

ALLCUT

Operating Instructions for ALLCUT **TwisTech** 31/2 V



TwisTech

THANKS FOR PURCHASING ALLCUT MAGNETIC DRILL MACHINE

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INTENDED USE

The ALLCUT TwisTech 31/2 V magnetic drilling machine is uniquely designed to be used for drilling operations using twist drills on magnetic metals, for cutting threads, and reaming within the limits specified in the technical data.

Any other use of the machine except stated above is inappropriate.

**WARNING**

Danger resulting from improper use

If the machine is not used as stated above, and if used in any other way, the machine may become a source of danger.

- Use the machine as described in the operating manual.



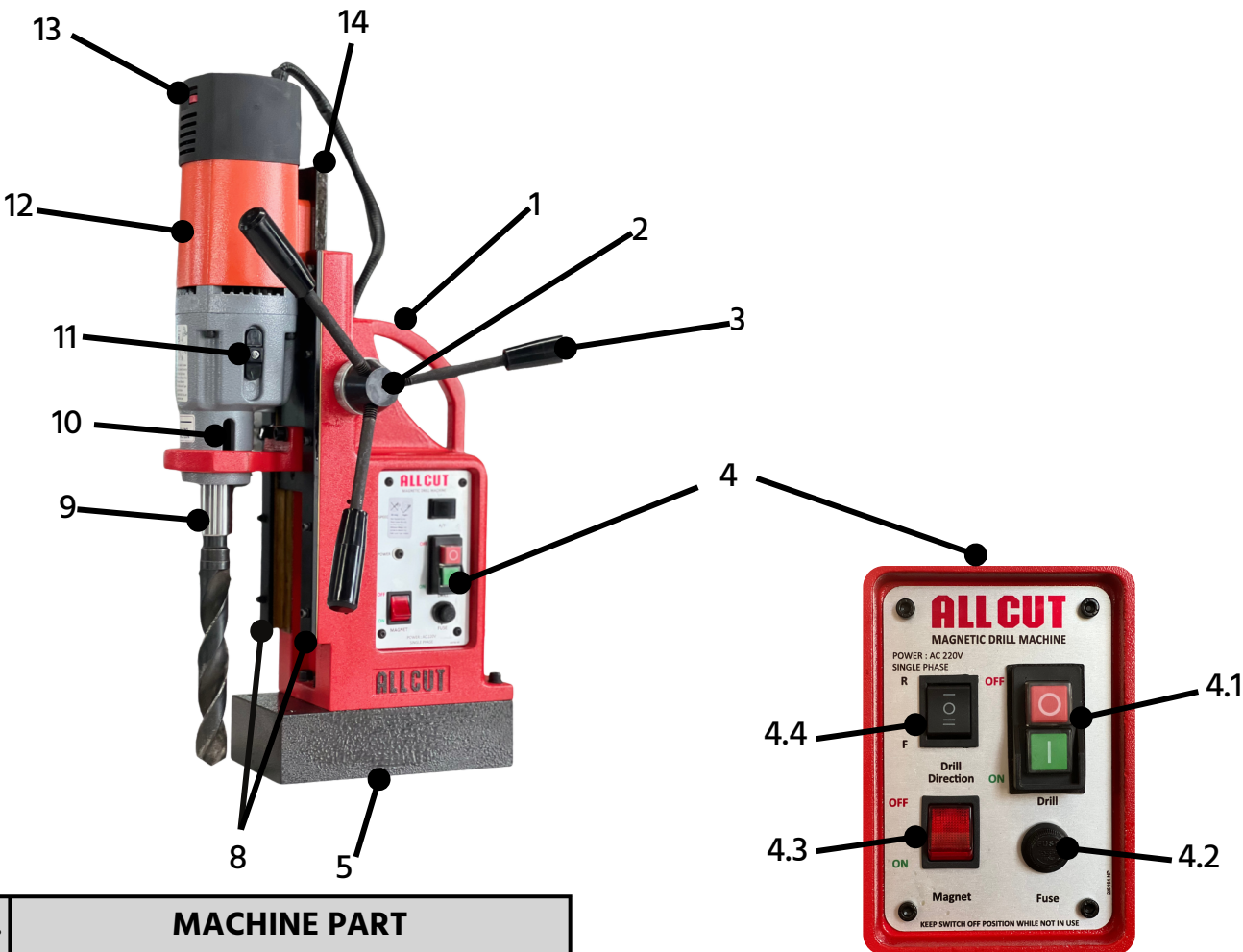
DEAR CUSTOMER,

Please read the instruction regarding the startup, safety, cleaning, and other details mentioned in this operating manual. Ignoring this may cause serious injury to the operator as well as the machine.

