

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

## **Magnetic drilling machine**



## **Model Number RD130C**

**This machine (Serial Number ..... ) is CE approved.**



Ex II 2GD c T6 IIC T85°C

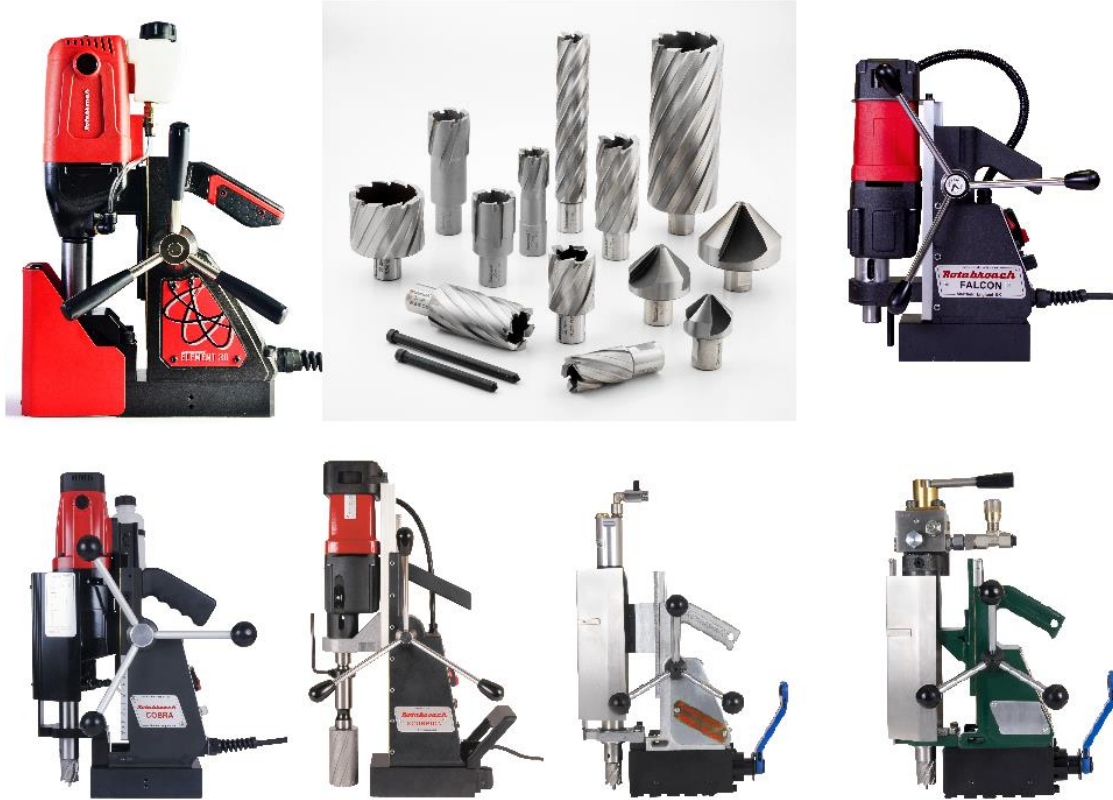
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**Thank you for purchasing our Eagle magnetic drill.  
We would really like your feedback on the machine.**

***Other Products by Rotabroach™:***



**Thank you for your purchase of our product.**

For more information please visit our website at [www.rotabroach.co.uk](http://www.rotabroach.co.uk)

Or contact our sales department on +44 (0) 114 2212 510


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<b>P/N</b>	<b>List of Contents with Magnetic Drill Unit</b>	<b>Check list (Y/N)</b>
RD4329	Safety Strip	
RD4088	Hexagon Spanner 4mm	
RD4152	Hexagon Spanner 3mm	
RD4367	Pipe Fixing Strap	



# OSL Cutting Technologies



## TEST VERIFICATION REPORT OF CONFORMITY

On the basis of the referenced test reports, the below product has been found to comply with the relevant harmonised standard(s) to the directive(s) listed on this verification at the time the tests were carried out.

