

# Rotary Bush Hammer



## INSTRUCTION MANUAL

### ORIGINAL INSTRUCTIONS

For your personal safety,  
READ and UNDERSTAND before using.

SAVE THESE INSTRUCTIONS  
FOR FUTURE REFERENCE.



### CAUTION:

For tools equipped with overload protection, when the motor shuts off due to overload, always run the machine with no load for at least 3 minutes to reduce temperature before returning to operation to avoid burn-out of the motor.

Voltage	See machine nameplate
Power input	1200 W (with feedback speed stabilization)
No load min <sup>-1</sup>	1600-3200
Full load min <sup>-1</sup>	960-1920
Bush hammering diameter	51, 70, 96, or 116mm
Net weight	4.8 Kg



## GENERAL SAFETY INSTRUCTIONS



### **WARNING! Read all safety warnings and all instructions.**

Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

**Save all warnings and instructions for future reference.** The term “power tool” in the warnings refers to your mainsoperated (corded) power tool or battery-operated (cordless) power tool.

### 1) WORK AREA SAFETY

#### **a) Keep work area clean and well lit.**

Cluttered or dark areas invite accidents.

#### **b) 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.

#### **c) Keep children and bystanders away while operating a power tool.**

Distractions can cause you to lose control.

### 2) ELECTRICAL SAFETY

#### **a) Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.**

Unmodified plugs and matching outlets will reduce risk of electric shock.

#### **b) Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and**

**refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

#### **c) Do not expose power tools to rain or wet conditions.**

Water entering a power tool will increase the risk of electric shock.

#### **d) Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.**

Damaged or entangled cords increase the risk of electric shock.

#### **e) When operating a power tool outdoors, use an extension cord suitable for outdoor use.**

Use of a cord suitable for outdoor use reduces the risk of electric shock.

#### **f) If operating a power tool in a damp location is unavoidable, use an earth leakage circuit breaker.**

Use of an earth leakage circuit breaker reduces the risk of electric shock.

### 3) PERSONAL SAFETY

#### **a) Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.**

A moment of inattention while operating power tools may result in serious personal injury.

#### **b) Use personal protective equipment. Always wear eye protection.**

Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce

personal injuries.

**c) Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.**

Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.

**d) Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

**e) Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

**f) Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.

**g) If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

#### **4) POWER TOOL USE AND CARE**

**a) Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.

**b) Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

**c) Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

**d) Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

**e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

**f) Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

**g) Use the power tool, accessories and tool bits etc., in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

#### **5) SERVICE**

**a) Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

## Symbols used in this manual

V.....volts

A.....amperes

Hz.....hertz

W.....watt

~.....alternating current

$n_0$ .....no load speed

$\text{min}^{-1}$ .....revolutions or reciprocation  
per minute

.....class II tool

## SPECIFIC SAFETY RULES

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints
- crystalline silica from bricks and cement and other masonry products
- arsenic and chromium from chemically-treated lumber

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, always wear NIOSH/OSHA approved, properly fitting face mask or respirator when using such tools.

**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. Keep hands away from rotating parts.**
- 3. Wear eye and hearing protection. Always use safety glasses. Everyday eyeglasses are NOT safety glasses. USE CERTIFIED SAFETY EQUIPMENT.**
- 4. Use of this tool can generate and disburse dust or other airborne particles, including wood dust, crystalline silica dust and asbestos dust.** Direct particles away from face and body. Always operate tool in well ventilated area and provide for proper dust removal. Use dust collection system wherever possible. Exposure to the dust may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. Allowing dust to get into your mouth or eyes, or lay on your skin may promote absorption of harmful material. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

## Terminology:

**DANGER: indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.**

**WARNING: indicates a potentially hazardous**

situation which, if not avoided, could result in death or serious injury.

**CAUTION:** indicates a potentially hazardous situation which, if not Avoided, may result in minor or moderate injury. or indicates potentially hazardous situation which, if not avoided, may result in property damage.

