Multifunction Rotary Tool

RI170RT

170W Maximum Output

Variable Speed

INSTRUCTION MANUAL

Read through carefully and understand these instructions before use

■ INTRODUCTION

Your new Renegade Industrial Multifunction Roraty Tool will more than satisfy your expectations. It has been manufactured under stringent Renegade Industrial Quality Standards to meet superior performance criteria. You will find your new tool easy and safe to operate, and, with proper care, it will give you many years of dependable service.

■ SPECIFICATIONS

Item	Description
Input Voltage	230V - 240Vac/50Hz
Maximum Output	170 Watt
No Load Speed	8,000 - 35,000 rpm
Collet chuck capacity	Max Ø 2.3mm / Ø 3.2mm
Maximum Ø of accessory	35mm
Cord Length	2 metres
Tool Weight	0.7 kg

■ SAFETY INSTRUCTIONS

⚠ PLEASE READ & UNDERSTAND THESE INSTRUCTIONS! STORE THESE INSTRUCTIONS IN A SAFE PLACE!

GENERAL SAFETY RULES:

WARNING ⚠ READ ALL SAFETY WARNINGS AND ALL INSTRUCTIONS. FAILURE TO FOLLOW ALL INSTRUCTIONS LISTED IN THIS MANUAL MAY RESULT IN ELECTRIC SHOCK, FIRE &/OR SERIOUS INJURY. THE TERM 'POWER TOOL' IN ALL WARNINGS LISTED HERE REFERS TO YOUR MAINS OPERATED [CORDED] POWER TOOL OR BATTERY-OPERATED (CORDLESS) POWER TOOL.

• WORK AREA

a) Keep work area clean and well lit. Cluttered and 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.

• 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 a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

• 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, gloves, 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 jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery 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 these devices can reduce dust related hazards.

• 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 power tool plug from the power source and/or the battery pack 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 tools 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 and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. Use of the power tool for operations different from intended could result in a hazardous situation.
h) This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
i) Children should be supervised to ensure that they do not play with the appliance.

• 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.

■ ADDITIONAL SAFETY RULES FOR ROTARY TOOLS

- Fully unwind cable drum extensions to avoid potential overheating.
- When an extension cable is required, you must ensure that it has the right ampere rating for your power tool and is in safe electrical condition.
- If you are interrupted when operating the tool, complete the process and switch off before looking up.
- Periodically check that all nuts, bolts and other fixings are properly tightened.
- When the disc is installed, run it for at least one minute to ensure that it does not have a fault. It is always advisable to stay out of the line of the disc when testing or when using the tool.
- Do not use a disc marked with a lower RPM than that of the no load speed shown on the rating plate.
- Use discs only of the prescribed diameter.
- Do not secure the angle grinder in a vice or work bench and use it as a static grinder. It can lead to serious injury.
- Never apply excessive pressure to the disc. It might shatter causing personal injury.
- Ensure the work piece to be ground or cut, is held tight in the vice or other clamping system.
- Make sure that the disc is not in contact with the work when you start the grinder.
- Be careful not to damage the spindle or either of the disc flanges. Damage to these parts could result in disc breakage.
- Do not press the spindle lock button while the spindle is turning.
- Watch out for flying sparks. Hold the tool at an angle of approximately 15° to 30° to the work piece surface.

■ SAFETY INSTRUCTIONS FOR ALL OPERATIONS

⚠ SAFETY WARNINGS COMMON FOR GRINDING, ABRASIVE CUTTING-OFF OPERATIONS

a) This power tool is intended to function as a grinder, sander, wire brush, polisher or cut-off tool. 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 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 for 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 abrasive wheels for chips and cracks, backing pad for cracks, tear or excess wear, wire brush for loose or cracked wires. 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 filtrating 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 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 shock the operator.
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) N ever 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.
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 wood carving blade or a toothed saw blade. Such blades create frequent kickback and loss of control.

■ ADDITIONAL SAFETY INSTRUCTIONS FOR GRINDING AND CUT-OFF OPERATIONS

⚠ SAFETY WARNINGS SPECIFIC FOR GRINDING AND ABRASIVE CUT-OFF 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 operator from broken wheel fragments and accidental contact with wheel.
c) Wheels must be used only for recommended applications. For example: do not grind with the side of a 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.