Name and address of manufacturer:	Rotabroach Ltd Burgess Road, Sheffield S9 3WD, United Kingdom
Product tested:	RD130C Eagle Magnetic Drilling Unit
Application of product:	Hole drilling in metal
Relevant standards/directives	EN 12717:2001+A1:2009 Machinery Directive 2006/42/EC Directive 94/9/EC
Classification	Ex II 2GD c T6 IIC T85°C
Name and Address of Responsible person.	Mr Mathew Grey. Burgess Road, Sheffield S9 3WD, United Kingdom

Signed

Date

19/03/17

## 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.

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

## 2) GENERAL SAFETY RULES

Read all these instructions before attempting to operate the machine.

Remove from the pneumatic supply before carrying out any adjustment, servicing or maintenance.

Follow instructions for lubricating and changing accessories.

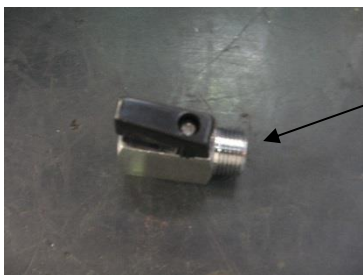
All repairs to be carried out by an authorized Rotabroach service facility.

## 3) OPERATIONAL SAFETY PROCEDURES

### OPERATING INSTRUCTIONS

#### READ BEFORE USING THE MACHINE

1. Before connecting the pneumatic supply, ensure the motor switch is in the off position.
2. Locate the machine in its required position in relation to the work piece. Activate the magnet by means of the ratchet handle at the rear. Ensure the magnet rod is fully screwed home.
3. Apply the cutting fluid to the reservoir, through the inducement slots in the arbor. It is then metered by the pilot pin to the cutting edge. (Alternatively cutting oil can be applied directly to the cutting edge).
4. Start the motor by turning the rotary valve to the **ON** position (see below).



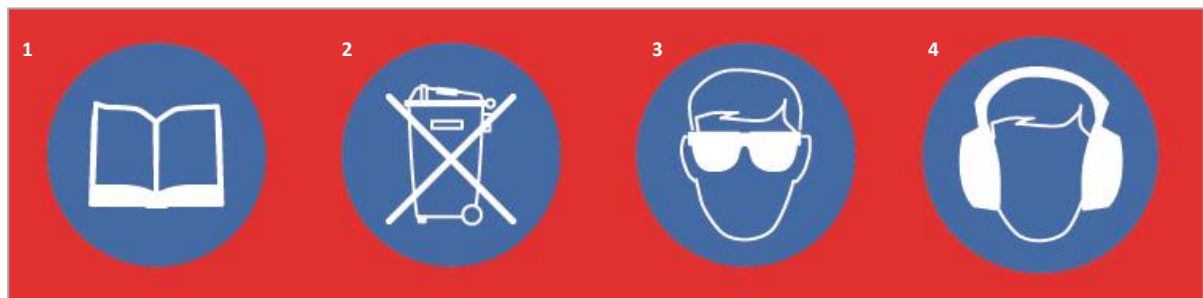
On  
Position

5. BEFORE operating, the machine MUST be securely restrained to a fixed independent feature (by using safety strap RD4329, 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.
6. Keep other persons away. DO NOT let untrained persons, especially children, into the work area.
7. Avoid unintentional starting. Ensure the pneumatic supply is turned off when the machine is not in operation.
8. Consider the toxicity of dust produced from the cutter and material being cut. Use approved extraction and or Personal Protective Equipment (PPE).
9. Secure work where possible, use clamps or a vice to hold the work. It is safer than using your hand.

10. Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
11. Never operate the machine if parts are missing or damaged.
12. Never direct jets of water or flammable liquids over the drill.
13. Operator must be physically able to handle the weight of the machine.
14. Operator should be trained in the use of the machine.
15. If the machine is accidentally dropped, ALWAYS thoroughly examine the machine for signs of damage and check that it functions correctly BEFORE resuming drilling.
16. ALWAYS ensure when using the machine in an inverted position that only the minimum amount of coolant is used.
17. Keep work area clear - cluttered areas and benches invite injuries.
18. Consider work area environment;
  - Keep work area well lit (500 Lux recommended).
  - Do not use tools in the presence of flammable liquid or gases
  - Ensure there is adequate space to gain access to the pneumatic supply and the on/off valve.
  - Regularly clear the work area and machine of swarf and dirt, paying particular attention to the underside of the magnet base.
19. Do not force the machine. It will do the job better and safer at the rate for which it was intended.
20. Use the right tool;
  - Do not force small tools to do the job of a heavy duty tool.
21. When using the drill, always ensure a safe operating distance from any swarf and do not reach into the cutting area, or near the cutter, when the machine is running.
22. Do not overreach! Keep proper footing and balance at all times.
23. Cutting tools may shatter, ALWAYS position the guard over the cutter before activating the machine. Failure to do so may result in personal injury.
24. Apply light pressure when commencing to cut 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.
25. Use Personal Protective Equipment (PPE) when using this machine;
  - Use safety glasses to prevent debris from damaging eyes.
  - Use ear defenders or ear plugs for hearing protection.
  - Use face or dust masks if cutting operations create dust.
  - Use protective gloves to prevent swarf or debris cutting the skin.
26. Dress properly;
  - Do not wear loose clothing or jewellery; they can be caught in moving parts.
  - Non-skid footwear is recommended when working outdoors.
  - Wear a protective hair covering to contain long hair. This will reduce the risk of entanglement.
27. Maintain tools with care;
  - Keep cutting tools sharp and clean for better and safer performance.
  - Regularly check the machine for any wear or damage.
  - Ensure the machine is clean and free from debris prior to use.
  - Remove from the pneumatic supply prior to any maintenance.

- Follow instructions for lubricating and changing accessories.
28. On completion of the cut, a slug will be ejected. DO NOT operate the machine if the slug has not ejected as it may cause injury.
  29. 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.
  30. Store idle tools when not in use. All tools should be stored in a dry locked-up place, out of reach of children
  31. WARNING! The vibration emissions during actual use can differ from the declared total value depending on the ways in which the tool is being used.
  32. Stay alert! Watch what you are doing, use common sense and do not operate the tool when you are tired. DO NOT operate the machine when under the influence of alcohol or ANY illegal substances.
  33. Warning! The use of any accessory or attachment, other than ones recommended in this instruction manual, may present a risk of personal injury.
  34. Insecure anchorage, a loosely fitting slide or a worn bearing in the arbor support usually causes cutter breakage.

#### 4) 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.

## 5) SPECIFICATION

Maximum hole cutting capacity in .2/.3C steel = 52mm dia. x 50mm deep

Arbor bore = 19.05mm (3/4" dia.

<b>Motor Unit</b> (Nominal values)	Atlas Copco	LZB 42 A0030-11	300 RPM	6-7 Bar Hose 10mm (3/8)
Magnet	Manually Operated	Tractive Force 25mm plate	700 kgs	
Overall Dimensions				Height (maximum extended)
Overall Dimensions	Width (including Hand Wheel)			175 mm
	Length Overall (including Guard)			370 mm
	Height (Max Extended)			540 mm
	Magnet Footprint			165mm x 80mm
Nett Weight				20.6 kg
Estimate of vibration exposure. .	0.11 m/s <sup>2</sup> A(8)			
Estimate of vibration for usage of 1, 2 and 4 hours	0.04 m/s <sup>2</sup> , 0.06 m/s <sup>2</sup> 0.08 m/s <sup>2</sup>			
Average noise level during cutting at operator's ear position. In accordance with ISO 3746	L <sub>PA</sub> Max. 75 dB(A) L <sub>WA</sub> Max. 83dB(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

**Note: This machine contains Aluminium and should not be used in any environment where the use of Aluminium is prohibited, or may constitute a hazard.**

An in-line filter and lubrication system must be used in conjunction with this drilling unit, at a distance no greater than 5m from the unit. To maximise performance and achieve the optimum service life, lubrication should be applied at a rate of 50 cubic mm for each cubic metre of air consumed.

Depending on the type of supply fittings used, it may be necessary to vent the supply to be able to disconnect the drill from the supply unit.

The motor should be purged with light lubricating oil after use.