**NOTE:** indicates useful advice for operating the machine for best performance or convenience, etc.

## **MOTOR**

Always check the nameplate to ensure the A.C. current supply is the correct voltage for your machine.

This tool will operate on voltage within plus or minus 5 percent of that shown on the specification plate on the tool. Refer to the specification plate on your tool for proper voltage and current rating.

Do not operate your tool on a current on which the voltage is not within correct limits. If an extension cord is used, make sure the conductor size is large enough to prevent excessive voltage drop which will cause loss of power and possible motor damage.

If an extension cord is to be used outdoors, it must be marked with the suffix WA or W following the cord type designation. For example – SJTW-A to indicate it is acceptable for outdoor use. Always choose the shortest possible cord.

## **Safety Warnings Common for Grinding, Operations:**

**a) This power tool is intended to function as a bushhammer grinder. Read all safety warnings, instructions, illustrations and specifications provided with this power tool.** Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

**b) Operations such as sanding, wire brushing, polishing or cutting-off are not recommended to be performed with this power tool.** Operations for which the power tool was not designed may create a hazard and cause personal injury.

**c) Do not use accessories which are not specifically designed and recommended by the tool manufacturer.** Just because the accessory can be attached to your power tool, it does not assure safe operation.

**d) The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool.** Accessories running faster than their rated speed can break and fly apart.

**e) The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool.** Incorrectly sized accessories cannot be adequately guarded or controlled.

**f) The arbour size of wheels, flanges, backing pads or any other accessory must properly fit the spindle of the power tool.** Accessories with arbour holes that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.

**g) Do not use a damaged accessory. Before each use inspect the accessory such as wheels for chips and cracks. If power tool or accessory is dropped, inspect for damage or install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute.** Damaged accessories will normally break apart during this test time.

**h) Wear personal protective equipment. Depending on application, use face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments.** The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.

**i) Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment.** Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.

**j) Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting accessory may contact hidden wiring or its own cord.** Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

**k) Position the cord clear of the spinning accessory.** If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.

**l) Never lay the power tool down until the accessory has come to a complete stop.** The spinning accessory may grab the surface and pull the power tool out of your control.

**m) Do not run the power tool while carrying it at your side.** Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.

**n) Regularly clean the power tool's air vents.** The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.

**o) Do not operate the power tool near flammable materials.** Sparks could ignite these materials.

**p) Do not use accessories that require liquid coolants.** Using water or other liquid coolants may result in electrocution or shock.

### **Kickback and Related Warnings**

Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding. For

example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

**a) Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start-up.** The operator can control torque reactions or kickback forces, if proper precautions are taken.

**b) Never place your hand near the rotating accessory.** Accessory may kickback over your hand.

**c) Do not position your body in the area where power tool will move if kickback occurs.** Kickback will propel the tool in direction opposite to the wheel's movement at the point of snagging.

**d) Use special care when working corners, sharp edges etc. Avoid bouncing and snagging the accessory.** Corners, sharp edges or bouncing have a tendency to snag the rotating accessory and cause loss of control or kickback.

**e) Do not attach a saw chain woodcarving blade or toothed saw blade.** Such blades create frequent kickback and loss of control.

### **Safety Warnings Specific for Grinding Operations:**

**a) Use only wheel types that are recommended for your power tool and the specific guard designed for the selected wheel.** Wheels for which the power tool was not designed cannot be adequately guarded and are unsafe.

**b) The guard must be securely attached to the power tool and positioned for maximum safety, so the least amount of wheel is exposed towards the operator.** The guard helps to protect the operator from broken wheel fragments, accidental contact with wheel and sparks that could ignite clothing.

**c) Wheels must be used only for recommended applications. For example: do not grind with the side of cut-off wheel.** Abrasive cut-off wheels are intended for peripheral grinding, side forces applied to these wheels may cause them to shatter.