Keep this instruction manual for future use.

The manufacturer is not responsible for damage of the machine or accident caused due to not reading this instruction manual properly, using the machine other than its purpose, third party repair, modifying the machine without our consent or using of unauthorized spare parts, tools and accessories.

MACHINE OVERVIEW



SR. NO.	MACHINE PART
1	MAIN BODY
2	PINION
3	HANDLE
4	PANEL
5	ELECTROMAGNET
6	TWIST DRILL
7	SPINDLE WITH MT-2 SHANK
8	STEEL WEDGES
9	MT-3 SHANK
10	OPENING FOR EJECTOR PIN
11	GEAR CHANGER
12	DRILL MOTOR
13	ELECTRONCI SPEED CONTOLLER
14	STEEL SLIDE

SR. NO.	PANEL
4.1	MOTOR ON/OFF SWITCH
4.2	FUSE HOLDER
4.3	MAGNET ON/OFF SWITCH
4.4	DRILLING DIRECTION SWITCH

NOTE

When using electrical tools, please read and follow the following precautions to prevent any type of injury, fire or electric shock.

BASIC SAFETY MEASURES

- Do not use the machine on or near flammable environment.
- Person with heart diseases or medical conditions should use the machine under supervision or prevent using the machine.
- Person who is unable to operate the machine safely, should use it under supervision of a responsible person.
- Children are not allowed to use the machine.
- Before using the machine, check for any visible damages. Do not operate a damaged machine.
- Before beginning the work, check the condition of the safety chain and the function of the switches on the machine.
- Repairing of the connecting cables should be performed by a qualified electrician.
- Repairs of the machine should be carried out by an approved specialist workshop or by the manufacturer. Unapproved repairs can lead to considerable damage to the operator.
- Repairs to the machine during the guarantee period can only be performed by the manufacturer, otherwise the guarantee is invalid.
- Damaged parts should be replaced by original spare parts. This ensures the safety of the machine.
- Keep an eye on the machine during the operation.
- Store the machine in a dry environment.
- Make sure the machine is cleaned and free of metal chips after every operation.
- Do not expose the machine to moisture environment.
- Do not exceed the capacity of the machine. Refer to the technical data for the information.
- Keep the machine clean, dry and free of oil and grease.

WARNING

Risk of accident due to starting of the motor unintentionally!

Pay attention to the following measures to avoid injuries due to starting of the motor unintentionally.

- Press the red button (O) of the motor switch(4.1) after every operation.
- Switch off the machine with magnet switch (4.3) so the motor doesn't start.

! DANGER

Danger from electric current!

Contact with live wires or components may lead to serious injury to the operator.

Read the following safety precaution to avoid any electric shock.

- Make sure the machine and main plug is beyond the reach of water or any other liquid.
- Do not operate the machine with panel or motor housing opened.
- If using extension cable, make sure the extended wire is of 1.5 mm².
- Check the condition of the extension wire regularly and replace it if damaged.

! WARNING

Risk of injury due to improper handling of the machine!

Pay attention to these instructions in order to avoid any type of injury.

- Operate the machine with the protective equipment mentioned below.
- Do not wear protective gloves when the machine is on. The rotating part may catch the glove and torn off the hand.

ATTENTION

Potential damage to the machine due to improper use.

Read these instructions to avoid damage to the machine.

- Always carry the machine with the handle.
- Before plugging on the machine, check whether the voltage supply is proper (refer to the technical data sheet).
- Do not pull the main cable to remove the plug from the main socket.

REMEMBER THIS SYMBOLS



1



2



3



4



5

MEANING OF THE SYMBOLS:

1. Wear protective goggles.
2. Wear proper hearing protection equipment.
3. Do not put your hand near cutting area
4. Beware of electric shock.
5. Beware of rotating parts machine parts.