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



## 6) MOUNTING OF CUTTERS

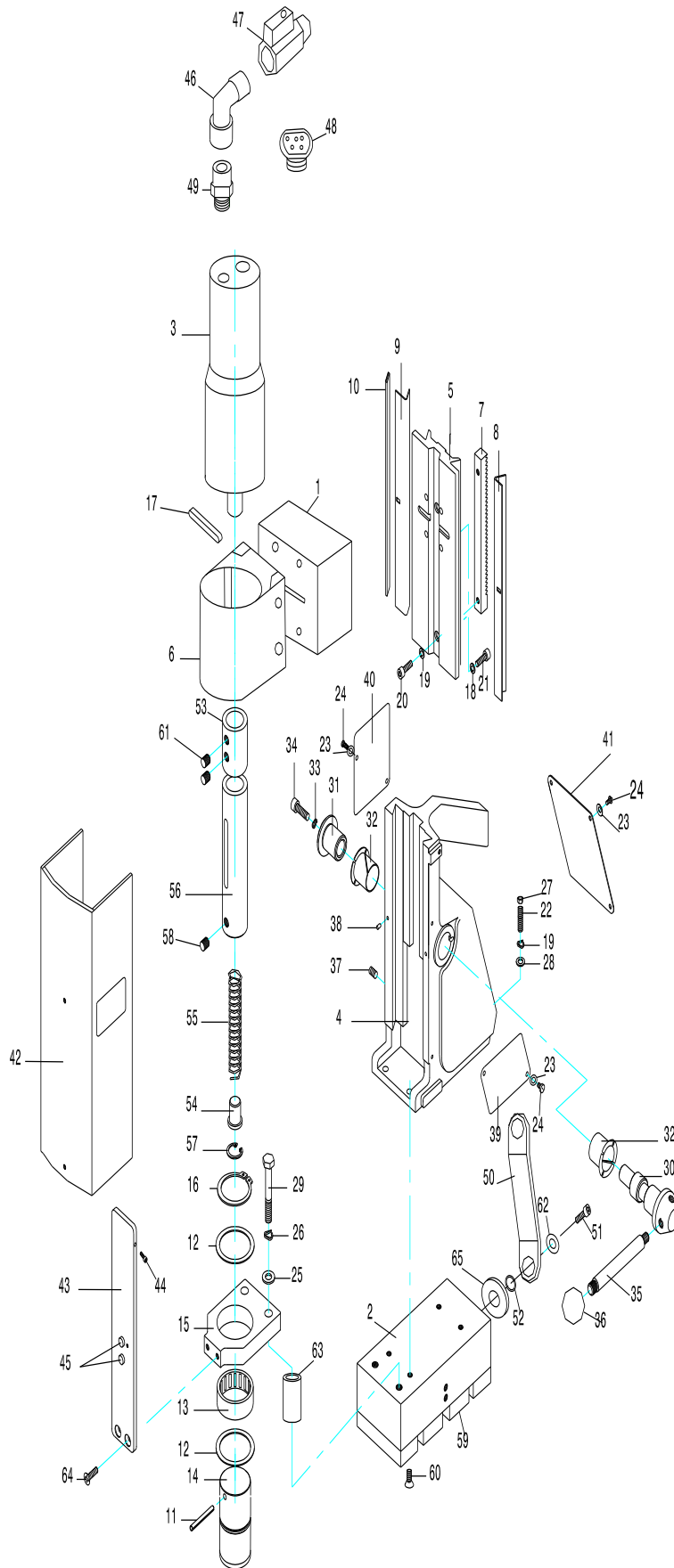
- The machine has been made to accept cutters having 19.05mm (3/4”) dia. Weldon shanks. The following procedure is to be used when mounting cutters:
  - Lay the machine on its side with feed handles uppermost, ensuring arbor is wound down to its lowest point to enable access to socket screws RD4066.
  - Take appropriate pilot and place through the hole in the 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.