**d) Always use undamaged wheel flanges that are of correct size and shape for your selected wheel.** Proper wheel flanges support the wheel thus reducing the possibility of wheel breakage. Flanges for cut-off wheels may be different from grinding wheel flanges.

**e) Do not use worn down wheels from larger power tools.** Wheel intended for larger power tool is not suitable for the higher



speed of a smaller tool and may burst.

### EXTENSION CORD SELECTION

Total Extension Cord Length (feet)	Cord Size (AWG)
25	16
50	12
100	10
150	8
200	6

### ROTARY BUSH HAMMER

#### FOREWORD

This Rotary Bush Hammer is designed for texturing and roughening of smooth stone surfaces. This is especially important for performing operations to create anti-slip surfaces on stone floors and steps. The parallel guide allows the creation of parallel anti-slip strips on stone stairs and floors. There are different mounting positions for the Bushhammer Roll Tool Holders to create different working widths.

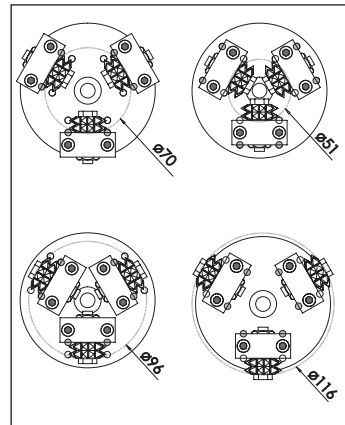
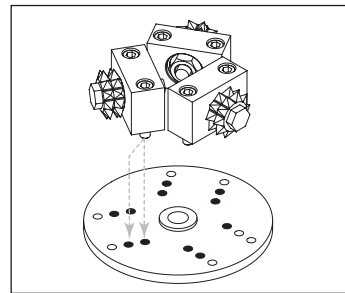
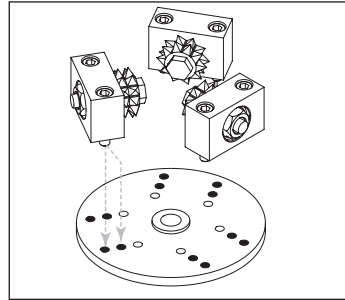
#### ● ASSEMBLY

**CAUTION: DISCONNECT TOOL FROM POWER SOURCE. SETTING UP THE BUSHHAMMER.**

There are number of different mounting points for the three Tool Holders on the Mounting Plate to achieve different working diameters. The Tool Holders may also be mounted with the Bushhammer Rolls facing either inwards or outwards. Adjust to the desired position and fully tighten the Tool

Holder.

There are a total of 4 possible positions.



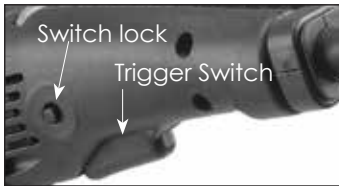
#### ● OPERATION

#### TO START AND STOP THE MACHINE

**CAUTION: Make sure switch is OFF and**

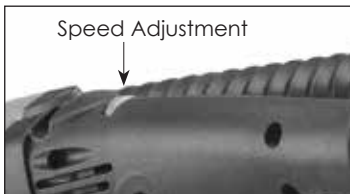
**power circuit voltage is the same as that shown on the specification plate.**

1. Connect tool to power source.
2. Grip machine firmly to resist starting torque.
3. Squeeze trigger switch to turn tool on. Release the trigger to shut tool off.
4. To lock the switch in the "on" position, press the lock pin while the switch is fully on. To release the lock, press the switch and release it.



#### ● CONTROLLING THE VARIABLE SPEED

Speed is adjusted using the thumbwheel at the top of the main handle. The trigger switch is lockable. With switch in the locked ON position the thumbwheel may be used to adjust the speed.



This machine incorporates feedback speed stabilization so that the speed will not slow

with load. It will maintain the preset speed regardless of the load.

Always start at a slower speed and work up to the best speed.

