

ALLCUT

Operating Instructions for ALLCUT cutXpert 31/100



| cutXpert

THANKS FOR PURCHASING ALLCUT MAGNETIC DRILL MACHINE

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INTENDED USE

The ALLCUT cutXpert 31/100 magnetic drilling machine is uniquely designed to be used for drilling operations using twist drills and annular cutters 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.



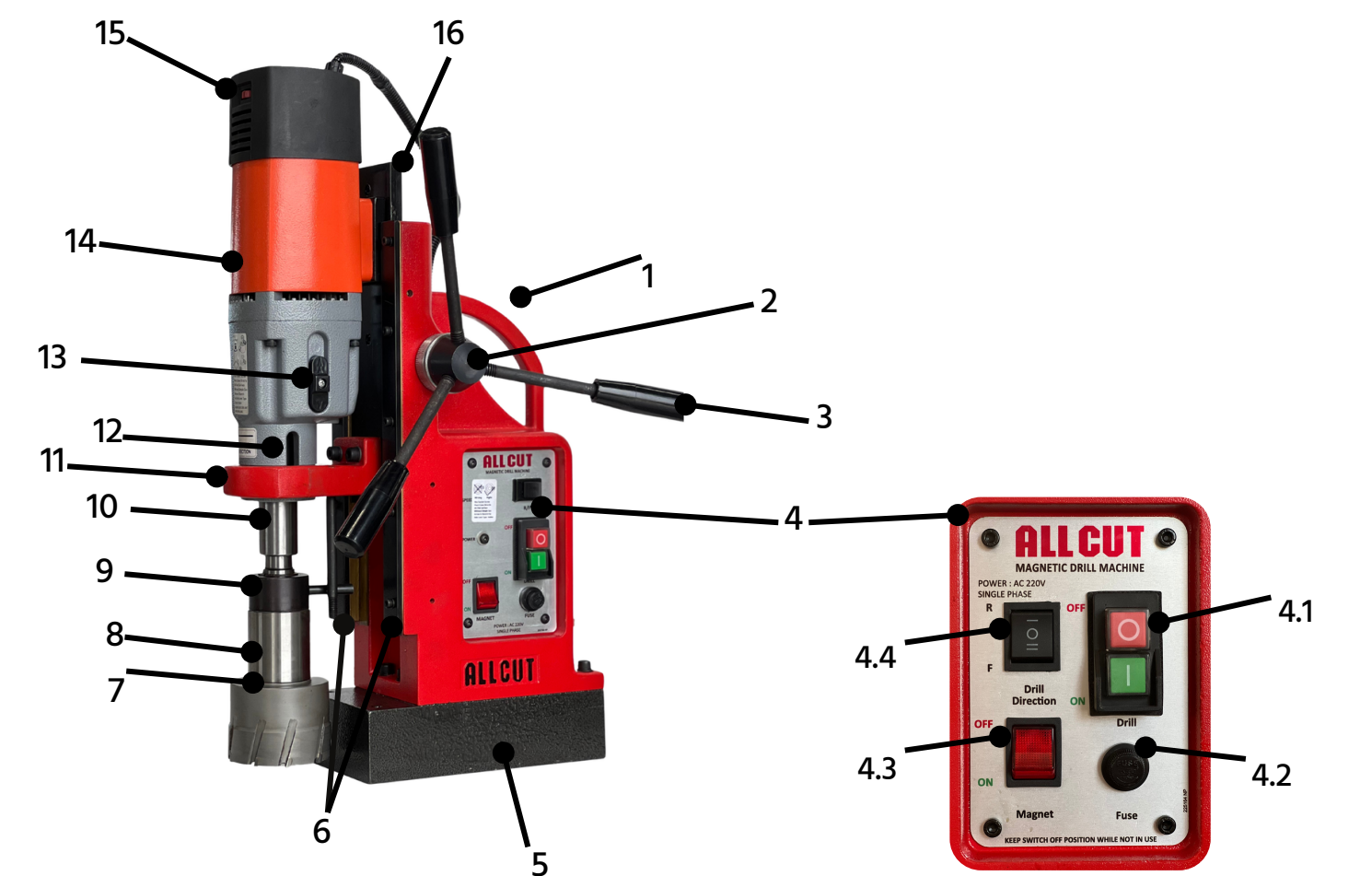
DEAR CUSTOMER,

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	STEEL WEDGES
7	ANNULAR CUTTER (TCT)
8	CUTTER ADAPTER
9	COOLANT BRACKET
10	SPINDLE WITH MT-3 SHANK
11	MOTOR BRACKET
12	OPENING FOR EJECTOR PIN
13	GEAR CHANGER

SR. NO.	MACHINE PART
14	DRILL MOTOR
15	ELECTRONIC SPEED CHANGER
16	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 (10) of the machine from below.

REMOVING THE TOOLS

- Turn the tool until the ejector pin slips into the opening for ejector pin (12).
- Loosen the tool by tapping on the ejector pin with a hammer.

USING THE MACHINE WITH ANNULAR CUTTERS.

INSERTING THE CUTTER

- First remove the tool, if any, from the spindle taper (10) using ejector pin.
- Insert the cutter adapter (8) provided into the spindle taper (10).
- Insert the cutter with the pilot pin into the Weldon shank of the adaptor.
- Tighten the grub screws of the Weldon shank.

REMOVING THE CUTTER

- Untighten the grub screws using the Allen key and remove the cutter from below.
- Remove the cutter adapter using ejector pin.

ATTENTION

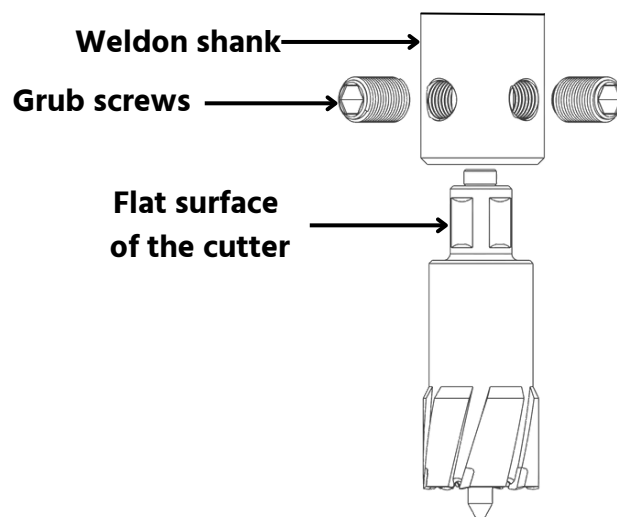
Risk of injury!

- Do not use damaged, spoiled or worn out cutters.
- Insert or remove the adapter only when the machine is switched off and at standstill.
- Make sure the adapter is engaged tightly.
- Make sure that the rod of coolant bracket (9) hits the rod on motor bracket (11).
- Make sure that the grub screws of the Weldon shank is properly aligned with the flat surface of the cutter.
- Assure that the grub screws are tightened properly.
- Refer to the figure below.

WARNING

Risk of injury!

- If the cutter is not aligned properly, the cutter will come out of the shank during the operation, causing injury to the operator.
- Starting on the machine with unaligned cutter will break the cutter in between the operation.



STARTING ON THE MACHINE

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 (15).

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 (13), 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 (10) is not rotating.
- Changing gears while spindle is rotating, will crush the gears of the gear box.
- Make sure that the gear changer (13) 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 (10) a little bit using hand, and slide up or down the gear changer.

Changing the speed

The machine is equipped with an electronic speed changer (15), so you can drill with your desired speed. To do so proceed as follows:

- Slide the electronic speed changer (15) 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 cutXpert 31/100 is designed to be used for drilling with twist drills, annular cutters, 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 (10) 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 (15).
- 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.
- Do not use worn out drill bits, otherwise the machine will be overloaded.
- If the drill bit is damaged or worn out, do not exert more pressure on handle. It will damage the machine.