■ SAFETY WARNINGS SPECIFIC FOR POLISHING OPERATIONS

a) Do not allow any loose portion of the polishing bonnet or its attachment strings to spin freely. Tuck away or trim any loose attachment strings. Loose and spinning attachment strings can entangle your fingers or snag on the workpiece.

■ ADDITIONAL SAFETY INSTRUCTIONS FOR CUT-OFF OPERATIONS

⚠ ADDITIONAL SAFETY WARNINGS SPECIFIC FOR ABRASIVE CUT-OFF OPERATIONS

a) Do not “jam” the cut-off wheel or apply excessive pressure. Do not attempt to make an excessive depth of cut. Over stressing the wheel increases the loading and susceptibility to twisting or binding of the wheel in the cut and the possibility of kickback or wheel breakage.
b) Do not position your body in line with and behind the rotating wheel. When the wheel, at the point of operation, is moving away from your body, the possible kickback may propel the spinning wheel and the power tool directly at you.
c) When wheel is binding or when interrupting a cut for any reason, switch off the power tool and hold the power tool motionless until the wheel comes to a complete stop. Never attempt to remove the cut-off wheel from the cut while the wheel is in motion otherwise kickback may occur. Investigate and take corrective action to eliminate the cause of wheel binding.
d) Do not restart the cutting operation in the workpiece. Let the wheel reach full speed and carefully re-enter the cut. The wheel may bind, walk up or kickback if the power tool is restarted in the workpiece.
e) Support panels or any oversized workpiece to minimize the risk of wheel pinching and kickback. Large workpieces tend to sag under their own weight. Supports must be placed under the workpiece near the line of cut and near the edge of the workpiece on both sides of the wheel.
f) Use extra caution when making a “pocket cut” into existing walls or other blind areas. The protruding wheel may cut gas or water pipes, electrical wiring or objects that can cause kickback.

■ ADDITIONAL SAFETY INSTRUCTIONS FOR WIRE BRUSHING OPERATIONS

⚠ SAFETY WARNINGS SPECIFIC FOR WIRE BRUSHING OPERATIONS

a) Be aware that wire bristles are thrown by the brush even during ordinary operation. Do not overstress the wires by applying excessive load to the brush. The wire bristles can easily penetrate light clothing and/or skin.

b) If the use of a guard is recommended for wire brushing. Do not allow any interference of the wire wheel or brush with the guard. Wire wheel or brush may expand in diameter due to work load and centrifugal forces.

WARNING ⚠ **WE RECOMMEND THE USE OF A RESIDUAL CURRENT DEVICE WITH A RESIDUAL CURRENT RATING OF 30MA OR LESS.**

■ IMPORTANT GENERAL SAFETY TIPS

1. The Power Tool should be unplugged when changing accessories.
2. If you stall the Power Tool, switch it off immediately.
3. Periodically check the tightness of your collet chuck, especially during prolonged use of the same accessory.
4. After use, always disconnect your power tool.
5. Do not undertake repair of the power tool yourself. This should be done at any autorised retail or repair outlet
6. Do not leave your tool unattended while switched on.
7. Do not use or store your tool in damp or wet conditions.

■ MULTIFUNCTION POWER TOOL USE

This rotary tool can be used for drilling, grinding, sanding and polishing, as well as engraving, cutting and removing rust in tight spaces or inaccessible places. The tool can be used on most metals, glass, wood and ceramics. For best performance and results keep the speed as even as possible without exercising too much pressure. As a guideline, use the tool at low speed for all large accessories, such as polishing for example, and at high speed for smaller accessories such as those used for engraving. For grinding and engraving, hold the tool as if it were a pen.

■ MULTIFUNCTION POWER TOOL START-UP

Never start up or stop the rotary tool if the accessory is in contact with the workpiece. Hold it firmly and press the "ON/OFF" switch. The tool will run continuously until the switch is turned to "OFF" position. The speed can be adjusted while the tool is running.