#### ● MOUNTING THE VACUUM CLEANER HOSE

First, remove the standard end from your vacuum cleaner hose (not included) then thread on the Bayonet Adaptor End (provided) to your existing vacuum cleaner hose. Plug the Bayonet Adaptor into the Swivel Mount in the back of the machine. Once the tangs of the Bayonet Adaptor are fully inserted in the slots, hold the Swivel Mount from turning and turn the Bayonet Adaptor clockwise to lock. A vacuum dust collection system must always be used when operating this machine.



## ● BUSH HAMMERING OPERATION

**WARNING: Always wear eye and hearing protection.**

1. Hold the machine firmly by the front and rear handles.
2. Start the machine with the tool holder in contact with the work surface.
3. Move the machine evenly over the work. **DO NOT HOLD THE MACHINE IN ONE SPOT** Doing so will create circular marks in the surface.
4. Do not try to achieve all roughening in one pass. It is best to evenly work the surface until the desired surface texture is achieved.
5. Stay at least 1 cm from the edge. Running over the edge will cause the edges of the work surface to be chipped and could damage the tool.

## ● THE PARALLEL GUIDE:

The Parallel Guide may be mounted in any of 3 positions (Either 3, 9 or 12 o'clock) to guide the Bush Hammer to make controlled straight lines. Simply mount in the desired position, adjust to the desired length, then tighten with the L-hex key wrench provided.



## ● MAINTENANCE

This type of machine creates a lot of vibration which can loosen screws and bolts. Routinely tighten all bolts on the machine.

## ● KEEP TOOL CLEAN

Periodically blow out all air passages with dry compressed air. All plastic parts should be cleaned with a soft damp cloth. **NEVER** use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.

**Wear safety glasses while using compressed air.**

## ● FAILURE TO START

Should your tool fail to start, check to make sure the prongs on the cord plug are making good contact in the outlet. Also, check for blown fuses or open circuit breakers in the line.

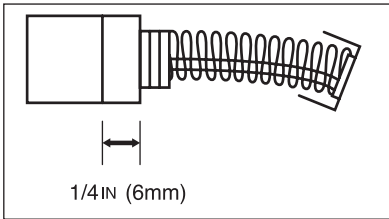
## ● THE CARBON BRUSHES

The carbon brushes are a normal wearing part and must be replaced when they reach their wear limit.

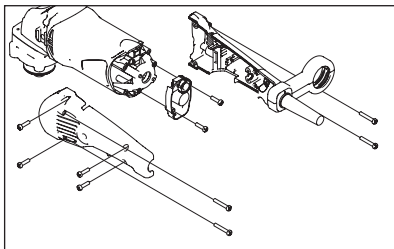
**NOTE: Checking and replacing the carbon brushes should be entrusted to a qualified service center.**

The carbon brushes furnished will last

approximately 50 hours of running time or 10,000 on/off cycles. Replace both carbon brushes when either has less than 1/4" length of carbon remaining.

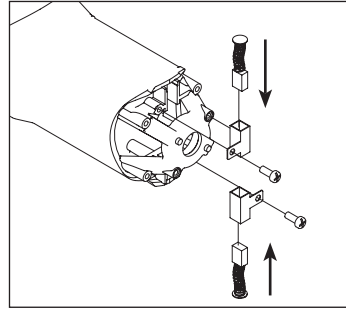


1. To inspect or replace brushes, first unplug the machine.
2. Carefully remove the 4 screws to separate the rear handle halves and then remove the 4 screws which connect the handle to the motor housing. Lift away the left-hand handle half first.
3. There will still be wires connected to the rear handle, so take care that these are not stressed. Simply hold the rear handle off to one side.



4. Next remove the two screws holding on the Electronics Unit to allow access to the Brush Holder screws. Hold the Electronics Unit off to one side and avoid stressing the wires.