ALWAYS READ THIS MANUAL
BEFORE OPERATING THE MACHINE.

SAFETY MEASURES, BEFORE USING FOR THE FIRST TIME

WARNING

- Always switch off the machine when changing tool, conducting maintenance or cleaning. Wait till the machine has completely stopped to avoid unintentional starting of the machine.
- Do not put your hand into the machine while the machine is in operation. Remove the metal chips only when the machine is standstill. Wear the protective gloves when removing metal chips.
- When using a temporary plate for drilling, make sure the supplied voltage is stable. For more safety, use a safety belt so the machine holds the plate securely.
- Secure the machine with a safety chain when working in an inclined or vertical position and during overhead operation. The machine could fall down if the magnet is loosened or the power drops.
- Check that the tool is securely tightened before using.
- Do not allow the connecting cable to hang over the edges.

ATTENTION

- Do not crush the power cord.
- Do not put the main power cord near heated objects or chemical liquids.
- Do not drag the power cord across sharp edges or hot surfaces.
- Put the power cord in such a way that it cannot be caught by rotating parts of the machine.
- The machine stops automatically when the magnet switch (4.3) is switched off.

NOTE

Check for any visible signs of damage or missing items on delivery. Report an incomplete or damaged delivery to your dealer/supplier/manufacturer.

Preparation

Read the following instructions carefully and take the safety precautions before starting the machine.

Additional safety measures for special jobs.

Drilling Vertically

WARNING

Risk of injury due to machine falling down.

- When working on inclined or vertical position or overhead position, the machine should be secured with a safety chain to prevent it from falling.
- Tighten the safety chain as much as possible around the handle of the machine.
- Check the secure fitting of the safety of the safety chain before starting the work.
- Use proper protection equipment as mentioned on the machine.

Additional safety measures for special jobs.

Drilling using temporary plate

WARNING

When working of the machine is on scaffolding, the machine can make sudden vibrations and could slip off the plate, causing danger. Prevent these by:

- Securing the machine with the plate using the safety chain.
- Clamping the plate tightly with the surface that is to be drilled.
- Wear proper safety equipment.

NOTE

- Make sure to make a pilot punch before drilling.
- Always use cutting oil or coolant when drilling.

Check the condition of the surface

The magnetic force is dependent on the condition of the surface/plate to be drilled. If the surface/plate is painted, coated, uneven or rusted, the magnetic force will be reduced.

To increase the magnetic force of the electromagnet, the surface/plate should be:

- The plate should be magnetic.
- the electromagnet (5) should be free from grease, oil, metal chips, or any other dirt.
- The plate should be smooth and levelled.

The electromagnet best works with low-carbon steel surface with a thickness of at least 20mm.

Plate with low thickness

When drilling into low thickness steel plate, we recommend to use an additional steel plate with 200X200X20 mm dimensions. Secure the additional plate tightly with the surface to prevent it from falling.

Inserting the tool

The machine is equipped with MT-3 shank. USE ONLY TOOLS WITH MT-3 SHANK ON THE MACHINE.

WARNING

Risk of injury!

- Do not use damaged, spoiled or worn out tools.
- Change the tools only when the machine is switched off and at standstill.
- After inserting, make sure the tool is engaged tightly.
- Only use the tools that are compactible with the machine.

INSERTING THE TOOLS

- Before fitting the tool, make sure to clean the shank and the tool.
- Insert the tool into the spindle taper (9) of the machine from below.

REMOVING THE TOOLS

- Turn the tool until the ejector pin slips into the opening for ejector pin (10).
- Loosen the tool by tapping on the ejector pin with a hammer.

Switching the machine ON/OFF

- First turn on the magnet switch (4.3).
- Then turn ON the machine with the green button (I) on the drill switch (4.1).

NOTE

- The machine can only be turned on when the electromagnet is active or turned on.

Selecting the speed range



ATTENTION

The machine is equipped with two stage transmission and an electronic speed changer (13).

NOTE

Select the speed range according to the material and the diameter of the hole.