Drilling with Annular cutter

The cutter adaptor of the ALLCUT cutXpert 31/100 is equipped with internal cooling system for the annular cutter. Always cool down the tool while drilling for better cutter life.

Turning ON the cooling system

To turn on the cooling system, proceed as follows:

- Attach the coolant bottle provided, on the machine.
- Connect the tube of the coolant bottle to the brass nipple on coolant bracket (9) on cutter adapter, by pushing the tube into the nipple.
- Fill up the coolant bottle with coolant or lubricating oil and screw on the bottle cap.
- Turn on the cock on the coolant bottle and let the coolant pass through the tube.

NOTE

- If the coolant doesn't pass the tube easily, loosen the bottle cap a little bit. Let the air in the bottle escape.
- Assure that the coolant or oil you are using is free of metal chips or any dirt, to prevent the wearing out of the tube.
- The coolant will come out from the bottom of the cutter adapter (8), cooling the cutter directly.
- The cooling system will only work when you use the cutter with proper pilot pin.
- Use the pilot pin for every operation. It assure proper rotation of the cutter and enables the cooling system.
- The cooling system will not work when drilling in overhead position.

When drilling with core drills, proceed as follows:

- Insert the appropriate pilot pin into the annular cutter and insert the cutter into the cutter adapter from below (8).
- Align the cutter and tighten the grub screws of the Weldon shank.
- Put the machine on the surface to be drilled on.
- Switch ON (4.3) the magnet switch to enable the electromagnet. Check that the machine sticks to the plate properly.
- Switch ON the machine by pressing the green button (I) on the drill switch (4.1).
- Slowly feed the handle (3) without exerting much pressure, directing the cutter to the material to be drilled on.



ATTENTION

Observe the following instructions when drilling with annular cutter:

- Drilling with annular cutters does not require much pressure.
- Do not apply too much pressure on the cutter. Doing so will reduce the cutter life, or even break the cutter. And also the machine will be overloaded.
- Always use high performance coolant for better drilling.
- Make sure to remove the metal chips regularly, so that the metal chips do not come in the way of the cutter while cutting.

Tapping with the machine

The ALLCUT cutXpert 31/100 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 (10).
- Set the speed level to 1 (15).
- 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 (15) 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 cutXpert 31/100 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

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.

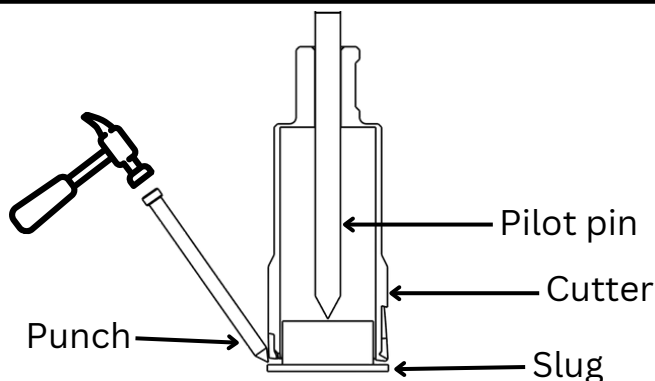
NOTE

- 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.

WARNING

Always remove the slug from the cutter after every operation.

- The pilot pin attached to the cutter removes the slug from the cutter automatically.
- But always make sure that the slug is always removed from the cutter.
- DO NOT hammer the cutter if the slug is not ejected.
- If the slug is stuck, take a punch and slightly hammer that punch, to remove the slug without damaging the cutter (Refer to the figure below).



Cleaning the machine

WARNING

- Make sure to switch OFF (4.3) 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 (10) 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 (16) 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 (6).
- 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 (14).

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.

