

Rotary Tool

INSTRUCTION MANUAL



Specifications

Voltage: 230-240V ~ 50Hz

Rated input: 135 W

No load speed: 8000-33000 min⁻¹

Collet size: $\varnothing 1.6\text{mm}$, $\varnothing 2.4\text{mm}$, $\varnothing 3.2\text{mm}$



Wear hearing protection. Wear eye protection. Wear respiratory protection.



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.



Double insulated for additional protection.



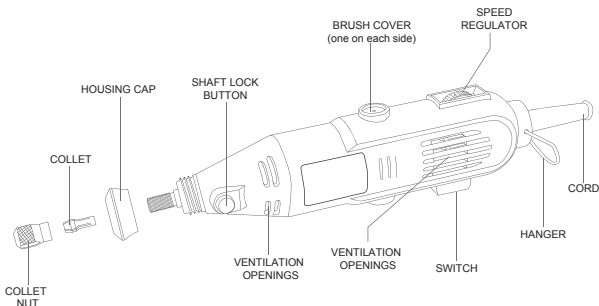
Conforms to relevant safety standards.



Read the instruction manual.

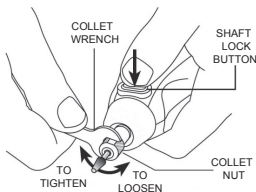
1.-Functional Description and Specifications

⚠ WARNING Disconnect the plug from the power source before making any assembly, adjustments or changing accessories. Such preventive safety measures reduce the risk of starting the tool accidentally.



2.-Assembly

⚠ WARNING Always unplug Rotary Tool before changing accessories, changing collets or servicing your Rotary Tool.



COLLET NUT— To loosen, first press shaft lock button and rotate the shaft by hand until the lock engages the shaft preventing further rotation.

⚠ CAUTION Do not engage lock while the Rotary Tool is running.

With the shaft lock engaged use the collet wrench to loosen the collet nut if necessary. The collet nut must be loosely threaded on when inserting an accessory. Change accessories by inserting the new one into the collet as far as possible to minimize runout and unbalance. With the shaft

lock engaged, finger tighten the collet nut until the accessory shank is gripped by the collet. Avoid excessive tightening of the collet nut when there is no bit inserted.

COLLETS — Three different size collets (see illustration), to accommodate different shank sizes, are available for your Rotary Tool. To install a different collet, remove the collet nut and remove the old collet. Insert the unslotted end of the collet in the hole in the end of the tool shaft. Replace collet nut on the shaft.

Always use the collet which matches the shank size of the accessory you plan to use. Never

⚠ CAUTION force a larger diameter shank into a collet.

Note: Most rotary tool kits do not include all four collets sizes.

COLLET IDENTIFICATION CHART

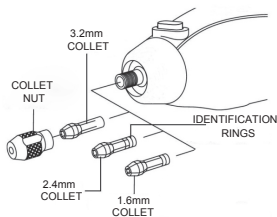
Collet sizes can be identified by the rings on the back end of collet.

1.6mm Collet has two (2) rings.

2.4mm Collet has three (3) rings.

3.2mm Collet has no rings.

(Included in most tool kits on the tool)



BALANCING ACCESSORIES — For precision work, it is important that all accessories be in good balance (much the same as the tires on your automobile). To true up or balance an accessory, slightly loosen collet nut and give the accessory or collet a 1/4 turn. Re tighten collet nut and run the Rotary Tool. You should be able to tell by the sound and feel if your accessory is running in balance. Continue adjusting in this fashion until best balance is achieved. To maintain balance on abrasive wheel points, before each use, with the wheel point secured in the collet, turn on the Rotary Tool and run the Dressing Stone lightly against the revolving wheel point. This removes high spots and trues up the wheel point for good balance.

The hanger is provided for the use of hanging your tool while using the flex-shaft or for storage. If you do not use the hanger, remove it from the tool and snap it back into place underneath the cord so it will be out of the way while the tool is in use.

3.-Operating Instructions

The Rotary Tool is a handful of high-speed power. It serves as a carver, grinder, polisher, sander, cutter, power brush, drill and more.

The Rotary Tool has a small, powerful electric universal motor, is comfortable able in the hand, and is made to accept a large variety of accessories including abrasive wheels, drill bits, wire brushes, polishers, engraving cutters, router bits, cutting wheels and attachments. Accessories come in a variety of shapes and permit you to do a number of different jobs. As you become familiar with the range of accessories and their uses, you will learn just how versatile the Rotary Tool is. You'll see dozens of uses you hadn't thought of before.