Changing the gears

To change the gears, proceed as follows:

- First OFF the machine by turning off the drill switch (4.1). Let the machine is at standstill.
- Push in the gear changer (11), and slide up or down the gear changer.



WARNING

- Change the gears only when the machine is turned off and make sure the spindle taper (9) is not rotating.
- Changing gears while spindle is rotating, will crush the gears of the gear box.
- Make sure that the gear changer (11) is slide up or down till the end and the gears are engaged properly. If not it will wear out the gears.
- If the gears does not engage properly, rotate the spindle taper (9) a little bit using hand, and slide up or down the gear changer.

STARTING ON THE MACHINE, USING THE MACHINE

Changing the speed

The machine is equipped with an electronic speed changer (13), so you can drill with your desired speed. To do so proceed as follows:

- Slide the electronic speed changer (13) in left or right direction slowly.
- There are 6 levels on the speed controller. Select your desired speed by referring to the table below.

	GEAR 1 ▲	GEAR 2 ▲
LEVEL 1	60 rpm	110 rpm
LEVEL 2	90 rpm	165 rpm
LEVEL 3	120 rpm	230rpm
LEVEL 4	160 rpm	320 rpm
LEVEL 5	200 rpm	390 rpm
LEVEL 6	230 rpm	430 rpm

! NOTE

- The speed range shown in the table are no-load speed. The speed may vary at time of drilling.
- If possible, try to set a lower gear stage and higher level on speed controller. The drill motor will have higher torque, protecting the motor from overheating under overload.

Drilling with the machine

! NOTE

The ALLCUT TwisTech 31/2 V is designed to be used with twist drills, to make threads and reaming purposes. Read these instructions to proceed for your purposes of using of the machine.

Drilling with twist drills

When drilling with twist drills, proceed as follows:

- Push the twist drill with MT-3 taper shank into the spindle taper (9) from below.
- Position and fix the machine at the location of the use.
- Switch ON the electromagnet by switching ON the magnet switch (4.3).
- Select a suitable speed level using electronic speed controller (13).
- Switch ON the drill switch (4.1) by pressing the green button (I).
- Direct the drill to the surface/plate by pulling down the handle (3).



ATTENTION

Observe the following instructions when drilling with twist drill:

- Under excessive pressure, the drill can wear out and the machine can be overloaded.
- Make sure to remove the metal chips regularly, especially when with higher drilling depths.
- USE PROPER CUTTING OIL OR COOLANT FOR LONGER TOOL LIFE.
- Follow proper drilling direction.
- Make sure the drill direction switch is at position F (4.4).

Tapping with the machine

The ALLCUT TwisTech 31/2 V is equipped with reversible motor and can be used for tapping (see the technical data for the limits).

In order to cut threads , proceed as follow:

- Drill the hole for the thread.
- Switch off the machine.
- Remove the drill bit as stated above and insert the tapping adaptor (available as accessory) into the spindle taper (9).
- Set the speed level to 1 (13).
- Set the direction of rotation to clockwise (F) at the switch (4.4) by pressing the switch downward (=).
- Switch ON the machine and place the drill tap onto the drilled hole.
- Use the handle (3) and feed downwards slowly with less pressure until the desired thread length has been cut.
- Switch OFF (4.1) the machine and set the direction of rotation to anti-clockwise (R) at the switch (4.4) by pressing the switch (4.4) upwards (-).
- Switch ON (4.1) the machine again and slowly feed the handle upwards (3) till the drill tap emerges out.

! NOTE

- Always set the speed level to 1 (13) when you are tapping with the machine, to obtain precise threads.
- Always use proper cutting oil or lubricant while you are tapping to avoid damaging the drill tap and to get nice threads.

Reaming with the machine

The ALLCUT TwisTech 31/2 V is a multi-purpose magnetic drill machine, that can also be used for reaming purpose.



ATTENTION

- When reaming with the machine, look out for the limits stated in the technical data.
- Reamers with MT-3 taper shank should only be used with the machine.
- Always use proper cutting oil or coolant while reaming with the machine.

REMOVING BLOCKAGES, CLEANING, MAINTENANCE

Removing blockages

WARNING

Risk of injury due to broken tool or metal chips.

- Always use protective gloves when using the machine.