## 7) 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.	Attach an additional piece of metal under work-piece where magnet will be located, or mechanically clamp magnetic base to work-piece.
	Swarf or dirt under magnet.	Clean magnet.
	Irregularity on magnet contact or work-piece.	Use extreme care; file any imperfections flush to surface.
2) Cutter skips out of centre-punch mark at initiation of cut	Magnetic base is not holding effectively.	See causes and remedies above.
	Worn arbor bushing and/or ejector collar.	Replace! Only a few thousandths wear permissible. New arbor bushing is needed. Light pressure only is needed until a groove is cut. The groove then serves as a stabiliser.
	Too much feed pressure at start of cut.	Replace or re-sharpen. Sharpening service is available.
	Cutter is dull, worn, chipped or incorrectly sharpened.	Improve centre-punch and/or replace worn parts
	Poor centre-punch mark; weak pilot spring; pilot not centred in centre-punch mark.	Replace part or parts
	Worn or bent pilot, worn pilot hole.	Replace part or parts
	Loose bolts on motor bushing support bracket, main casting or loose gib adjusting set screws.	Adjust where necessary
3) Excessive drilling pressure required	Incorrectly re-sharpened, worn or chipped cutter.	Re-sharpen or replace.
	Coming down on swarf lying on surface of work-piece.	Take care not to start a cut on swarf.
	Gibs out of adjustment or lack of lubrication.	Adjust setscrews, and lubricate.
	Swarf accumulated (packed) inside cutter.	Clear cutter.
4) Cutter breakage	Steel swarf or dirt under cutter.	Remove cutter, clean part thoroughly and replace.
	Incorrectly re-sharpened or worn cutter.	Always have a new cutter on hand to refer to for correct tooth geometry, together with instruction sheet.
	Cutter skipping.	See causes and remedies (2).
	Gib Strip need adjustment.	Tighten Gib Strip.
	Cutter not attached tightly to arbor.	Retighten.

	Insufficient use of cutting oil or unsuitable type of oil.	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).
5) Excessive cutter wear	See cause and remedy above	
	Incorrectly re-sharpened cutter.	Do not use. Refer to instructions and a new cutter for proper tooth geometry.
	Exercise, insufficient or spasmodic cutting pressure.	Use sufficient steady pressure to slow the drill down. This will result in optimum cutting speed and chip load.

