

# ***Rotabroach***<sup>TM</sup>

## **Commando 35**

### **Magnetic drilling machine**

(Serial Number .....)



**Burgess Road  
Sheffield  
S9 3WD**

**Tel: +44 (0) 114 2212510**  
**Email: [sales@oslct.co.uk](mailto:sales@oslct.co.uk)**

**Fax: +44 (0) 114 2212563**  
**Website: [www.rotabroach.co.uk](http://www.rotabroach.co.uk)**

## CONTENTS OF THE MANUAL

	Page
1) Intended use	3
2) General safety rules	3
3) Information plate symbols	4
4) Specification	5
5) Operational safety procedures	6
6) Operating instructions	6
7) Extension cable selection	7
8) Mounting of cutters	7
9) Remedies for hole making problems	8
10) Wiring diagram	9
11) Exploded view	10
12) Motor Breakdown	13
13) Control panel and parts List	14
14) Maintenance	15
15) Trouble shooting	16
16) Cutter selection, speeds and feeds	17
17) Warranty	18

Part	Description	Quantity
	Allen keys	
EB010	Coolant Bottle assembly	1
VISO18	Guard	1
STRAP01	Safety Strap	1

## 1) INTENDED USE

The intended use of this magnetic drill is to drill holes in ferrous metals. The magnet is used to hold the drill in place whilst the drill is functioning. It is designed for use in fabrication, construction, railways, petrochemical and any other applications when drilling ferrous metal.

Any deviation from its intended use will not be covered by warranty.

## 2) GENERAL SAFETY RULES

**WARNING!** Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

**SAVE THESE INSTRUCTIONS.**

### Work area

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children and visitors away while operating a power tool.** Distractions can cause you to lose control

### Electrical safety

1. **Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adaptor plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If the tools should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
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. **Don't expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
4. **Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep 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 power tool outside, use an outdoor extension cord marked "W-A" or "W".** These cords are rated for outdoor use and reduce the risk of electric shock.

### Personal safety

1. **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating power tools may result in serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. 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 switch is off before plugging in.** Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
4. **Remove adjusting keys or switches before turning the tool on.** A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.
5. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enable better control of the tool in unexpected situations.
6. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hardhat, or hearing

protection must be used for appropriate conditions.

#### Tool use and care

1. **Use clamps or other practical way to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control.
2. **Do not force tool. Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed.
3. **Do not use tool if switch does not turn it on or off.** Any tool that cannot be controlled with the switch is dangerous and must be repaired.
4. **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.
5. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users.
6. **Maintain tools with care. Keep cutting tools sharp and clean.** Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control.
7. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using.** Many accidents are caused by poorly maintained tools.
8. **Use only accessories that are recommended by the manufacturer or your model.** Accessories that may be suitable for one tool, may become hazardous when used on another tool.

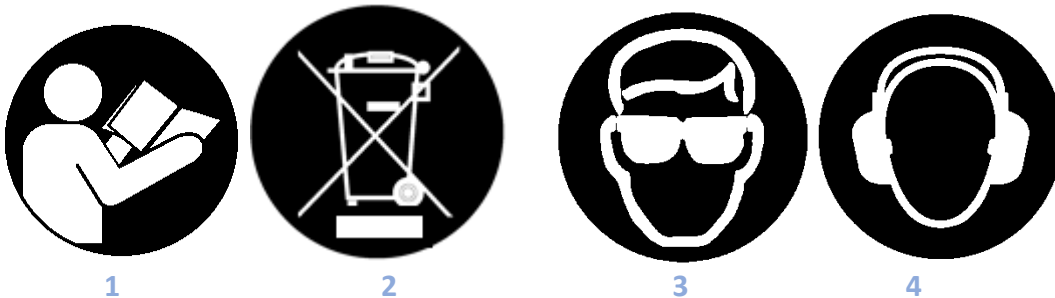
#### Service

1. **Tool service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual.** Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury.

#### WARNING!

Always use safety chain. Mounting can release.

### 3) INFORMATION PLATE SYMBOLS



1. Refer to the user manual for operational and safety issues with regard to this machine.
2. Dispose of the machine and electrical components correctly.
3. Eye protection must be worn when operating the machine.
4. Ear defenders must be worn when operating the machine.

#### 4) SPECIFICATION

Maximum hole cutting capacity in .2/.3C steel = 35mm dia. x 50mm deep

Arbor bore = 19.05 mm dia.