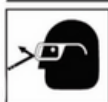
Technical data

Model	ALLCUT 31/100	
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	2000	W
Noise emission	110	db
Drilling depth: Twist drill (Ø): Annular cutter (Ø):	250 50/75/100	mm mm
Drilling capacity: Twist drill (Ø): Annular cutter (Ø):	31 85	mm mm
Tapping capacity	M24	
Reaming capacity (Ø):	31	mm
Speed range (NO-Load)	0-260/260-460	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.

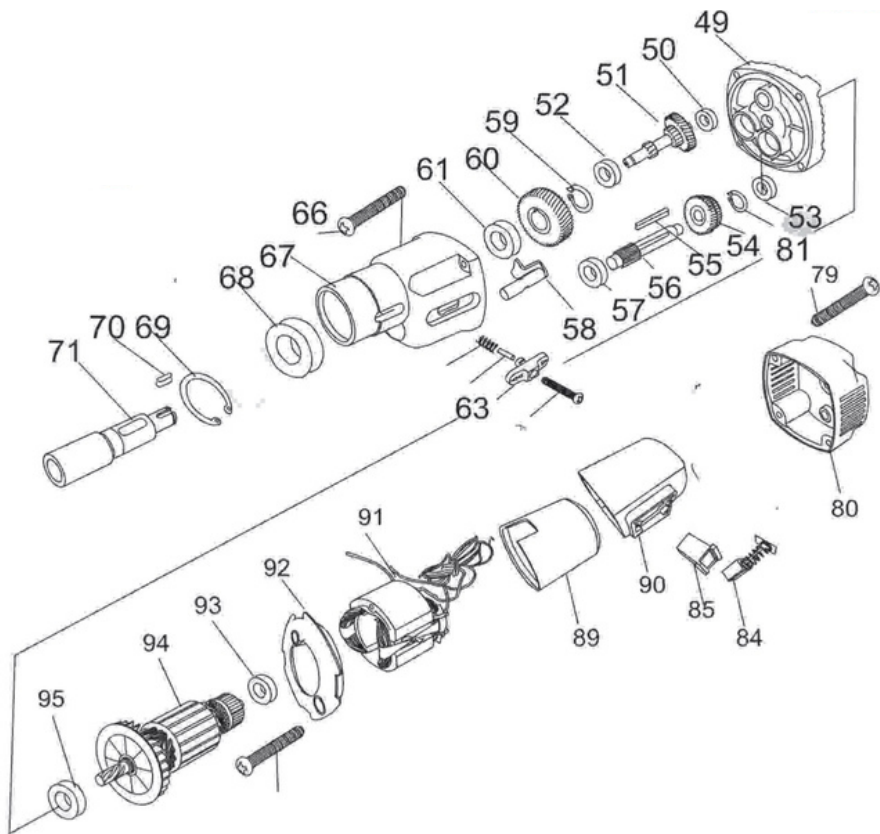


CAUTION! The slug is ejected at the end of the cut. Do not aim cutter or arbor so that ejected slug may hit someone around, or below you.