Blockages caused by broken tool:

- Switch OFF (4.1) the machine and remove the plug from the main socket.
- Move the machine slide up with the help of the handle (3).
- Remove the metal chips and replace the broken tools.

Other blockages:

- Switch OFF the drill motor (4.1). Let the electromagnet be on.
- Move the machine slide up with the help of the handle (3).
- Remove the metal chips and check for the tool damage.

NOTE

- Always use good quality drill bits and cutters for better performance.
- Do not use damaged or worn out drill bits and cutters.
- Do not exert more pressure on the handle (3), if the drill bit or cutter is worn out or damaged. Doing so will damage the machine.

Cleaning the machine

WARNING

- Make sure to switch OFF (4.2) completely and remove the main cord from the main socket.
- When using compressed air for cleaning or removing metal chips, wear the protective goggles and gloves for safety. Protect other persons in the working area too.

ATTENTION

- Never use water to clean the electric panel or electric components.
- Prevent the machine from water or other liquids.

After each use:

- Remove the inserted drill bit or tool.
- Remove the metal chips and coolant residues.
- Clean the tool and the spindle taper (9) on the machine.
- Clean the machine slide (14) with clean cloth.
- Clean the electromagnet (5) base and let it be free of oil, metal chips or dirt.
- Clean the whole machine and remove all the dirt and grease.

Maintenance

WARNING

Danger Caused by unqualified repairs !

Unqualified or third-party repairs leads to serious damage for the operator and the machine too.

- Repairs of electrical components should only be carried out by the manufacturer or by skilled person.

Adjusting the machine slide:

If the machine slide (14) slips down easily, it must be adjusting. To do this, proceed as follows:

- Take the M5 Allen key provided with the tools kit.
- Look out for hex bolts on steel wedges (8).
- Tighten the hex bolts a little bit and check the slide.
- If the slide is too tight loosen the bolts.

Replacing the carbon brushes

Check out for the worn out carbon brushes. Replace the carbon brushes if needed. Unauthorized carbon brushes will damage the drill motor (12).

STORAGE, TECHNICAL DATA

Customer service/service

If the machine is too damaged or cannot be repaired by you, please contact ALLCUT team/dealer/supplier. We will be happy to provide you with best service.

Storage

If you are not planning to use for a long time, clean the machine as described in the CLEANING SECTION. Store the machine and all its accessories in a dry, clean and non-moisture environment, to prevent it from rusting.

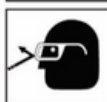
Technical data

Model	ALLCUT 31/2 V	
Dimensions (L X W X H)	350 X 190 X 480	mm
Electromagnet (L X W X H)	240 X 125 X 60	mm
Weight	31	Kg
Power supply	220 V single phase	
Motor W	1800	W
Noise emission	110	db
Drilling Depth	250	mm
Drilling Capacity (Ø)	31	mm
Twist Drill:		
Tapping Capacity	M24	
Reaming Capacity (Ø) :	31	mm
Speed range (No-Load)	60-430	rpm
Reverse/forward	YES	
Spindle Taper	MT-3	
Main cord length	2	m

NOTE

The speed range described in technical data is NO-LOAD speed. the speed may vary at the time drilling by 20%.

SAFETY FIRST



Always wear eye protection while using cutting tools, or in the vicinity of cutting.



CAUTION! Cutters are sharp. Wear gloves when installing or removing cutter from arbor. Do not grab a rotating cutter.