5. Unscrew the two Carbon Brush Holders and remove the Carbon Brushes.



**NOTE: When putting the Carbon Brushes back into the Carbon Brush Holders it is essential that both flanges go back inside the holder.**

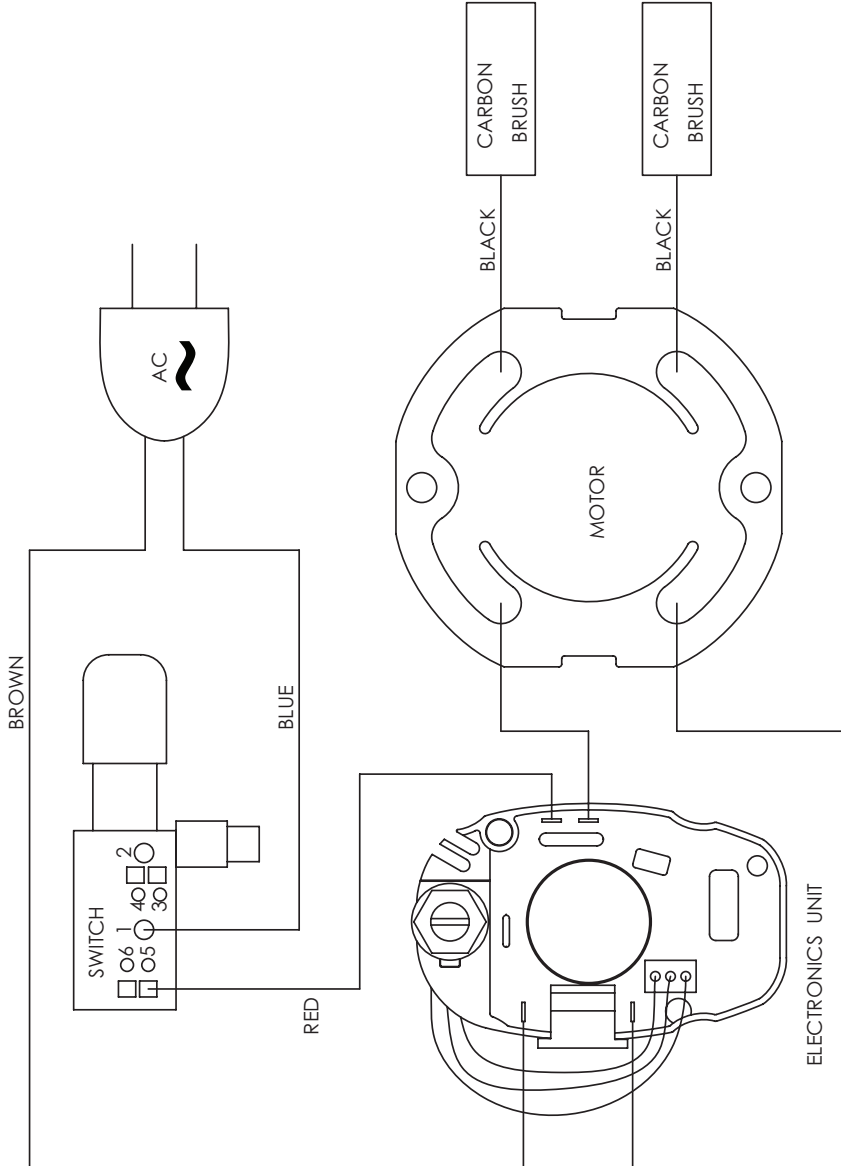
**NOTE: To reinstall the same brushes, first make sure the brushes go back in the way they came out. Otherwise a break-in period will occur that will reduce motor performance and increase brush wear.**

Replacing is the reverse of removal. Replace the Brush Holder screws, then the Electronics Unit screws.