Motor Unit				
Voltages	110v 50-60 Hz		230v 50-60 Hz	
Normal full load	1050w	10A	1050w	5A
Electro Magnet	0.53 A			
Size	160 mm long 80 mm wide			
Holding Force at 20°C with 25mm minimum plate thickness <b>The use on any material less than 25mm thick will progressively reduce the magnetic performance. If possible, substitute material should be positioned under the magnet and work piece to equate to a suitable material thickness. If this is not possible, an alternative secure method of restraining the machine MUST be used.</b>	8000N			
Overall Dimensions				
Height	435 mm			
Width	155 mm			
Length Overall	245 mm			
Nett Weight	12 kgs			
Vibration total values (triax vector sum) in accordance with EN50144:	Vibration emission value a W= 1,95 m/s² Uncertainty(K):1.5m/s²			
Level of sound pressure in accordance with EN50144:	LpA: 84 dB(A) LwA: 97 dB(A) uncertainty(K): 3dB(A)			

Ear and eye defenders must be worn when operating this machine. Wear gloves to protect hands when operating the machine.

These tools are UK designed and manufactured with globally sourced components and conform to the requirements of EEC Document HD.400.1 and BS.2769/84

**Suitable only for a single phase 50-60Hz A.C. power supply**

### DO NOT USE ON D.C. SUPPLY

Do not use your magnetic drill on the same structure when arc welding is in progress.

D.C. current will earth back through the magnet and cause irreparable damage.

**WARNING: THIS APPLIANCE MUST BE EARTHED!**

**NB: ANY MODIFICATIONS TO THIS MACHINE WILL INVALIDATE THE GUARANTEE**

## 5) OPERATIONAL SAFETY PROCEDURES

### READ BEFORE USING THE MACHINE

- When using electrical tools, basic safety precautions should always be followed to reduce the risk of electric shock, fire, and personal injury.
- Ensure the magnet is OFF before plugging in the machine.
- Do NOT use in wet or damp conditions. Failure to do so may result in personal injury.
- Do NOT use in the presence of flammable liquids, gases or in high risk environments. Failure to do so may result in personal injury.
- BEFORE activating the machine, inspect all electrical supply cables (including extension leads), and replace if damaged. DO NOT use if there are any signs of damage.
- Only use extension cables approved for site conditions.
- BEFORE activating the machine, ALWAYS check the correct function of all operational systems, switches, magnet etc.
- BEFORE operating, the machine MUST be securely restrained to a fixed independent feature (by using a safety strap, or other means) to reduce the potential free movement, should the magnet become detached from the work piece. Failure to do so may result in personal injury.
- ALWAYS wear approved eye protectors, ear defenders and recommended PPE at ALL times when operating the machine.
- Disconnect from power source when changing cutters or working on the machine.
- Cutters and swarf are sharp, ALWAYS ensure that hands are adequately protected when changing cutters or removing swarf. Use a tool or brush where necessary to remove any swarf or the cutter from the arbor.
- Before operating the machine, ALWAYS ensure cutter-retaining screws are secured tightly.
- Regularly clear the work area and machine of swarf and dirt, paying particular attention to the underside of the magnet base.
- ALWAYS remove tie, rings, watches and any loose adornments that might entangle with the rotating machinery before operating.
- ALWAYS ensure that long hair is securely enclosed by an approved restraint before operating the machine.
- Should the cutter become stuck in the work piece, stop the motor immediately to prevent personal injury. Disconnect from power source and turn arbor to and from. DO NOT ATTEMPT TO FREE THE CUTTER BY SWITCHING THE MOTOR ON AND OFF. Wear safety gloves to remove the cutter from the arbor.
- If the machine is accidentally dropped, ALWAYS thoroughly examine the machine for signs of damage and check that it functions correctly BEFORE resuming drilling.
- Regularly inspect the machine and check for any damaged or loose parts.
- ALWAYS ensure when using the machine in an inverted position that only the minimum amount of coolant is used, and that care is taken to ensure that coolant does not enter the motor unit.
- Cutting tools may shatter, ALWAYS position the guard over the cutter before activating the machine. Failure to do so may result in personal injury.
- On completion of the cut, a slug will be ejected. DO NOT operate the machine as the ejected slug may cause injury.
- When not in use ALWAYS store the machine in a safe and secure location.
- ALWAYS ensure that approved ROTABROACH agents conduct repairs.

## 6) OPERATING INSTRUCTIONS

- Keep the inside of the cutter clear of swarf. It restricts the operating depth of the cutter.
- Ensure that the coolant bottle contains sufficient cutting oil to complete the required operating duration. Refill as required.
- Occasionally depress the pilot to ensure cutting fluid is being correctly metered.
- To start the machine, follow the control panel operation instructions.
- ALWAYS switch off the motor by depressing the MOTOR stop button. DO NOT switch off the motor by depressing the MAGNET switch.
- Apply light pressure when commencing the cut of a hole until the cutter is introduced into the work surface. Pressure can then be increased sufficiently to load the motor. Excessive pressure is undesirable, it does not increase the speed of penetration and will cause the safety overload protection device to stop the motor, (the motor can be restarted by operating the motor start button), and may cause excessive heat which may result in inconsistent slug ejection
- Always ensure that the slug has been ejected from the previous hole before commencing to cut the next.
- If the slug sticks in the cutter, move the machine to a flat surface, switch on the magnet and gently bring the cutter down to make contact with the surface. This will usually straighten a cocked slug and allow it to eject normally.
- Apply a small amount of light oil lubricant regularly to the slide and arbor support bearing.
- Cutter breakage is usually caused by insecure anchorage, a loosely fitting slide or a worn bearing in the arbor support. (Refer to routine maintenance instructions).
- Only use approved cutting fluid.