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

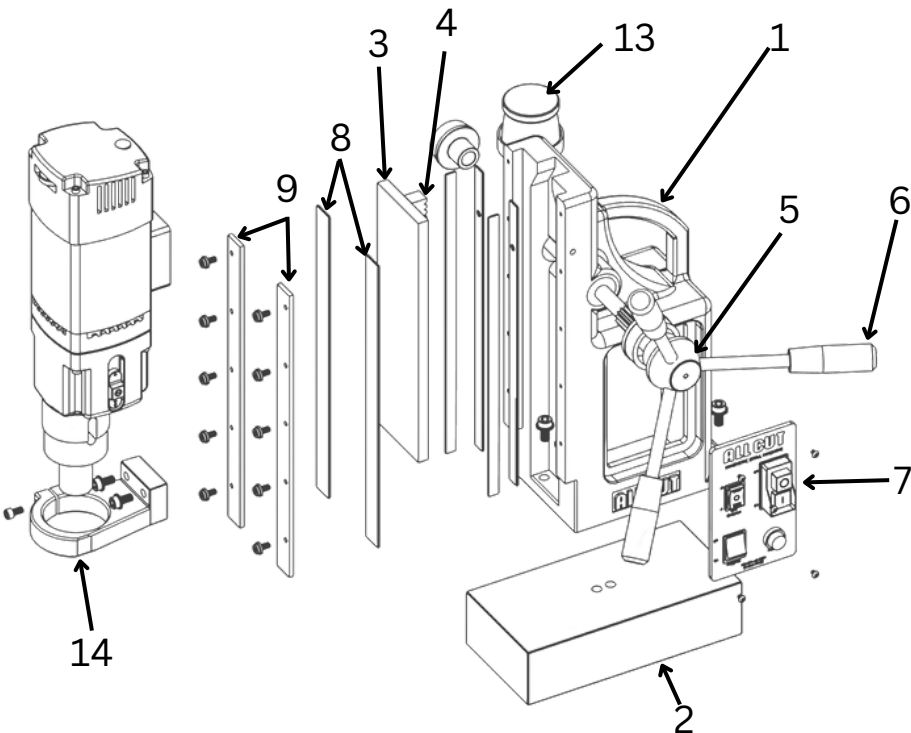
Motor Parts



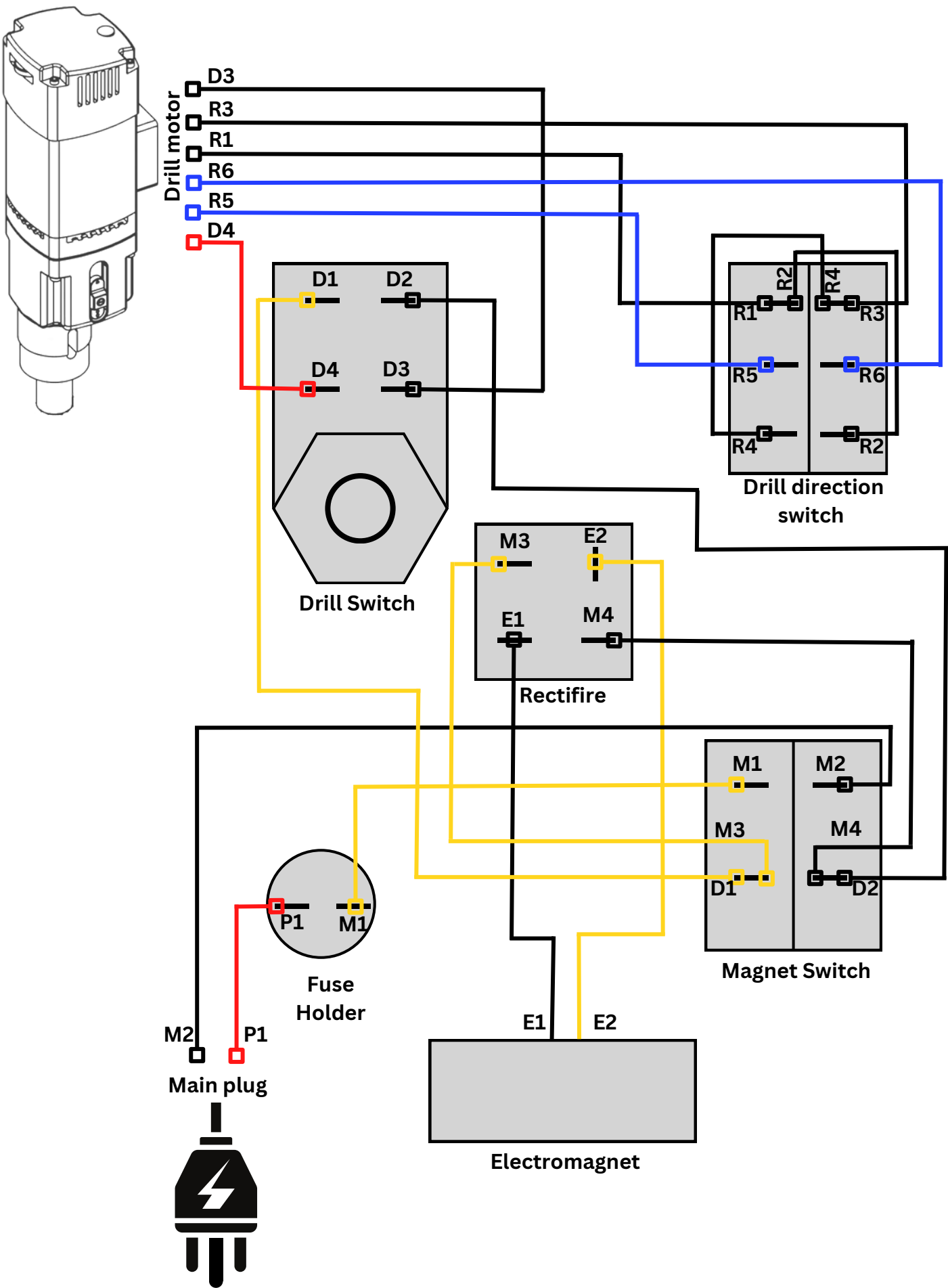
NO.	PART NAME	PART NO.	POSI NO.
1	Rotor complete	3185A94	94
2	Stator	3185A91	91
3	Motor housing	3185A90	90
4	Gear case	3185A67	67
5	Bearing plate	3185A49	49
6	Air guiding ring complete	3185A92	92
7	Cap for motor housing	3185A80	80
8	Plastic motor housing	3185A89	89
9	Brush holder complete	3185A85	85
10	Carbon brush	3185A84	84
11	Locking ring	3185A52	53
12	Spindle main gear	3185A60	60
13	Gear set	3185A51	51
14	Gear block	3185A54	54
15	Intermediate shaft-2	3185A56	56
16	Fitting key	3185A55	55
17	Coupling bolt complete	3185A58	58
18	Gear changer complete	3185A63	63
19	Locking ring 20/1,2	3185A59	59
20	Main spindle	3185A71	71
21	Armature teeth bearing	3185A95	95
22	Magnet ring	3185A93	93
23	Gear set bearing	3183A52	52
24	Bearing	3185A50	50
25	Bearing	3185A53	53
26	Main gear bearing	3185A61	61
27	Bearing	3185A57	57
28	Bearing	3185A50	50
29	Locking ring	3185A81	81