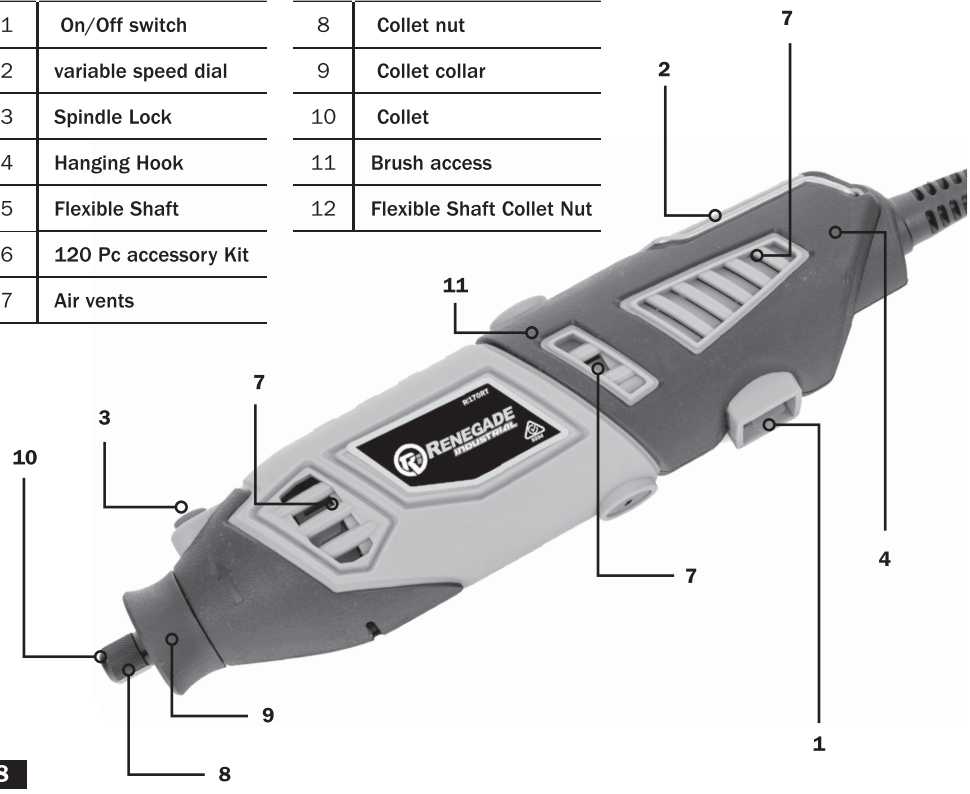
■ SPEED ADJUSTMENT

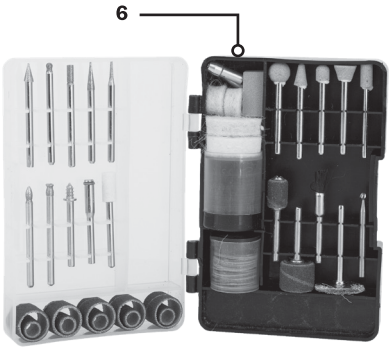
The multifunction rotary tool is equipped with speed control. Do not change the speed while the tool is working. The speed switch is located on the rear of the tool. Turn it to increase or reduce speed. Use the tool at low speed for polishing and similar operations, but use higher speed for drilling or cutting action.

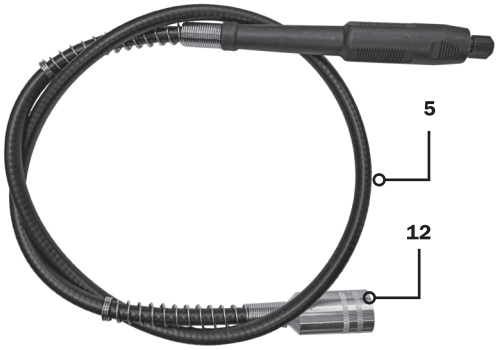
■ PARTS LIST

No.	Description
1	On/Off switch
2	variable speed dial
3	Spindle Lock
4	Hanging Hook
5	Flexible Shaft
6	120 Pc accessory Kit
7	Air vents

No.	Description
8	Collet nut
9	Collet collar
10	Collet
11	Brush access
12	Flexible Shaft Collet Nut