## 7) EXTENSION CABLE SELECTION

The machines are factory fitted with a 3 metre length of cable having three conductors 2.08mm<sup>2</sup> LIVE, NEUTRAL and EARTH. If it becomes necessary to fit an extension cable from the power source, care must be taken in using a cable of adequate capacity. Failure to do so will result in a loss of traction by the magnet and a reduction of power from the motor. If the replacement of the supply cord is necessary, this has to be done by the manufacturer or an approved agent in order to avoid a safety hazard.

Assuming a normal AC supply of the correct voltage, it is recommended that the following extension lengths shall not be exceeded:

**For 110v supply: 3.5 metres of 3 core x 1.5mm<sup>2</sup>**

**For 230v supply: 26 metres of 3 core x 1.5mm<sup>2</sup>**

**ALWAYS DISCONNECT THE MACHINE FROM THE POWER SOURCE BEFORE CHANGING CUTTERS.**

## 8) MOUNTING OF CUTTERS

- The machine has been made to accept cutters having 19.05mm dia. Weldon shanks.

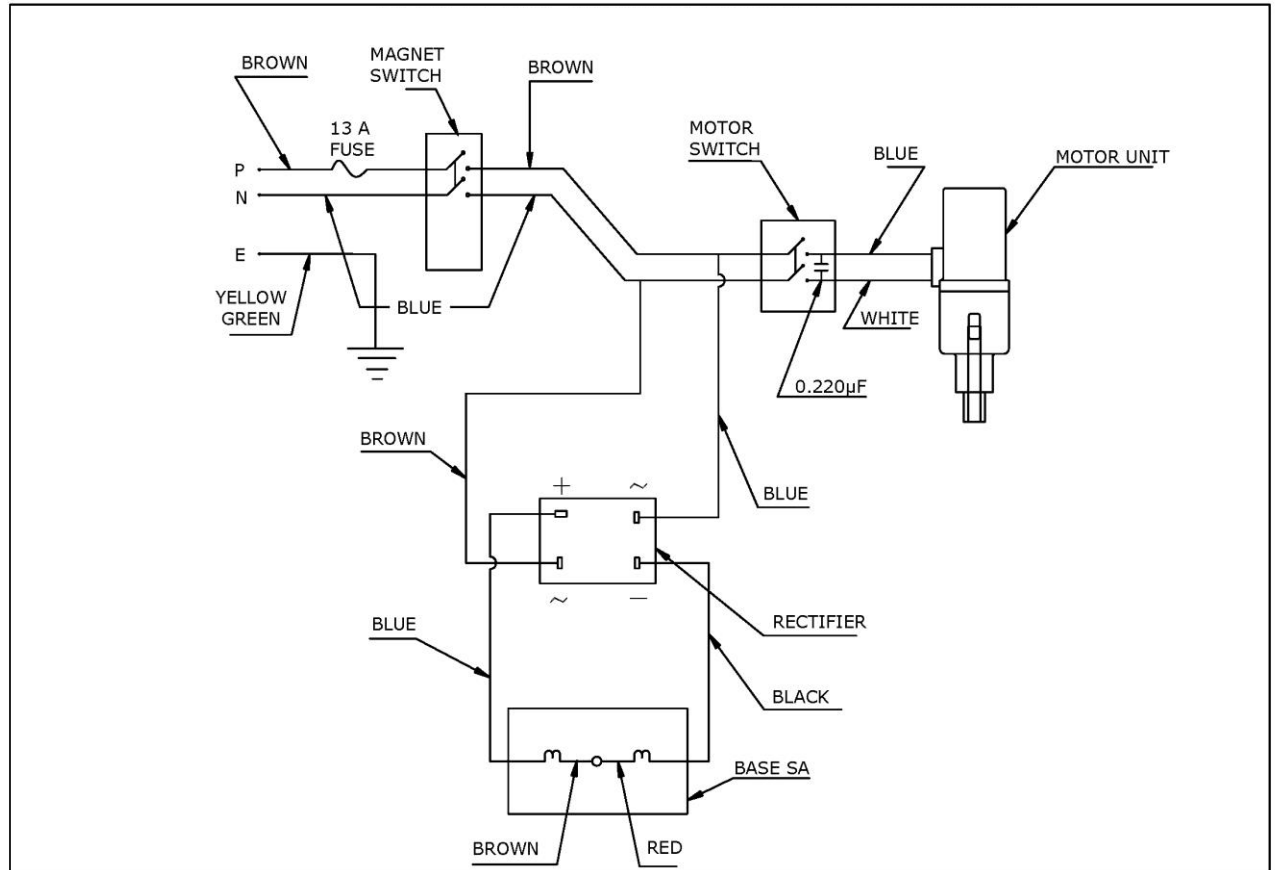
The following procedure is to be used when mounting cutters:

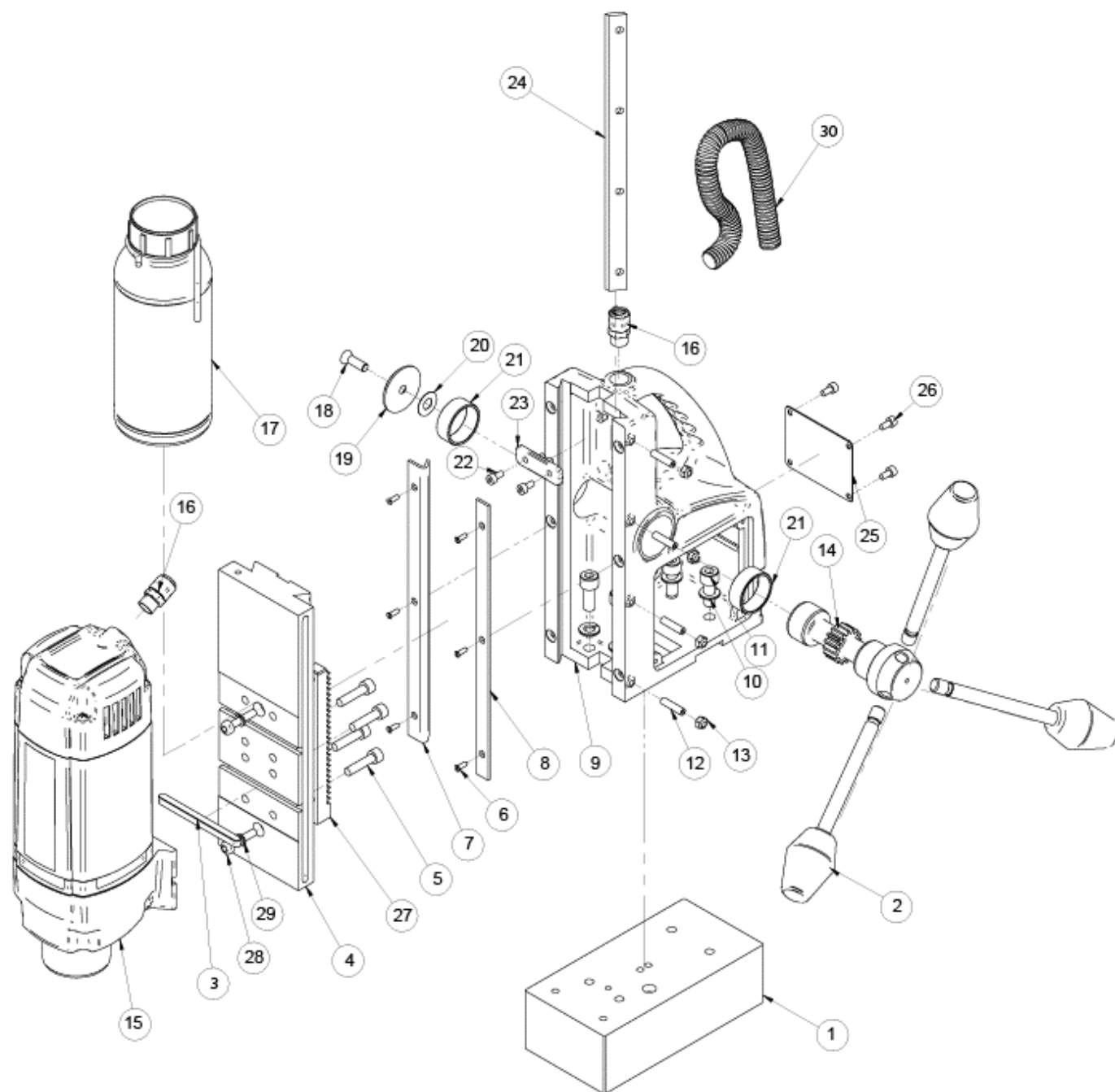
- Lay the machine on its side with feed handles uppermost, ensuring arbor is wound down to its lowest point to enable access to socket screws.
- Take appropriate pilot and place through the hole in cutter shank. Insert shank of cutter into bore of arbor, ensuring alignment of two drive flats with socket screws.
- Tighten both screws using hexagon key.