Stand Parts

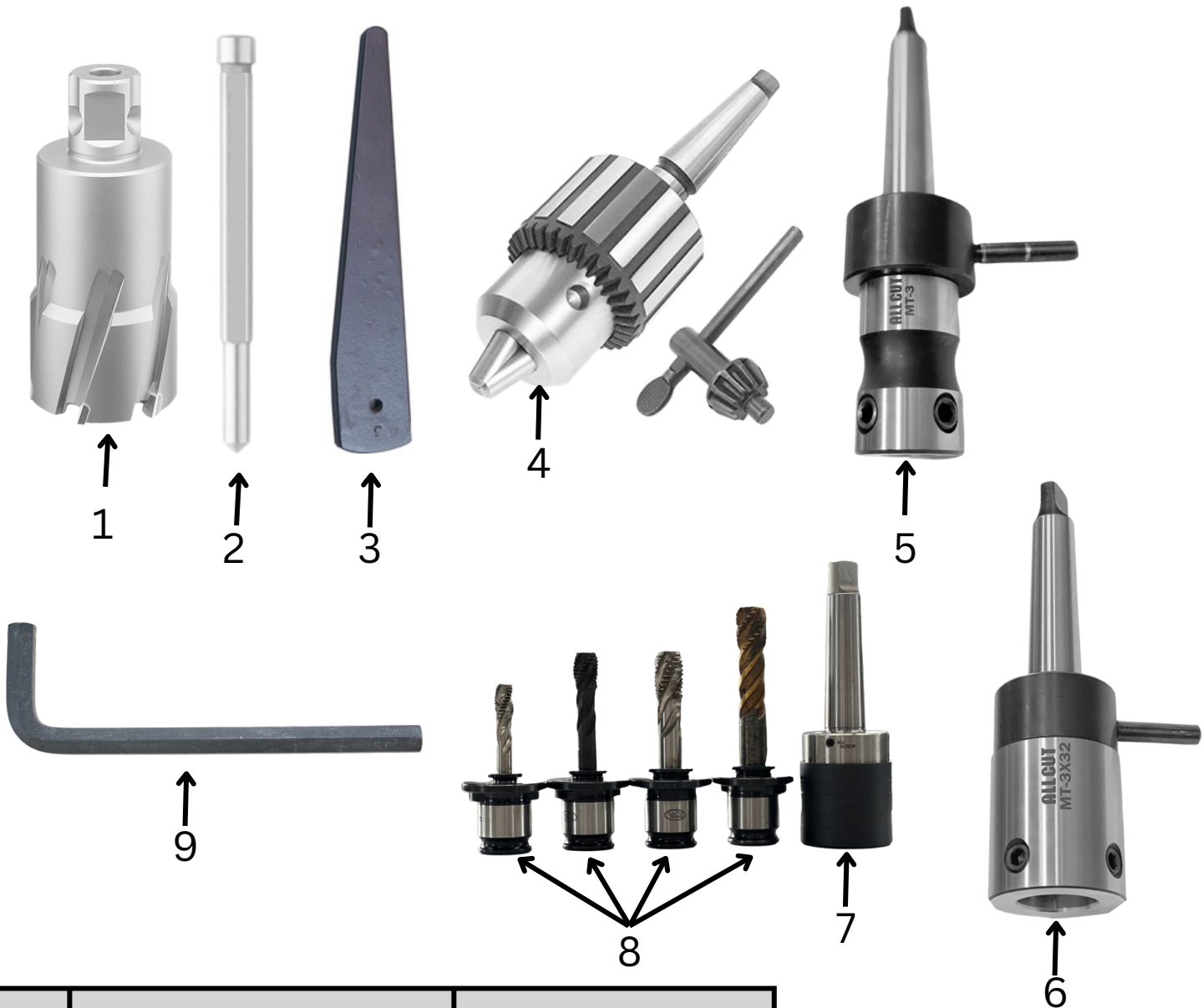
NO	NAME	PART CODE
1	MAIN BODY	AS318501
2	ELECTRO MAGNET	AS318502
3	MAIN SLIDE	AS318503
4	RACK	AS318504
5	PINION	AS318505
6	HANDLE	AS318506
7	PANEL COMPLETE	AS318507
7A	SWITCH	AS318507A
7B	RECTIFIRE	AS318507B
7C	DIRECTION SWITCH	AS318507C
7D	PANEL PLATE	AS318507D
7E	FUSE HOLDER	AS318507E
8	METAL WEDGE	AS318508
9	STEEL WEDGE	AS318509
13	COOLANT BOTTLE	AS318513
14	MOTOR BRACKET	AS318514



WIRING DRAWING



ACCESSORIES



SR. NO.	ACCESSORIES	
1	ANNULAR CUTTER (HSS/TCT)	AAC (ALL SIZES)
2	PILOT PIN	AAC
3	EJECTOR PIN	INC
4	DRILL CHUCK ARBOR	AAC
5	CUTTER ADAPTER (19mm)	INC
6	CUTTER ADAPTER (32mm)	INC
7	TAPPING ADAPTER	AAC
8	TAPPING COLLETS	AAC (ALL SIZES)
9	ALLENN WRENCHES	INC

(INC= INCLUDED) (AAC= AVAILABLE AS ACCESSORY)

NOTE

The products which are marked with AAC are extra accessory and have to be paid for each of them.

ALLCUT[®]sales

 **www.allcut.in**

EXPERIENCE HAPPY AND SAFE DRILLING WITH ALLCUT MAG DRILLS