

# evOLUTION

## EV042

42mm MAGNETIC DRILLING SYSTEM

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### Original Instruction Manual

Read instructions before operating this tool.

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Guard omitted for illustrative purposes only.



**GB**

# Original Instruction Manual

Read instructions before operating this tool.

**TABLE OF CONTENTS** **GB**

<b>EC - Declaration of Conformity</b>	<b>p3</b>
<b>Important Information</b>	<b>p4</b>
<b>12 Month Limited Warranty</b>	<b>p4</b>
<b>General Safety Rules</b>	<b>p4</b>
<b>Health Advice</b>	<b>p5</b>
<b>Specific Safety Rules</b>	<b>p6</b>
<b>Additional Safety Advice</b>	<b>p6</b>
<b>Labels &amp; Symbols</b>	<b>p7</b>
<b>Specifications</b>	<b>p7</b>
<b>Assembly</b>	<b>p8</b>
<b>Getting Started</b>	<b>p9</b>
<b>Operating Instructions</b>	<b>p10</b>
<b>Operating Advice</b>	<b>p10</b>
<b>Maintenance</b>	<b>p11</b>
<b>Environmental Protection</b>	<b>p11</b>
<b>Service Parts Diagram</b>	<b>p12</b>

**Original Instructions**  
**This instruction manual was originally written in English.**

**EC - DECLARATION OF CONFORMITY** **GB**

We, manufacturer and importer  
Evolution Power Tools Ltd.  
Venture One  
Sheffield  
S20 3FR

Declare that the product  
Part numbers: EVO42  
Evolution: EVO42  
42mm Magnetic Drilling System

Complies with the essential requirements of the following European Directives:

- 2006/42/EC** – Machine Directive
- 2006/95/EC** – Low Voltage Directive
- 2004/108/EC** – EMC Directive
- 2002/95/EC** – Restriction of the use of Certain Hazardous Substances in Electrical and Electric Equipment

The following standards have been applied:

- EN55014-1 : 2006**
- EN55014-2 : 1997+A1+A2**
- EN61000-3-2 : 2000**
- EN61000-3-3 : 1995+A1+A2**
- EN61029-2-9 : 2002**
- EN60825-1 : 1994+A1+A2**
- EN61029-1:2009**
- EN ISO 12100-2/A1:2009**
- ISO 12100-2:2003**

All documentation is held on file at the above address and is available, on request for review.

Authorised Signatory  
Date: 21/10/2011



**Mr Matthew J Gavins**  
**Managing Director**

**IMPORTANT INFORMATION**

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Please read these operating and safety instructions carefully and completely. For your own safety, before using this equipment check that the voltage is correct and that all handles and parts are firmly secured.

If you are uncertain about any aspect of using this equipment, please contact our Technical Helpline.

Technical Helpline UK: **0870 609 2297**

**Congratulations on your purchase of an Evolution Power Tools machine.**

Please complete your product registration online to validate your machine's warranty period and ensure prompt service if needed. We sincerely thank you for selecting a product from Evolution Power Tools.

**12 MONTH LIMITED WARRANTY**

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**Evolution power tools reserves the right to make improvements and modifications to design without prior notice.**

Evolution Power Tools will, within twelve (12) months from the original date of purchase, repair or replace any goods found to be defective in materials or workmanship. This warranty is void if the machine being returned has been used to cut materials beyond the recommendations in the Instruction Manual or if the machine has been damaged by accident, neglect, or improper service.

This warranty does not apply to machines and / or components which have been altered, changed, or modified in any way, or subjected to use beyond recommended capacities and specifications.

Electrical components are subject to respective manufacturers' warranties. All goods returned defective shall be returned prepaid freight to Evolution Power Tools. Evolution Power Tools reserves the right to optionally repair or replace it with the same or equivalent item. There is

no warranty – written or verbal – for drill bits or cutters. In no event shall Evolution Power Tools be liable for loss or damage resulting directly or indirectly from the use of our merchandise or from any other cause.

Evolution Power Tools is not liable for any costs incurred on such goods or consequential damages. No officer, employee or agent of Evolution Power Tools is authorised to make oral representations of fitness or to waive any of the foregoing terms of sale and none shall be binding on Evolution Power Tools. Questions relating to this limited warranty should be directed to the company's head office or call the appropriate Helpline number.