## 9) REMEDIES FOR HOLE MAKING PROBLEMS

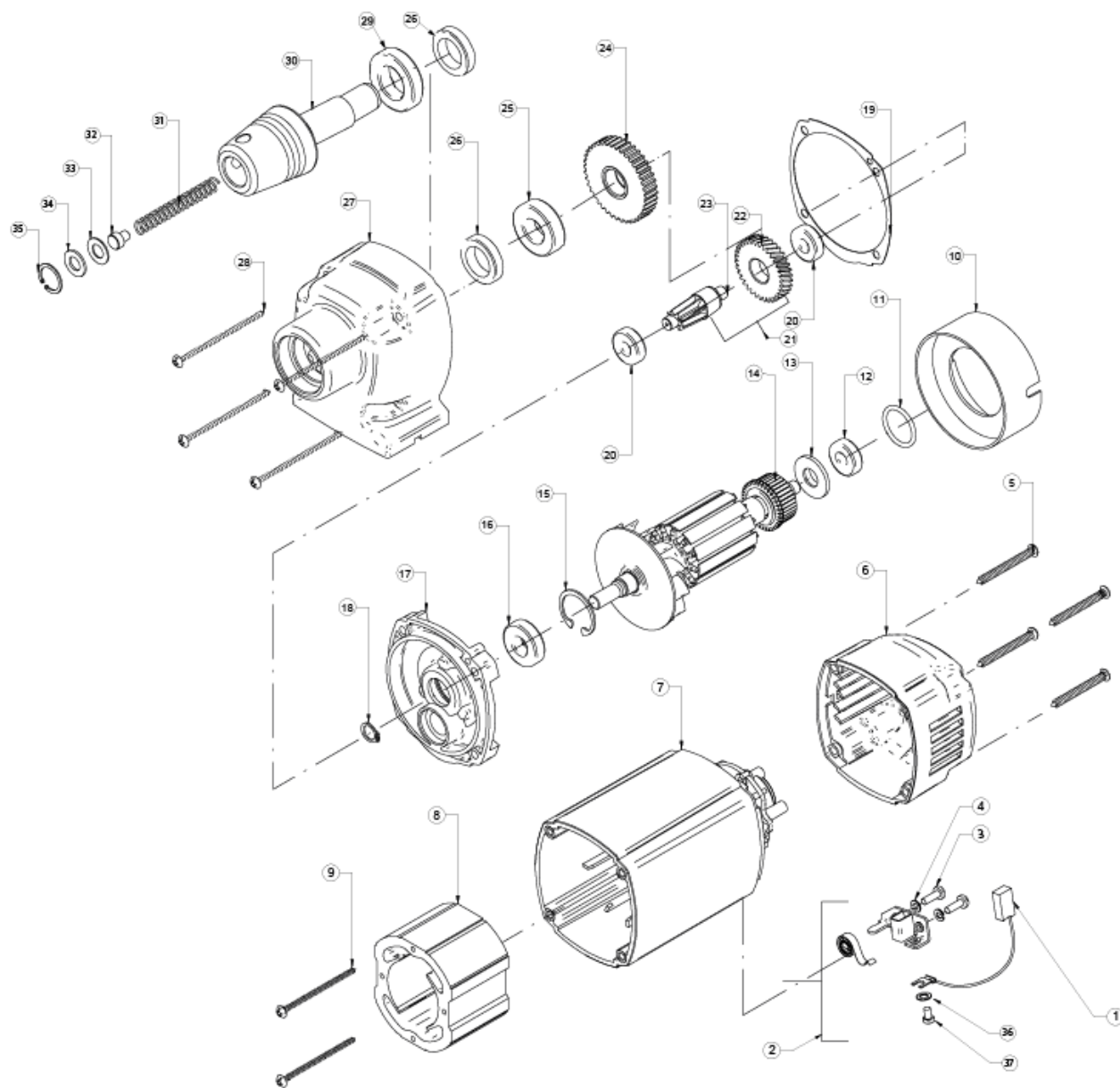
<i>Problem</i>	<i>Cause</i>	<i>Remedy</i>
1) Magnetic base won't hold effectively	Material being cut may be too thin for efficient holding.  Swarf or dirt under magnet.  Irregularity on magnet contact or work-piece.  Insufficient current going to magnet during drilling cycles.	Attach an additional piece of metal under the magnet, or mechanically clamp magnetic base to workpiece.  Clean magnet.  Use extreme care; file any imperfections flush to surface.  Confirm power supply and output from control unit, check supply cable.
2) Cutter skips out of centre-punch mark at initiation of cut	Magnetic base is not holding effectively.  Worn arbor bushing and/or ejector collar.  Too much feed pressure at start of cut.  Cutter is dull, worn, chipped or incorrectly sharpened.  Poor centre-punch mark; weak pilot spring; pilot not centred in centre-punch mark.  Worn or bent pilot, worn pilot hole.	See causes and remedies above.  New arbor bushing is needed.  Light pressure only is needed until a groove is cut. The groove then serves as a stabilizer.  Replace or re-sharpen. Sharpening service is available.  Improve centre-punch and/or replace worn parts  Replace part or parts
3) Excessive drilling pressure required	Incorrectly re-sharpened, worn or chipped cutter.  Coming down on swarf lying on surface of work-piece.  Swarf accumulated (packed) inside cutter.	Re-sharpen or replace.  Take care not to start a cut on swarf.  Clear cutter.
4) Excessive cutter breakage	Steel swarf or dirt under cutter.  Incorrectly re-sharpened or worn cutter.  Cutter skipping.  Cutter not attached tightly to arbor.  Insufficient use of cutting oil or unsuitable type of oil.  Incorrect speed	Remove cutter, clean part thoroughly and replace.  Always have a new cutter on hand to refer to for correct tooth geometry, together with instruction sheet.  See causes and remedies (2).  Retighten.  Inject oil of light viscosity into the coolant-inducing ring and check that oil is being metered into cutter when pilot is depressed. If not, check pilot groove and arbor internally for dirt or apply oil externally. (Even a small amount of oil is very effective).  Ensure correct speed is use for the cutter.
5) Excessive cutter wear	See cause and remedy above  Incorrectly re-sharpened cutter.  Insufficient or spasmodic cutting pressure.	Refer to instructions and a new cutter for proper tooth geometry.  Use sufficient steady pressure to slow the drill down. This will result in optimum cutting speed and chip load.