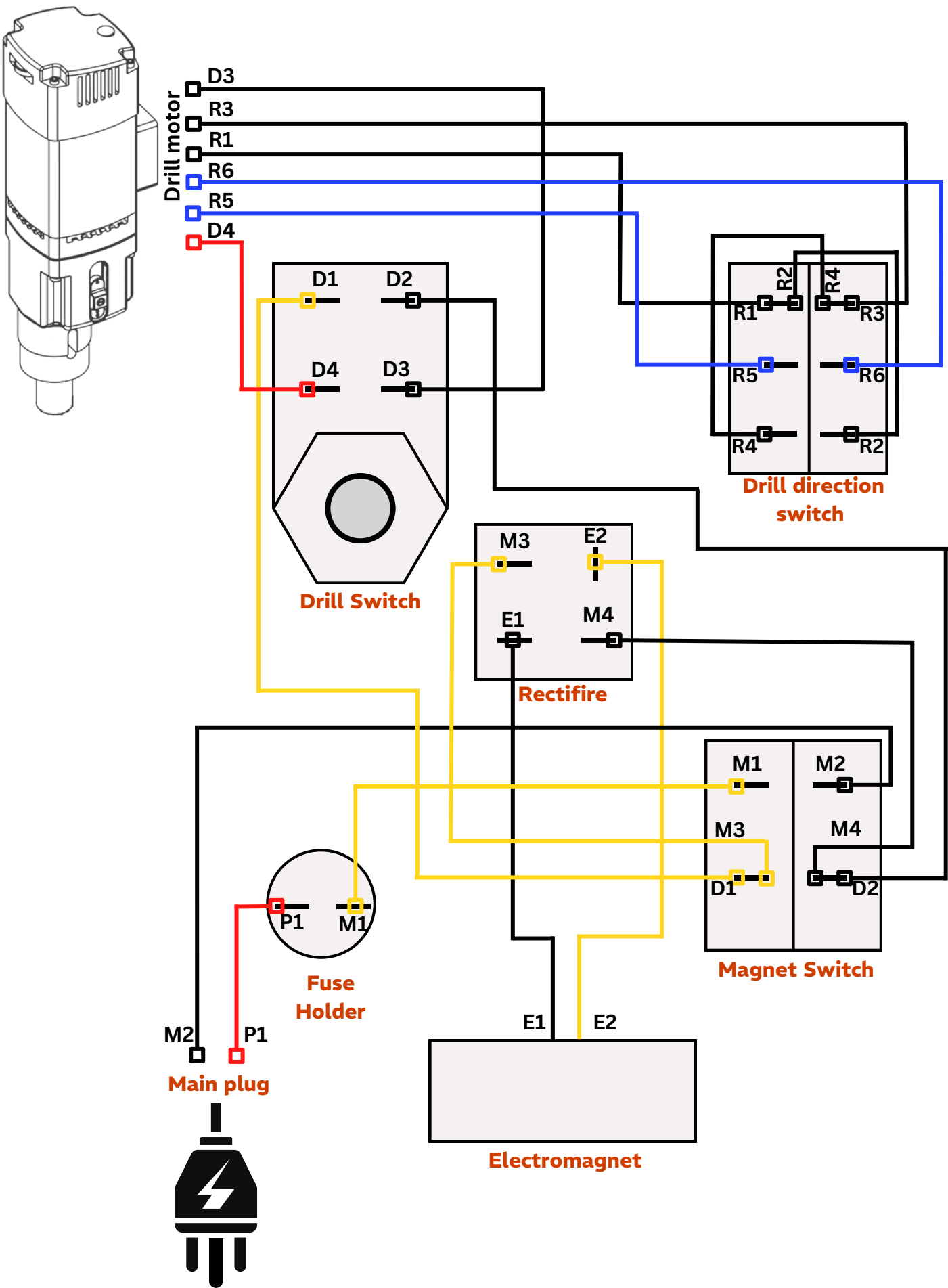


CAUTION! The slug is ejected at the end of the cut. Do not aim cutter or arbor so that ejected slug may hit someone around, or below you.