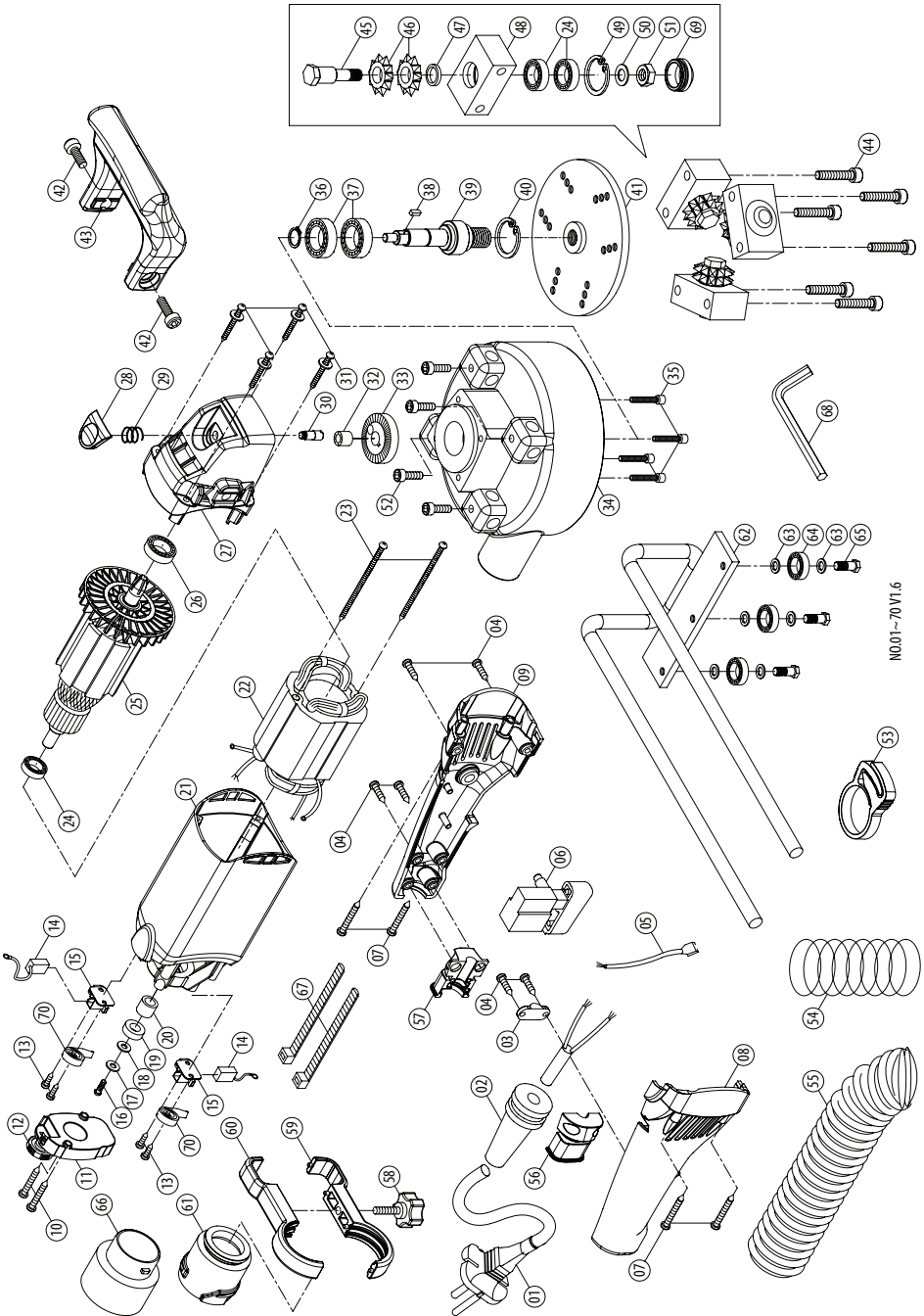
When Replacing the rear handle to the motor housing, take great care that all wires are in place and not in a position to be pinched when it is retightened. It is recommended that, at least once a year, you take the tool to an Authorized Service Center for a thorough cleaning and lubrication.

