coupling nut angle	2
56	030E.5056	Ring $\phi 28 \times \phi 34.5 \times 0.2\text{mm}$	1
57	020.0061/X B	Capstan Hub Assembly	1
58	030.0030X	arm forcapstan	3
59-61	020.0182	Grounding set	1
62	020.0036	Maincable 220V EU	1
	020.0036/A U	Maincable Australia	
	020.0036/U K	Maincable UK 220v	
	020.0036/U K 110-16A	Maincable UK 110v 16A	
	020.0036/U SA	Maincable USA	
	020.0031	Coupling nut PG11 (main cable)	
63-64	020.0037	Cable clamp set	1
65	100A.0014A	Screw M8x25	2
68	020.0146	Screw SSM6x25	2
69-70	020.0111	Washer	
71	PP.30/1ET	Panel plate ECO-TUBE.30	1
73	030E.0091/ Y	Motor switch (5-pin) 220-240V YELLOW	1
	030E.0092/ Y	Motor switch (5-pin) 110V YELLOW	
74	030.1013	Magnet base ECO-TUBE.30 complete	1
75	3001234	Magnetic Base Frame	1
76	3001235	Magnet Handle Kit	2
77	180165	M5x8 Button Head	2
78	1801027	Shoulder Bolt, Mounting	4
79	1801028	Bushing, Brass	4
80	180158	Bearing	4
81	600244	Ratchet cover Red	2

No	Part no.	Description	Qty
82	8000996	Magnet array complete (incl. 76 & 77)	2
200	CAS. TUBE30	Case for TUBE.30 metal	1
201	KSP.Q2	Coolant tank Quick Connect 2015	1
202	020.0511	Bolt M5 x 10	3
203	IBO.10.200	Cutting oil IBO.10 0.2LTR	1
204	SAF.300	Protective gloves	1
205	SAF.400	Safety chain (1 mtr) with lock	1
206	SAF.100	Safety goggles	1
207	SAF.200	Ear plugs	1
208	IMB.US2.5	Allen key 2.5 mm	1
209	IMB.US3	Allen key 3.0 mm	1
210	IMB.US4	Allen key 4.0 mm	1
211	IMB.US5	Allen key 5.0 mm	1

8.3 Wiring diagram



8.4 Warranty and service

Warranty

Euroboor B.V. warrants this magnetic drilling machine to be free of material defects and workmanship errors under normal use for a period of 12 months after date of purchase.

This 12 month period can be extended to 24 months in total by registering the product on our website: <https://euroboor.com/support/register/>.

Service

To maximise the lifetime of your EUROBOOR machine always use service and parts from an official EUROBOOR distribution channel. Whenever in need of such, always contact original point of sales or if no longer existent the distributor of EUROBOOR products in your country.