**IMPORTANT SAFETY INSTRUCTIONS**

To reduce the risk of electric shock, this equipment is fitted with an approved cord and plug for its intended country of use. Do not change the cord or plug in any way.

**GENERAL SAFETY RULES**

GB

**WARNING:** When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury. Please read all of these instructions before attempting to operate this machine. Save this manual for future reference.

- 1.** Keep work area clear. Cluttered work areas invite accidents.
- 2.** Consider work area environment. Do not expose tools to rain. Do not use tools in damp or wet locations. Keep work area well lit. Do not use tools in the presence of flammable liquids or gases.
- 3.** Guard against electric shock. Avoid body contact with earthed or grounded surfaces (e.g. pipes, radiators, ranges, refrigerators).
- 4.** Keep other people away. Do not let others, especially children, come close to the work, and touch the tool or the extension lead. Keep them away from the work area.

- 5.** Store idle tools. When not in use, tools should be stored in a dry locked-up place, out of reach of children.
- 6.** Do not force the tool. It will do the job better and safer at the rate for which it was intended.
- 7.** Use the right tool. Do not force small tools to do the job of a heavy duty tool. Do not use tools for purposes not intended; for example do not use circular saws to cut tree limbs or logs.
- 8.** 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 protective hair covering to contain long hair.
- 9.** Use protective equipment. Use safety glasses. Use face or dust mask if working operations create dust.
- 10.** Connect dust extraction equipment. If the tool is provided for the connection of dust extraction and collection equipment, ensure these are connected and properly used.
- 11.** Do not abuse the cord. Never yank the cord to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges.
- 12.** Secure work. Where possible, use clamps or a vice to hold the work. It's much safer than using your hand.
- 13.** Don't over reach. Keep proper footing and balance at all times.
- 14.** Maintain tools with care. Keep cutting tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by an authorised service facility. Inspect extension cord periodically and replace immediately if damaged. Keep handles dry, clean and free from oil and grease.
- 15.** Disconnect tools. When not in use, before any servicing and when changing accessories such as blades, bits, cutters, disconnect tool from the power source
- 16.** Remove adjusting keys and spanners. Form the habit of checking to see the keys and adjusting spanners are removed from the tool before turning it on.
- 17.** Avoid unintentional starting. Ensure switch is in "off" position when plugging in.

- 18.** Use outdoor extension leads. When the tool is used outdoors, use only extension cords intended for outdoor use and so marked.
- 19.** Stay alert. Watch what you are doing, use common sense and do not operate the tool when you are tired.
- 20.** Check damaged parts. Before further use of tool, it should be carefully checked to determine that it will operate properly and perform the intended function. Check for alignment of moving parts, mountings and any other components that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorised service centre unless otherwise indicated in this instruction manual. Have defective switches replaced by an authorised service centre. Do not use the tool if the switch does not turn it on and off.
- 21. WARNING.** The use of any accessory or attachment other than one recommended in this instruction manual may present a risk of personal injury.
- 22.** Have your tool repaired by a qualified person. This electric tool complies with relevant safety rules. Repairs should only be carried out by qualified persons using original spare parts. Otherwise this may result in considerable danger to the user.

#### HEALTH ADVICE

**GB**

**WARNING:** When drilling, sanding, sawing or grinding, dust particles will be produced. In some instances, depending on the materials you are working with, this dust can be particularly harmful to you (e.g. lead from old gloss paint). You are advised to consider the risks associated with the materials you are working with and to reduce the risk of exposure.

You should:

- Work in a well-ventilated area.
- Work with approved safety equipment, such as dust masks that are specially designed to filter microscopic particles.