**10) WIRING DIAGRAM**

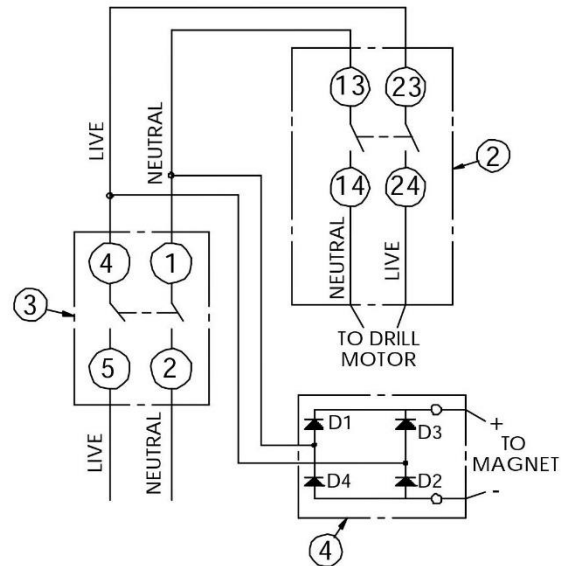
**11) EXPLODED VIEW OF MACHINE**

No.	Part Name	Part No.	Qty.
1	MAGNET BASE ASSY.	M0031	1
2	HANDLE LEVER ASSY.	EB001	3
3	KEY	EB002	1
4	GUIDE PLATE	EB003	1
5	SCREW M6 X 25	SC625CAP	4
6	COUNTERSUNK SCREWS M3X8	EB004	6
7	BRASS STRIP LEFT	EB005	1
8	BRASS STRIP RIGHT	EB006	1
9	MAIN BODY	EB021	1
10	SPRING WASHER M8	EB008	4
11	SCREW M8 X 20	SC820CAP	4
12	GRUB SCREW M5 X 20	SC520GRUB	4
13	LOCK NUT M5	10085B	4
14	SPINDLE	EB009	1
15	BHM35 DRILL UNIT - 120V	EIB31	1
16	GLAND PG9	40025	2
17	COOLANT BOTTLE ASSY.	EB010	1
18	SPINDLE LOCK COUNTERSUNK SCREW M6 X16	EB011	1
19	SPINDLE CAP	EB012	1
20	LOCK FOIL	EB013	1
21	SPINDLE BUSH	EB014	2
23	CORD CLAMP	EB015	1
24	GIB	EB016	1
25	SPEC PLATE	EB017	1
22,26	SCREW M4X10	SC410CAP	6
27	RACK	EB018	1
28	SCREW M5 X 25	SC525CAP	2
29	INT. TOOTH LOCK WASHER M5	EB019	2
30	CABLE CONDUIT	M0443	1