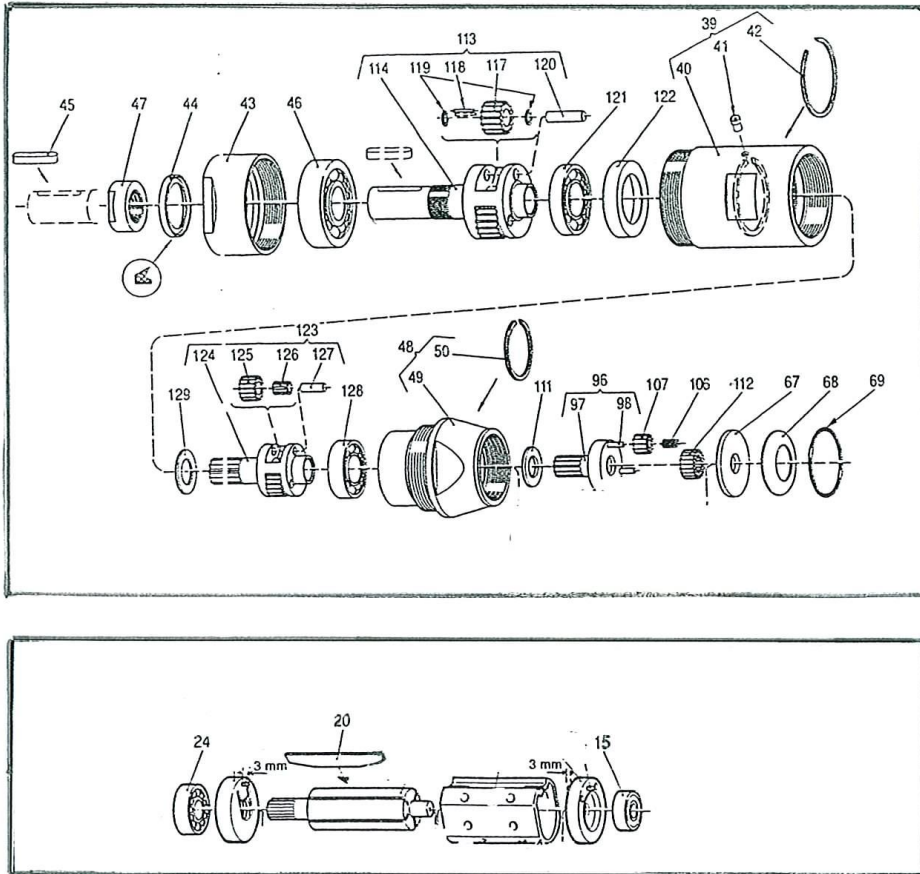
**8) EXPLODED VIEW OF MACHINE**




**9) PARTS LIST**

<i>Item</i>	<i>Component</i>	<i>Part No</i>	<i>QTY</i>	<i>Item</i>	<i>Component</i>	<i>Part No</i>	<i>QTY</i>
1	Motor Packing	RD3388	1	33	M6 Spring Washer	RD4207	1
2	Magnet	RD43100	1	34	M6 Socket Head Screw	RD4098	1
3	Motor	RD43105	1	35	Capstan Arm	RD33089	3
4	Housing	RD3380	1	36	Plastic Knob	RD43091	3
5	Slide	RD3381	1	37	M6 Socket Screw	RD4312	4
6	Motor Bracket	RD3357	1	38	Tension Pin	RD4102	2
7	Rack	RD3350	1	39	Name Plate	RD33142	1
8	Fixed Gib Strip	RD33103	1	40	Information Plate	RD4362	1
9	Adjustable Gib Strip	RD33104	1	41	Identity Plate	RD33135	1
10	Gib Support Strip	RD33105	1	42	Guard	RD3397	1
11	Spiral Pin	RA353	1	43	Guard Bracket	RD33000	1
12	Thrust Washer	RA401	2	44	M3 Socket Head Screw	RD4103	2
13	Nylon Bearing	RD350	1	45	Spring Plunger	RD4346	2
14	Arbor Sleeve	RD3396	1	46	3/8" BSP M & F Elbow	RD43020	1
15	Bearing Bracket	RD3389	1	47	3/8" BSP Ball Valve	RD43021	1
16	External Circlip	RD4320	1	48	Silencer	RD4355	1
17	Key	RD3355	2	49	Hex Adaptor	RD4389	1
18	M5 Shake proof Washer	RD4092	2	50	Ratchet Handle *	RD43104	1
19	M6 Shake proof Washer	RD4096	8	51	M6 Socket Head Cap Screw	RD4156	1
20	M5 Socket Head Screw	RD4325	2	52	M6 Washer	RD33030	1
21	M6 x 55 Socket Head Screw	RD4394	4	53	Adaptor	RD33025	1
22	M6 Stud	RD4340	4	54	Button	RA354	1
23	M4 Shake proof Washer	RD4069	8	55	Spring	RA355	1
24	M4 Pan head Screw	RD4077	8	56	Arbor	RD33021	1
25	M8 Washer	RD4078	2	57	Circlip	RD4056	1
26	M8 Shake proof Washer	RD4079	2	58	M8 Socket Screw	RD4066	2
27	M6 Nut	RD4087	4	59	Pole Piece Set	RD43047	4
28	M6 Washer	RD4095	4	60	M5 x 15 Countersink Socket	RD4347	10
29	M8 Socket Head Set Screw	RD4402	2	61	M8 Dog point	RD43135	2
30	Capstan Pinion Shaft	RD33088	1	62	Washer	RD43136	1
31	Pinion Shaft Sleeve	RD33090	1	63	Bearing Bracket Spacer	RD3248	1
32	Nyliner Bearing	RD4313	2	64	M5 countersink	RD4347	2
				65	Magnet Washer	RD43360	1

**10) ATLAS COPCO MOTOR**



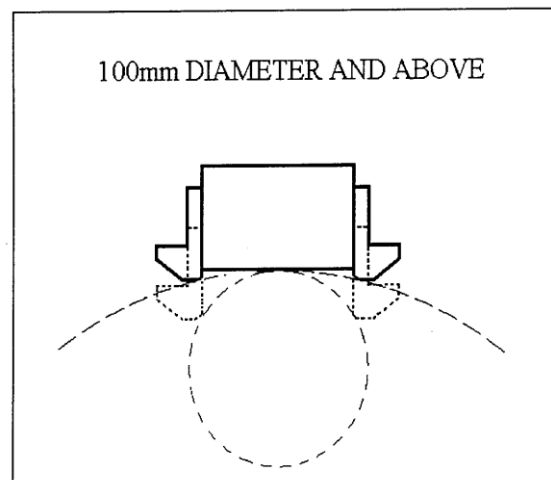
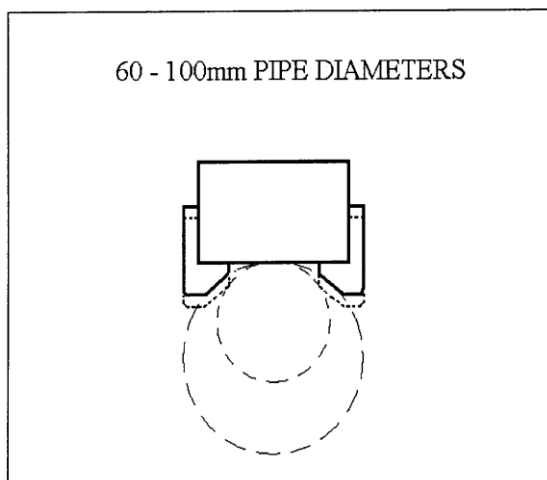
Item	Component	Part No
15	Bearing	RD43026
20	Vane Set	RD43028
24	Bearing	RD43027