## SPECIFIC SAFETY RULES

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- A)** Keep guards in place and in working order.
- B)** Remove adjusting keys and wrenches. Form the habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.
- C)** Keep work area clean. Cluttered areas and benches invite accidents.
- D)** Don't use in dangerous environment. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lit.
- E)** Keep children away. All visitors should be kept a safe distance from the work area.
- F)** Don't force the tool. It will do the job better and safer if used at the rate for which it was designed.
- G)** Use proper extension cord. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your machine will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and possible overheating.
- H)** Wear proper apparel. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewellery which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- I)** Always use safety glasses. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
- J)** Secure work. Use clamps to hold work when practical.
- K)** Don't overreach. Keep proper footing and balance at all times.
- L)** Maintain tools with care. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- M)** Disconnect tools before servicing and when changing accessories, such as blades drill bits or cutters.
- N)** Reduce the risk of unintentional starting. Make sure switch is in off position before plugging in.
- O)** Use recommended accessories. Only use genuine Evolution accessories.

- P)** Check for damaged parts. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function - check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- Q)** Keep hands out of the path of the saw blades, drill bits or cutters
- R)** Never reach around saw blades, drill bits or cutters
- S)** Turn off tool and wait for saw blades, drill bits or cutters to stop before moving the machine or changing settings.
- T)** Disconnect the power before changing saw blades, drill bits, cutters, or servicing or cleaning.
- U)** Never carry the tool by the power cord. Carrying the tool by the power cord could cause damage to the insulation or the wire connections resulting in the possibility of electric shock or fire.

## ADDITIONAL SAFETY ADVICE

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- 1.** Although compact, this machine is heavy. To reduce the risk of back injury, get help whenever you have to lift the machine.
- 2.** To reduce the risk of back injury, hold the tool close to your body when lifting. By bending your knees you can lift with your legs, not your back. Lift by using the integral lifting/carrying handle.
- 3.** Never carry the machine by the power cord. Carrying the tool by the power cord could cause damage to the insulation or the wire connections resulting in electric shock or fire.
- 4.** Before moving the machine tighten the secondary slide lock knob to guard against sudden movement.

**WARNING:** Do not use the machines cutting head as a 'lifting point'.

**LABELS & SYMBOLS** GB

**WARNING:** Do not operate machine if warning and / or instruction labels are missing or damaged. Contact your supplier for replacement labels.

Symbol	Description
V	Volts
A	Amperes
Hz	Hertz
min <sup>-1</sup>	Minutes
~	Alternating current
No	no load speed
	Wear Safety Goggles
	Wear Ear Protection

Only use genuine Evolution replacement parts.  
**Unauthorized parts may be dangerous!**  
 To obtain an additional copy of your manual, please contact your supplier.

**SPECIFICATIONS** GB

Motor (230V ~ 50 Hz) (Watts):	1200
Maximum Cutter Diameter (mm):	42
Maximum Cutting Depth (mm):	50
RPM No Load (min-1 ):	450
Recommended Max Duty Cycle (Mins):	30
Weight (kg):	11.2
<b>Max Dimensions</b>	
(Rack Fully Raised) (mm):	570 x 300 x 170
Magnet Dimensions (mm):	40 x 90 x 180
Magnetic Adhesion (kg):	1300 LNF
Cutter Retainer (Weldon Shank)	
Internal Diameter (mm):	19

**Noise and Vibration Data**

Sound pressure level (LpA):	89.4dB(A)
Sound power level (LwA):	102.4dB(A)
K =	3dB(A)

**Vibration Data**

Ah =	0.629 m/s <sup>2</sup>
K =	1.5 m/s <sup>2</sup>

**Vibration level:**

The declared vibration total value has been measured in accordance with a standard test method and may be used for comparing one tool with another. The declared vibration total value may also be used in a preliminary assessment of exposure.

**WARNING:** The vibration emission during actual use of the power tool can differ from the declared total value depending on the ways in which the tool is used. The need to identify safety measures and to protect the operator are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle, such as the times the tool is switched off, when it is running idle, in addition to trigger time).

**ADDITIONAL ACCESSORIES**

In addition to the standard accessories supplied with this machine, other accessories are available from your supplier. These include the following items:

<b>HTA 47</b>	Chuck Adaptor
<b>HTA153</b>	Chuck & Key 13mm
<b>HTA 030</b>	Countersink Bit 0-30mm
<b>HTxxS</b>	Short 25mm Cutters 12mm - 42mm
<b>HTxxL</b>	Long 50mm Cutters 12mm - 42mm

## ASSEMBLY

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Your Evolution Power Tools saw is shipped complete. Remove all contents from the box and inspect to ensure no damage was incurred during shipping, and that the items listed below are included.