**12) MOTOR BREAKDOWN**

NO.	PART NAME	PART NO.	QTY.
1	CARBON BRUSH ASSY. 6.3X10X18	EBD002	2
2	BRUSH HOLDER ASSY.	EBD001	2
3	SCREW M4 X12	EBD003	4
4	SPRING WASHER M4	EBD004	4
5	PHILIPS HEAD SELF-TAP SCREW 4.8X45	EBD005	4
6	BACK COVER	EBD006	1
7	FIELD COIL CASING	EBD007	1
8	FIELD COIL ASSY 110V	EBD008-A	1
	FIELD COIL ASSY 230V	EBD008-B	1
9	PHILIPS HEAD SELF-TAP SCREW 3.9X60	EBD009	2
10	BAFFE	EBD010	1
11	O RING	EBD011	1
13	DUST WASHER	EBD012	1
12,20	BALL BEARING (8-22-7) 608 2Z	UDC022	3
14	ARMATURE ASSY 110V	EBD013-A	1
	ARMATURE ASSY 230V	EBD013-B	1
15	CIRCLIP 28MM X 1.2 B TYPE	EBD014	1
16	BALL BEARING (12-28-8)6001 2Z	UDC023	1
17	GEAR CASE COVER	EBD015	1
18	CIRCLIP 10MM X 1 A TYPE	EBD016	1
19	GASKET	EBD017	1
21	INTER SHAFT ASSY.	EBD018	1
24	SPINDLE GEAR	EBD019	1
25	BALL BEARING (17-35-10) 6003 2RS	UDC004	1
26	OIL SEAL 20-30-7 B TYPE	EBD020	2
27	GEAR CASE	EBD021	1
28	PHILIPS HEAD SELF-TAP SCREW 4.8 X 60	EBD022	4
29	BALL BEARING 6904 2RS	EBD025	1
30	ARBOR BODY.	EBD023	1
31	ARBOR SPRING	EBD026	1
32	ARBOR EJECTION PLUG	EBD027	1
33	ARBOR WASHER	EBD028	1
34	ARBOR RUBBER WASHER	EBD029	1
35	ARBOR CIRCLIP	EBD030	1
36	CARBON BRUSH WASHER	EBD031	2
37	CARBON BRUSH FIXING SCREW	EBD032	2

### 13) CONTROL PANEL AND PARTS LIST



No.	Part Name	Part Number	Quantity
1	CONTROL FACIA PLATE 110V	RD33269	1
	CONTROL FACIA PLATE 230V	RD33270	1
2	DRILL STOP/START SWITCH 110V	NCP001	1
	DRILL STOP/START SWITCH 110V	NCP002	1
3	MAGNET SWITCH	NCP006	1
4	25A BRIDGE RECTIFIER	M0401	1

## 14) MAINTENANCE

In order to 'get the best life' out of your Unibor machine always keep it in good working order. A number of items must always be checked on Unibor machines.

Always before starting any job make sure the machine is in good working order and that there are no damaged or loose parts. Any loose parts must be tightened.

**Before proceeding with any maintenance work be certain that the power supply is disconnected.**

Description	Every operation	1 week	1 Month
Visual check of machine for damage	X		
Operation of machine	X		
Check brush wear		X	
Check magnetic base	X		
Check grease			X
Check armature			X

### Visually check the machine for damage.

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

### Check operation of the machine.

The machines operation must be checked to ensure that all components are working correctly.

**Machine 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 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.

**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 not to hold as efficiently and may cause injury to the operator.

### Check machines 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 your machine.

### Check Armature of the machine.

This should be checked at least once a month to check that there are no 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, but this is normal (this is the part that comes into contact with the brushes) however, if there are any signs of abnormal damage the part should be replaced.