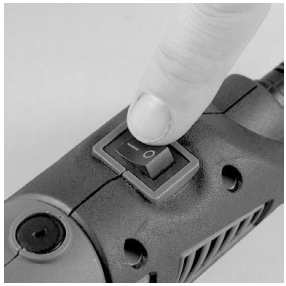


Accessory	Qty	Accessory Use
Sanding Paper	40	Sanding drums and sanding paper are perlect for detailed sanding jobs.
Sanding Drums	12	Sanding drums and sanding paper are perlect for detailed sanding jobs.
Cut Off Wheels	36	Cutting wheels let you cut, trim and shape metal, glass and ceramics.
Flex Shaft Key	1	Used to lock the flex shaft spindle to fasten accessories.
Bristle Brush	1	Usefful for cleaning silverware jewellery and antiques. Use with polishing compound for faster cleaning or polishing.
Spanner	1	For tightening & loosening the collet nut and screws on the sanding band and disc mandrel.
Grinding Wheels	5	Grinding wheels with shanks.
Diamond Bits	8	The perfect way to remove burs and sharpen tools.

Accessory	Qty	Accessory Use
Wire Brush	1	The steel wire brush is good for general purpose cleaning.
Grinding Wheel	1	Grinding wheels with shanks.
High Speed Drill Bits	3	Extrememly convenient way to drill holes with more detail and precision. (Ø2.3mm, Ø3.2mm, Ø1.5mm)
Dressing Stone 10x10x25mm	1	Ideal for cleaning and reshaping grinding wheels.
Felt Wheels	4	Ideal for polishing most metal surfaces and plastics. can be used with polishing compound.
Collet	2	For use with accessories. (Ø2.3mm & Ø3.2mm)
Sanding Shanks	2	For use with sanding drums.
Mandrel for cut off wheel	1	Use with sanding discs, grinding and cut off wheels.
Mandrel for felt wheel	1	Use with felt wheels and polishing pads.

■ OPERATION

Press the "ON" switch (1) The machine is now in continuous operation, and starts on the minimum speed. Press the switch (1) to the off postion to stop the tool.



■ VARYING THE SPEED

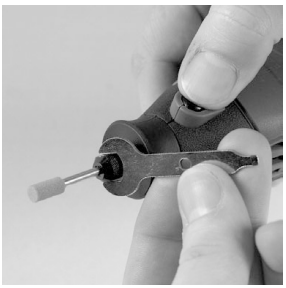
1. You can use the Variable Speed dial (2) to alter the speed of the tool. Rotate the dial to increase the speed, offering 6 different speed settings. To decrease the speed, rotate it the dial in the oposite direction.
2. Select the correct speed for the work and type of bit you are using. In general, lower speeds are best suited for large accessories and higher speeds are best suited for smaller accessories.

■ QUICK REFERENCE GUIDE

Operation	Speed
Cutting metal	5-6
Sanding wood	5-6
Cutting hard metal	5-6
Engraving metal	4-6
De-burring	4-6
Drilling holes	4-6
Removing rust	2-3
Sharpening	2-3
Polishing	1-2

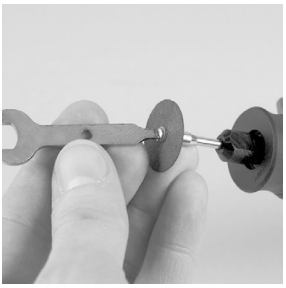
■ PLACING ACCESSORIES INTO THE TOOL

1. Always switch the tool "OFF" first. Hold the spindle locking button at the front of the tool down and undo the collet chuck (anti-clockwise).
2. Insert the collet that matches the shaft size of the accessory to be used.
3. Place the collet nut (8) over the collet and then insert the accessory shaft into the collet chuck ensuring maximum shaft contact.
4. Then tighten up the collet nut (8). (DO NOT USE PLIERS).



■ LOCATING A CUTTING /SANDING DISC

1. Locate an appropriate disc mandrel (holder) into the collet (9).
2. Remove the screw from the end of the disc mandrel with the 2-in-1 wrench by turning in an anti-clockwise direction.
3. Place a cutting / sanding disc onto the screw of the disc mandrel (placing one of the rubber washers provided with the disc mandrel on either side of the for protection).
4. Place the screw, with the disc onto the disc shaft and tighten with the 2-in-1 wrench by turning the screw in a clockwise direction (Do not over-tighten as the disc will crack).