If the replacement of the power supply cord is necessary, this has to be done by the manufacturer or their agent in order to avoid a safety hazard.

# WIRING



# EXPLODED VIEW



NO.01-70V1.6

## PARTS LIST

NO.	Parts Name	Q'TY	NO.	Parts Name	Q'TY
1	POWER SUPPLY CABLE	1	35	SOCKET CAP SCREW M4 x 40	4
2	CORD ARMOR	1	36	EXTERNAL CIRCLIP S-12	1
3	CABLE CLIP	1	37	BALL BEARING 6001-LLU	2
4	SCREW M4 x 14	6	38	PARALLEL KEY 4 x 4 x 8	1
5	WIRE LEAD 20#9L+5 +110	1	39	SPINDLE	1
6	SWITCH	1	40	INTERNAL CIRCLIP R-28	1
7	SCREW M4 x 25	4	41	BUSH HAMMER MOUNTING PLATE	1
8	RIGHT HANDLE COVER	1	42	SOCKET CAP SCREW M8 x 16	2
9	LEFT HANDLE COVER	1	43	FRONT HANDLE	1
10	SCREW M4 x 20	2	44	ROLL MOUNTING BOLT M6 x 30	6
11	ELECTRONICS UNIT	1	45	AXLE BOLT	3
11	ELECTRONICS UNIT	1	46	BUSH HAMMER ROLL DISC	6
12	THUMB WHEEL	1	47	THICK WASHER Ø8.1 x Ø14.9 x 2.5	3
13	BRUSH SCREW M4 x 10	4	48	ROLL TOOL HOLDER	3
14	CARBON BRUSH 7 x 11 x 17 +33L+FLDNBI-110	2	49	INTERNAL CIRCLIP R-22	3
15	CARBON BRUSH HOLDER	2	50	WASHER Ø8.5 x Ø12 x 1	3
16	SCREW M4 x 10	1	51	NYLOCK NUT M8 x P1.25	3
17	FLAT WASHER Ø4 x Ø10 x 1	1	52	SCREW M6 x 10	4
18	PLASTIC WASHER Ø4 x Ø11 x 1	1	53	PLASTIC HOSE CLIP	1
19	PICKUP MAGNET Ø8 x Ø15 x 5	1	54	SPRING Ø1 x Ø30 x Ø32 x 280L x 23T	1
20	SPACER Ø8 x Ø12 x 10.5	1	55	VACCUUM HOSE	1
21	MOTOR HOUSING	1	56	CLAMP PIECE-RIGHT	1
22	STATOR	1	57	CLAMP PIECE-LEFT	1
22	STATOR	1	58	THUMB KNOB M5 x 16	1
23	STATOR SCREW M4 x 60	2	59	HOSE BRACKET-LOWER	1
24	BALL BEARING 608-2RU	7	60	HOSE BRACKET-UPPER	1
25	ARMATURE M1.22 x 5T(110V)	1	61	BAYONET SWIVEL CONNECTOR	1
25	ARMATURE M1.22 x 5T(220V)	1	62	PARALLEL GUIDE	1
26	BALL BEARING 6000-LLU T	1	63	WASHER Ø6 x Ø9.8 x 1	6
27	GEAR CASE	1	64	BALL BEARING 626-2RS(B)	3
28	SPINDLE LOCK BUTTON	1	65	AXLE BOLT	3
29	SPRING Ø0.9 x Ø10 x Ø11.8 x 13.5L x 4T	1	66	BAYONET ADAPTOR END	1
30	SPINDLE LOCK	1	67	CABLE STRAP 2.4 x 80mm	2/1000
31	SCREW M4 x 30	4	68	L-HEX KEY M5	1
32	NEEDLE BEARING HK0609	1	69	DUST CAP	3
33	BEVEL GEAR M1.22 x 38T	1	70	SPIRAL TORSION SPRING	2
34	SHROUD HOUSING	1			