## 15) TROUBLE SHOOTING

Magnet and motor do not function	<ul style="list-style-type: none"> <li>- The magnet switch is not connected to the power supply</li> <li>- Damaged or defective wiring</li> <li>- Defective magnet switch</li> <li>- Defective control unit</li> <li>- Defective power supply</li> </ul>
Magnet does function, the motor does not	<ul style="list-style-type: none"> <li>- Damaged or defective wiring</li> <li>- Carbon brushes are stuck or worn out</li> <li>- Defective magnet switch</li> <li>- Defective on / off switch</li> <li>- Defective control unit</li> <li>- Defective armature and/or field</li> </ul>
Magnet does not function, the motor does	<ul style="list-style-type: none"> <li>- Defective magnet</li> <li>- Defective control unit</li> </ul>
Hole cutters break quickly, holes are bigger than the hole cutter	<ul style="list-style-type: none"> <li>- Play in the guide</li> <li>- Bent spindle</li> <li>- Shaft extending from the motor is bent</li> <li>- Pilot bent</li> </ul>
Motor running roughly and/or seizing up	<ul style="list-style-type: none"> <li>- Bent spindle</li> <li>- Shaft extending from the motor is bent</li> <li>- Triangular guide not mounted straight</li> </ul>
Motor making a rattling sound	<ul style="list-style-type: none"> <li>- Gear ring (bottom of the armature) worn out</li> <li>- Gear(s) worn out</li> <li>- No grease in gear box</li> </ul>
Motor humming, big sparks and motor has no force	<ul style="list-style-type: none"> <li>- Armature damaged</li> <li>- Field burned</li> <li>- Carbon brushes worn out</li> </ul>
Motor does not start or fails.	<ul style="list-style-type: none"> <li>- Damaged or defective wiring</li> <li>- Damage to armature or field coil</li> <li>- Damaged or defective brushes</li> </ul>
Insufficient magnetic force	<ul style="list-style-type: none"> <li>- Damaged or defective wiring</li> <li>- Bottom of magnet not clean and dry</li> <li>- Bottom of magnet not flat</li> <li>- Work piece is not bare metal</li> <li>- Work piece is not flat</li> <li>- Work piece is too thin less than 10mm</li> <li>- Defective control unit</li> <li>- Defective magnet</li> </ul>
Frame under voltage	<ul style="list-style-type: none"> <li>- Damaged / defective wiring</li> <li>- Defective magnet</li> <li>- Motor seriously dirty</li> </ul>
Fuse blows when magnet switch is turned on	<ul style="list-style-type: none"> <li>- Damaged or defective wiring</li> <li>- Wrong value fuse</li> <li>- Defective magnet switch</li> <li>- Defective control unit</li> <li>- Defective magnet</li> </ul>
Fuse blows when motor is started up	<ul style="list-style-type: none"> <li>- Damaged or defective wiring</li> <li>- Motor running roughly</li> <li>- Defective armature and / or field</li> <li>- Carbon brushes worn out</li> <li>- Defective control unit</li> </ul>
Rotation system free stroke too long	<ul style="list-style-type: none"> <li>- Loose or defective gear-rack</li> <li>- Defective rotation system</li> </ul>



## 16) CUTTER SELECTION

Material	Material Hardness	Cutter
Mild and free cutting steels	<700N/mm <sup>2</sup>	M2
Mild and free cutting steels	<850N/mm <sup>2</sup>	M42
Steel angle and joists	<700N/mm <sup>2</sup>	M2
Steel angle and joists	<850N/mm <sup>2</sup>	M42
Plate and sheet steel	<700N/mm <sup>2</sup>	M2
Plate and sheet steel	<850N/mm <sup>2</sup>	M42
Aluminium	<750N/mm <sup>2</sup>	M2
Aluminium	<850N/mm <sup>2</sup>	M42
Brass	<700N/mm <sup>2</sup>	M2
Brass	<850N/mm <sup>2</sup>	M42
Cast iron	<700N/mm <sup>2</sup>	M2
Cast iron	<850N/mm <sup>2</sup>	M42
Stainless steel	<700N/mm <sup>2</sup>	M2
Stainless steel	<850N/mm <sup>2</sup>	M42
Stainless steel	>850N/mm <sup>2</sup>	TCT
Rail track	>850N/mm <sup>2</sup>	M42
Tool steel	>850N/mm <sup>2</sup>	TCT
Die Steel	>850N/mm <sup>2</sup>	TCT

## 17) WARRANTY STATEMENT

Rotabroach warrants its machines to be free from faulty parts, under normal usage of machines, for a period of 12 months from initial date of purchase. All other parts (excluding cutters) are under warranty for 90 days, provided that the warranty registration card (or online registration) has been completed and returned to Rotabroach or its designated distributor within a period of (30) days from the purchase date. Failure to do so will void the warranty. If the stated is adhered to, Rotabroach will repair or replace (at its option) without charge any faulty items returned.

**This Warranty does not cover:**

1. Components that are subject to natural wear and tear caused by the use is not in accordance with the operator's instructions
2. Defects in the tool caused by non-compliance with the operating instructions, improper use, abnormal environment conditions, inappropriate operating conditions overload or insufficient servicing or maintenance.
3. Defects caused by using accessories, components or spare parts other than original Rotabroach parts.
4. Tools to which changes or additions have been made.
5. Electrical components are subject to manufacturer's warranty.

The warranty claim must be logged within the warranty period. This requires the submission or sending of the complete tool in question with the original sales receipt which must indicate the purchase date of the product. A complaint form must also be submitted prior to the return.

Failure to complete this form will result in the delay of your claim.

All goods returned defective must be returned pre-paid to Rotabroach, in no event shall Rotabroach be liable for subsequent direct, or indirect loss or damage.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, (EXPRESSED OR IMPLIED) INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PURPOSE. ROTABROACH RESERVE THE RIGHT TO MAKE IMPROVEMENTS AND MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE

**Known and Trusted Worldwide for Quality, Performance and Reliability**