■ USING THE FLEXIBLE SHAFT

Note: Never bend the flexible shaft with a radius of less than 150mm (6”) when operating. Please store the flexible shaft in the designated compartment of the carry case when not in use.

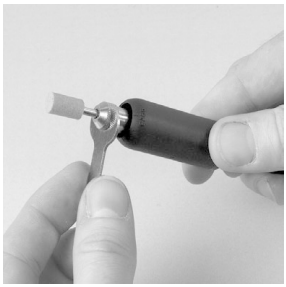
■ ATTACHING THE FLEXIBLE SHAFT

1. Remove the collet nut (8) from the rotary tool.
2. Push the inner cable of the flexible shaft (5) into the collet (10), upto the the stop on the cable.
3. Tighten the collet nut (8).
4. Tighten the flexible shaft collet nut (12) onto the rotary tool.




■ CHANGING THE COLLET AND ACCESSORIES ON THE FLEXIBLE SHAFT

Note. To change the collet or install a cutter or accessory into the flexible shaft, follow the same general procedure as covered earlier under ‘Changing accessories’.

WARNING ⚠ DO NOT ATTEMPT TO LOOSEN THE COLLET NUT OF THE FLEXIBLE SHAFT WITHOUT PULLING THE SPINDLE LOCK BACK AS FAR AS POSSIBLE. DAMAGE TO THE FLEXIBLE SHAFT WILL RESULT.

1. To lock the spindle lock, pull the lock back as far as possible.
2. Use the 2-in-1 wrench to loosen and tighten the collet nut.

■ USING THE WIRE HANG LOOP

Simply remove the wire hang loop from its holder to hang the tool for storage or you can hang it out of the way off the work surface whille in use.

■ USEFUL HINTS & TIPS

1. Your rotary tool will become warm after prolonged use and so must be switched off and allowed to cool down.
2. To ensure smooth running, the spindle should be oiled periodically.
3. Do not apply too much radial pressure to the accessory bits while polishing, cleaning, sanding or grinding. By doing this you will put a strain on the spindle and adversely affect the precision of the tool.
4. Always work with a sensitive touch so as not to impede the efficiency of your rotary tool.
5. When drilling metal, always mark the drilling point with a centre punch first, so that your rotary tool does not slip.
6. Always ensure that you have maximum contact between the accessory shaft and the collet chuck.
7. Vary the speed on the tool for the work in hand, eg. Low speed for polishing & cleaning and high speed for engraving.

■ MAINTENANCE

WARNING ⚠ WHEN SERVICING, USE ONLY IDENTICAL REPLACEMENT PARTS. THE USE OF ANY OTHER PART MAY CREATE A HAZARD OR CAUSE PRODUCT DAMAGE.
DO NOT USE SOLVENTS WHEN CLEANING PLASTIC PARTS. PLASTICS ARE SUSCEPTIBLE TO DAMAGE FROM VARIOUS TYPES OF COMMERCIAL SOLVENTS AND MAY BE DAMAGED BY THEIR USE. USE A CLEAN CLOTH TO REMOVE DIRT, DUST, OIL, GREASE ETC.

WARNING ⚠ DO NOT ALLOW BRAKE FLUIDS, GASOLINE, PETROLEUM-BASED PRODUCTS, PENETRATING OILS, ETC. TO COME INTO CONTACT WITH PLASTIC PARTS. THEY CONTAIN CHEMICALS THAT CAN DAMAGE, WEAKEN OR DESTROY PLASTIC.
DO NOT ABUSE POWER TOOLS. ABUSIVE PRACTICES CAN DAMAGE THE TOOL AND THE WORKPIECE.

WARNING ⚠ DO NOT ATTEMPT TO MODIFY TOOLS OR CREATE ACCESSORIES. ANY SUCH ALTERATION OR MODIFICATION IS MISUSE AND COULD RESULT IN A HAZARDOUS CONDITION LEADING TO POSSIBLE SERIOUS INJURY. IT WILL ALSO VOID THE WARRANTY.

■ LUBRICATION

All of the bearings in this tool are lubricated with a sufficient amount of high-grade lubricant for the life of the unit under normal conditions. Therefore, no further lubrication is required.

■ NOTES

■ NOTES

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