## ITEMS SUPPLIED

Description	Quantity
Instruction Manual	1
Coolant System	1
Guard	1
Hex Key 2mm	1
Hex Key 3mm	1
Hex Key 4mm	1
Hex Key 5mm	1
Handles	3
Wing Screws	2
Spring Washers	2
Safety Strap	1
Carry Case	1

1. Insert the three handles into the spindle boss and screw them tightly in place. **(Fig. 1)**
2. Attach the guard using the Wing Screws/Socket Headed Screws and washers provided. **(Fig. 2)**
3. Attach the coolant tank and coolant pipe to the Left Hand side of the machine. The coolant pipe is a push fit onto the quick fit connector on Left Hand side gearbox casing. The coolant tank should be fastened to the machine using the  $\varnothing 6$  mm socket headed screw inserted into the threaded hole located at the top Left Hand side of the machines carriage. **(Fig. 3)**

**Note:** For some operations it may be convenient to remove the coolant tank and supply pipe, and to use alternative coolant application methods.

FIG 1

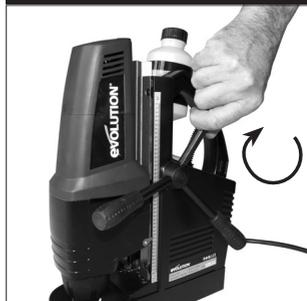


FIG 2



FIG 3



## GETTING STARTED

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**WARNING: Always Disconnect The Machine From Power Source Before Making Adjustments.** Refer to the “Service Parts Diagram”.

### INSTALLING OR REMOVING A CUTTER

**WARNING:** Only use genuine Evolution cutters which are designed for this machine. Select the correct cutter for the material to be cut.

**Note:** It is recommended that the operator considers wearing protective gloves when handling the cutter during installation or when changing the machines cutter.

### TO INSERT A CUTTER

1. Insert the relevant pilot pin into the cutter. The ‘point’ of the pilot pin should face towards the cutting edge of the cutter.
  2. Slide the cutter into the arbor and align the two flats on the cutters shank with the two locking screws. **(Fig. 4)**
  3. Tighten the locking screws securely with the supplied hex wrench.
- Caution:** Ensure that both locking screws are on a machined flat on the cutters shank and not just against the rounded shank.

To remove the cutter, reverse the procedure.



FIG 4

### INSTALLING THE CHUCK ADAPTOR

The optional chuck adaptor (part HTA 47) can be fitted into the EVO42 machines arbor, and then the machine can be fitted with a standard 3 jawed self centering chuck. This enables the EVO42 to take standard parallel twist drills up to  $\varnothing 13\text{mm}$ . Fit the adapter in the same way as fitting a cutter into the arbor, but omit the pilot pin.

**Note:** To use the machine with standard twist drills will mean that the secondary slide facility of the machine must be utilised. This will allow the machine to be adjusted to take account of the longer reach of the standard chuck and twist drills. The locking lever for the secondary slide has a left hand thread and is found on the lower Left Hand side of the gearbox housing. **(Fig. 5)**

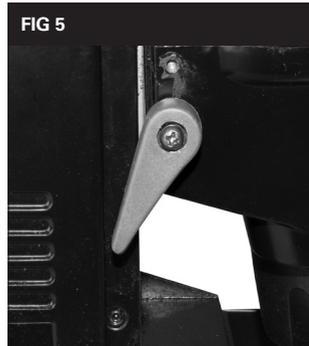


FIG 5

## OPERATING INSTRUCTIONS

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### Magnetic Drill Safety

**Note:** It is recommended that only operators who have been fully trained in the use of this machine, and have read and understood the machines operating manual are allowed to use this machine.

### Magnetic Adhesion

The drills magnetic adhesion depends upon the thickness and condition of the workpiece. Rust and multi-layer paint buildup can affect magnetic adhesion. Whenever possible loose rust and paint,

etc, should be removed from the work area before the machine is positioned. 10 mm is the optimum material thickness for safe operation. Keep the magnet clean of metal chips and other dirt and debris. These can also seriously reduce magnetic adhesion. The operator should ensure that the magnet has adhered to the workpiece firmly before switching on the drill. Always use the supplied safety strap.