Ref No.	Part No	Qty	Description
39 (40-42)	4430 0563 80	1	Gear rim complete
40	-	1	Gear rim (z = 47)
41	4090 0704 00	1	Lubricating nipple
42	0335 3508 01	1	Circlip (SB45)
43	4430 0559 00	1	Front part
44	0666 8003 05	1	Seal ring (G30 x 37 x 4)
45	0337 2622 00	1	Key (R6 x 6 x 30)
46	0502 3304 00	1	Ball bearing (6304-Z)
47	4430 0562 00	1	Nut
48 (49-50)	4430 0492 80	1	Gear rim complete
49	-	1	Gear rim (z = 45)
50	4090 0588 00	1	Circlip (BR35)
67	4430 0554 00	1	Washer
68	4170 0505 00	1	Cup spring
69	0663 9026 00	1	O Ring (40 x 1.78)
113(114-120)	4430 0547 80	1	Planetary gear complete (i = 4.62)
114	-	1	Planet shaft (Ø19mm)
117	4210 2214 00	1	Gear wheel (z = 15)
118	0517 0100 05	48	Bearing needle (1.5 x 13.8)
119	4210 2213 00	6	Washer (6.3/9.1 x 0.5)
120	4210 2215 00	3	Axle pin (6.22h6 x 23.5)
121	0502 1504 00	1	Ball bearing (16004)
122	4210 2220 00	1	Bushing
123 (124-127)	4430 0549 80	1	Planetary gear complete (i = 4.46)
124	-	1	Planet shaft (z = 13)
125	4430 0467 00	3	Gear wheel (z = 15)
126	0515 1103 01	3	Needle bearing (K5 x 8 x 10 TN)
127	0517 0100 11	3	Bearing roller (NRB 5.0 x 19.8)
128	0502 1103 00	1	Ball bearing (6003)
129	4430 0557 00	1	Washer
96 (97-98)	4430 0484 80	1	Planet shaft complete (i = 3.25)
97	-	1	Planet shaft (z = 13)
98	0517 0100 13	3	Bearing roller (NRB 3.0 x 17.8)
106	0515 0100 13	3	Needle bearing (K3 x 5 x 9 TN)
107	4430 0475 00	3	Gear wheel (z = 12)
111	4430 0556 00	1	Washer
112	4430 0474 00	1	Gear wheel (z = 11/20)

## 11) PIPE ADAPTOR KIT RD2311

### FITTING INSTRUCTIONS

- Dependent upon the size of the pipe to be cut (see illustrations) attach adjustable angle plates RD3328 with cap screws RD4325 and washers RD4205 (4 off each) to the magnet sides. Do not tighten.
- Locate the machine on the centreline of the pipe taking care that the magnet is in line with the longitudinal axis of the pipe.
- Switch on the magnet and move the sliding plates down to the outside diameter of the pipe. Tighten the screws on both sides by hand then check once again that the full length of the moving plates is touching the pipe at the front and back, fasten the plate securely. Feed the safety strap through the lugs at the front of the housing, around the pipe and pull tight.
- When cutting the hole DO NOT use excessive pressure but rather let the cutter ease into the cutting surface.