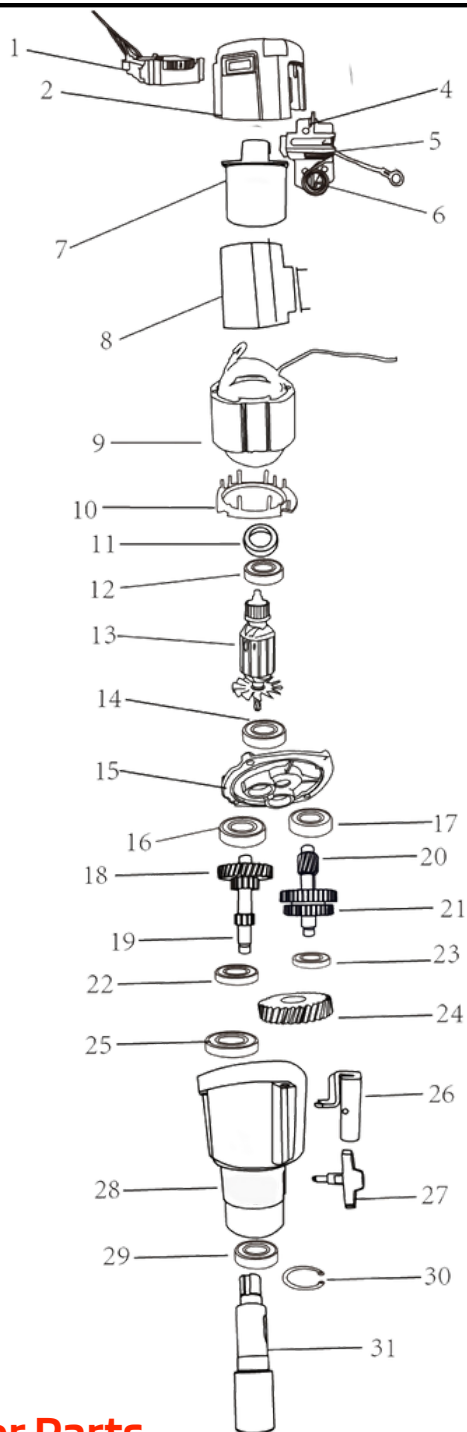


CAUTION! To prevent electric shock, do not use power tools near wet areas, or where power tool may become wet.

WIRING DRAWING



SPARE PART LIST

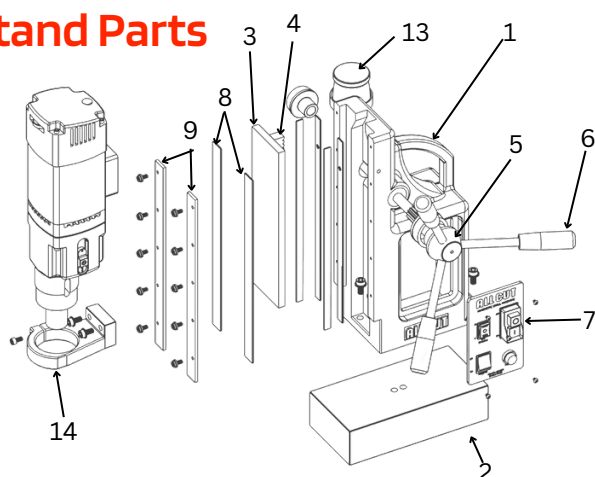


Motor Parts

Posi. No.	Part Name	Part No.
1	Power controller	3185A01
2	Cap for motor housing	3185A02
4	Carbon Brush holder with spring	3185A04
5	Carbon brush	3185A05
7	Plastic motor housing	3185A07
8	Motor housing	3185A08
9	Stator/Field Coil	3185A09
10	Fan guide	3185A10
11	Bearing guide	3185A11
12	Armature back bearing	3185A12
13	Rotor/Armature	3185A13
14	Armature front bearing	3185A14
15	Bearing plate	3185A15
16	Gear bearing	3185A16
17	Gear bearing	3185A17
18	Gear set	3185A18
20	Intermediate shaft 2	3185A20
21	Gear block	3185A21
22	Gear bearing	3185A22
23	Gear bearing	3185A23
24	Spindle bearing	3185A24
25	Gear case bearing	3185A25
26	Coupling bolt complete	3185A26
27	Gear changer switch	3185A27
28	Gear case	3185A28
29	Gear case bearing	3185A29
30	Locking ring	3185A30
31	Main spindle	3185A31

No.	Part Name	Part No.
1	Main body	AS318501
2	Electromagnet	AS318502
3	Main slide	AS318503
4	Rack	AS318504
5	Pinion	AS318505
6	Handle	AS318506
7	Panel complete	AS318507
7A	switch 4.4	AS318507
7B	rectifier	AS318507
7C	fuse holder 4.2	AS318507
7D	panel plate	AS318507
4.3	mag switch	AS318507
4.4	R/F switch	AS318507
8	Metal wedge	AS318508
9	Steel wedge	AS318509
10	Coolant bottle	AS318510
11	Motor bracket	AS318511

Stand Parts



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