**Note:** The Magnet has an automatic 2 stage power feature. When the magnet is first switched on it will operate at approximately 50% adhesion power, allowing the operator to make final adjustments to the machines position. When the motor is started the magnet will switch to full magnetic adhesion power.

### Supply

The drill should be operated from its own electrical outlet with a Residual Current Device (RCD) fitted. If other units share a common supply (such as an on-site generator) operator care should be exercised to ensure that the supply to the magnetic drilling system is never compromised.

### Coolant

Before each use always check the coolant feed and level is sufficient.

**Note:** The coolant feed can be checked with the machine in position, but the motor must be switched off and the cutter **stationary and cold**. Never operate without cutting coolant or paste. Ensure that the coolant feed tap is on and coolant feeds properly by pushing the pilot pin. If it feeds too quickly or slowly, adjust the tap accordingly. Keep the tap closed when not in use.

### Adjusting Gibs (Dovetail Slides) Free Play

Periodically check, lubricate and adjust as necessary.

**1.** Using the supplied 3mm Hex Key slightly loosen the 3 cap screws. (**Fig. 6A** shows 1 of the cap screws).

**2.** Using the 2 mm Hex Key supplied turn the 3 adjusting screws (**Fig. 6B** shows 1 of the adjusting screws), evenly whilst operating the crank handle to move the slide up and down.

There should be so no free play, yet no binding anywhere throughout the range of travel.

**3.** Re-tighten the 3 cap screws when adjustment is complete.

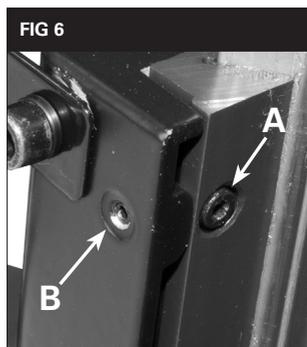


FIG 6

### OPERATING ADVICE

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**Note:** Do not operate this machine wearing gloves. Ensure that the machine is connected to a suitable power supply and any trailing cables do not pose a safety risk to the operator or other workers on site. Always attach the safety strap if at all possible.

**1.** Position the machine using the pilot pin as an aid to locating the center of the cut.

**2.** Switch on the magnet using the red switch located at the back of the machine.

Note: The machines motor will not operate until the machines magnet has been switched on.

**3.** Check that the cutter is still in the correct position and the machine is securely held onto the workpiece.

**4.** With the motor head in the raised position, switch on the motor using the switch on the top of

the machine and allow to run up to full speed.

**5.** Turn the crank handle to begin cutting. Use light pressure at first to keep the cutter from wandering, and then gradually increase until normal pressure is being applied. Do not force the tool – let the speed of the cutter do the work. Cutting performance will not improve by applying more pressure on the tool, and cutter and motor life will be reduced.

**6.** Regulate the flow of cutting coolant as required with the coolant feed tap. Use less pressure as the cutter exits through the material. Always provide a method of catching the slug, where the ejected slug may cause injury.

**Caution:** The slug ejected at the end of a cut can be very hot.

**Overload Protection**

This machine is fitted with an overload protection device, which prevents damage to the machine should the motor be overloaded. Overload could be caused by using a blunt, damaged or an oversized cutter or by using excessive feed-in pressure.

If the overload protection device trips the machines motor will stop, but maximum magnetic adhesion will be maintained holding the machine in position.

Before attempting to restart the machine investigate the cause of the overload situation.

To restart the machine operate the motor switch on the top of the machine, switching it first to the 'OFF' position before returning it to the 'ON' position. The motor will restart.

If the overload protection device persistently operates and causes such as those mentioned above have been eliminated, have the machine checked and serviced by a qualified person.

**MAINTENANCE** GB

**Note:** Any maintenance must be carried out with the machine switched off and disconnected from the mains/battery power supply.

Check that all safety features and guards are operating correctly on a regular basis. Only use this machine if all guards/safety features are fully operational.

All motor bearings in this machine are lubricated for life. No further lubrication is required.