## 12) OPTIONAL EXTRAS

### **Rotabroach cutting fluid**

RD208 - 1 litre

RD229 - 5 litre

### **Chuck attachments**

RD440 – 5/8" x 16mm chuck and key

RD324 – chuck spacer

## 13) FITTING THE CHUCK

Remove the bearing bracket sleeve and arbor. Place the spacer RD324 onto threaded output shaft. Screw the chuck on to the output shaft until it flush and tight against the spacer.

When re-fitting the arbor, take care that the arbor is correctly aligned in the vertical axis.

## 14) MAINTENANCE

In order to 'get the best life' out of your Rotabroach machine always keep it in good working order.

A number of items must always be checked on Rotabroach 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 pneumatic supply is disconnected.**

Description	Every operation	1 week	1 Month
Visual check of machine for damage	X		
Operation of machine	X		
Check magnetic base	X		
Check alignment of the machine			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.

**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.

### Adjustment of slide and bearing bracket alignment.

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 brass Gib Strips and apply a small amount of light machine oil to the wear surfaces.
2. Now lower the slide back to its lowest position. Bring the slide into the center of the dovetail slide housing and loosen screws thus allowing free movement of the arbor support bracket.
3. Commencing with the middle screws, gently feed in all the screws until slight resistance is encountered.
4. 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.
5. Now raise the slide to its highest position. Slightly undo the arbor bearing bracket and, using fingers only, tighten the screws.
6. Place the machine on a steel plate, connect to the pneumatic supply and activate the magnet. Start up the motor. If the arbor is incorrectly aligned, the arbor support bracket will be seen to oscillate. Make any necessary further adjustments to the bracket to ensure correct alignment of the spindle and finally tighten the screws. Lastly tighten the arbor bearing bracket.



## 15) CUTTER SELECTION AND SPEEDS

Material	Material Hardness	Cutter
Mild and free cutting steels	<700N/mm <sup>2</sup>	RAP or RAPL
Mild and free cutting steels	<850N/mm <sup>2</sup>	SRCV or SRCVL
Steel angle and joists	<700N/mm <sup>2</sup>	RAP or RAPL
Steel angle and joists	<850N/mm <sup>2</sup>	SRCV or SRCVL
Plate and sheet steel	<700N/mm <sup>2</sup>	RAP or RAPL
Plate and sheet steel	<850N/mm <sup>2</sup>	SRCV or SRCVL
Aluminium	<750N/mm <sup>2</sup>	RAP or RAPL
Aluminium	<850N/mm <sup>2</sup>	SRCV or SRCVL
Brass	<700N/mm <sup>2</sup>	RAP or RAPL
Brass	<850N/mm <sup>2</sup>	SRCV or SRCVL
Cast iron	<700N/mm <sup>2</sup>	RAP or RAPL
Cast iron	<850N/mm <sup>2</sup>	SRCV or SRCVL
Stainless steel	<700N/mm <sup>2</sup>	RAP or RAPL
Stainless steel	<850N/mm <sup>2</sup>	SRCV or SRCVL
Stainless steel	>850N/mm <sup>2</sup>	CWC to CWCX
Rail track	>850N/mm <sup>2</sup>	SCRWC or SCRWCL
Tool steel	>850N/mm <sup>2</sup>	CWC to CWCX
Die Steel	>850N/mm <sup>2</sup>	CWC to CWCX

# Rotabroach<sup>TM</sup>

## 16) WARRANTY STATEMENT

Rotabroach<sup>TM</sup> warrants its machines to be free from faulty materials, 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<sup>TM</sup> 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<sup>TM</sup> 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 not in accordance with the operators 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<sup>TM</sup> parts.
4. Tools to which changes or additions have been made.
5. Electrical components are subject to manufacturer's warranty.

Your online registration can be submitted at [www.rotabroach.co.uk](http://www.rotabroach.co.uk)

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.

This can be found online at [www.rotabroach.co.uk](http://www.rotabroach.co.uk). Failure to complete this form will result in the delay of your claim.

All goods returned defective must be returned pre-paid to Rotabroach<sup>TM</sup>, in no event shall Rotabroach<sup>TM</sup> 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 PARTICULAR PURPOSE. ROTABROACH<sup>TM</sup> RESERVE THE RIGHT TO MAKE IMPROVEMENTS AND MODIFICATIONS TO DESIGN WITHOUT PRIOR NOTICE

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