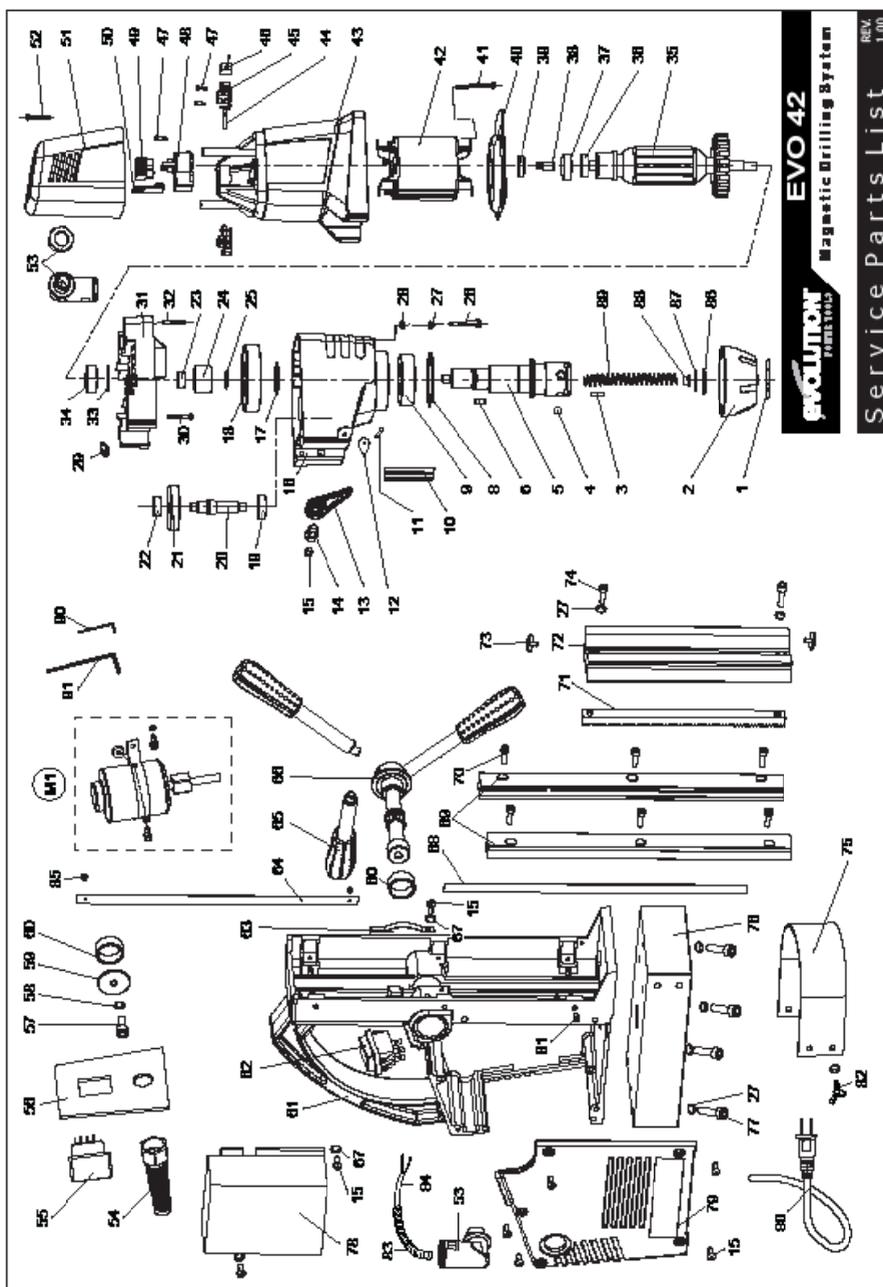
Use a clean, slightly damp cloth to clean the plastic parts of the machine. Do not use solvents or similar products which could damage the plastic parts.

**WARNING:** Do not attempt to clean by inserting pointed objects through openings in the machines casings etc. The machines air vents should be cleaned using compressed dry air.

Excessive sparking may indicate the presence of dirt in the motor or worn out carbon brushes. If this is suspected have the machine serviced and the brushes replaced by a qualified person.

**ENVIRONMENTAL PROTECTION** GB

Waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.



**EVO 42**  
Magnetic Drilling System

**EVOLUTION**  
STEEL

Service Parts List

REV.  
1.00



# evolution

[www.evolutionsteel.com](http://www.evolutionsteel.com)