The real secret of the Rotary Tool is its speed. To understand the advantages of its high speed, you have to know that the standard portable electric drill runs at speeds up to 8,000 revolutions per minute. The Rotary Tool operates at speeds up to 33,000 revolutions per minute. The typical electric drill is a lowspeed, high torque tool; the Rotary Tool is the opposite — a high-speed, low torque tool. The major difference to the user is that in the high speed tools, the speed combined with the accessory

mounted in the collet does the work. You don't apply pressure to the tool, but simply hold and guide it. In the low speed tools, you not only guide the tool, but also apply pressure to it, as you do, for example, when drilling a hole.

It is this high speed, along with its compact size and wide variety of special accessories and attachments, that makes the Rotary Tool differ from other tools. The speed enables it to do jobs low speed tools cannot do, such as cutting hardened steel, engraving glass, etc.

Getting the most out of your Rotary Tool is a matter of learning how to let this speed work for you.

Using the Rotary Tool

The first step in learning to use the Rotary Tool is to get the "feel" of it. Hold it in your hand and feel its weight and balance. Feel the taper of the housing. This taper permits the Rotary Tool to be grasped much like a pen or pencil.

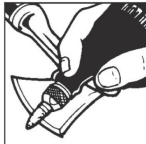
Always hold the tool away from your face. Accessories can be damaged during handling, and can fly apart as they come up to speed. This is not common, but it does happen.

Practice on scrap materials first to see how the Rotary Tool's high speed action performs. Keep in mind that the work is done by the speed of the tool and by the accessory in the collet. You should not lean on or push the tool during use.

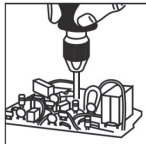
Instead, lower the spinning accessory lightly to the work and allow it to touch the point at which you want cutting (or sanding or etching, etc.) to begin. Concentrate on guiding the tool over the work using very little pressure from your hand. Allow the accessory to do the work.

Usually, it is best to make a series of passes with the tool rather than attempt to do all the work in one pass. To make a cut, for example, pass the tool back and forth over the work, much as you would a small paint brush. Cut a little material on each pass until you reach the desired depth. For most work, the gentle touch is best. With it, you have the best control, are less likely to make errors, and will get the most efficient work out of the accessory.

For best control in close work, grip the Rotary Tool like a pencil between your thumb and forefinger.

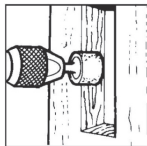


Sharpen Tools



Drilling

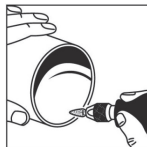
CAUTION Whenever you hold the tool, be careful not to cover the air vents with your hand. This blocks the air flow and causes the motor to overheat.



Shape Wood



Carve Wood



Debur Metal



Cut Metal

Wear Eye Protection



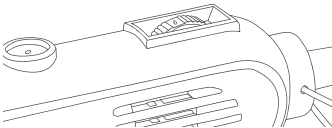
4.-Operating Speeds

To select the right speed for each job, use a practice piece of material.

NOTE: Speed is affected by voltage changes. A reduced incoming voltage will slow the RPM of the tool.

On the two-speed model, there is a LO and HI switch. When the switch indicator is on the low setting, the tool runs at about 8,000 RPM. When the switch indicator is on the high setting, the tool runs at about 33,000 RPM.

The speed of Rotary Tool is controlled by setting this indicator on the housing.



Needs for Slower Speeds

Certain materials, however, (some plastics and precious metals, for example) require a relatively slow speed because at high speed the friction of the accessory generates heat and may cause damage to the material.

Slow speeds (8,000 RPM) usually are best for polishing

operations employing the felt polishing accessories. They may also be best for working on delicate projects as "eggery" work, delicate wood carving and fragile model parts. (All brushing applications require lower speeds to avoid wire discharge from the holder.)

Higher speeds are better for carving, cutting, routing, shaping, cutting dadoes or rabbets in wood.

Hardwoods, metals and glass require high speed operation, and drilling should also be done at high speeds.

Ultimately, the best way to determine the correct speed for work on any material is to practice for a few minutes on a piece of scrap, even after referring to the chart. You can quickly learn that a slower or faster speed is more effective just by observing what happens as you make a pass or two at different speeds. When working with plastic, for example, start at a slow rate of speed and increase the speed until you observe that the plastic is melting at the point of contact. Then reduce the speed slightly to get the optimum working speed.

Some rules of thumb in regard to speed:

1. Plastic and other materials that melt at low temperatures should be cut at low speeds.
2. Polishing, buffing and cleaning with any type of bristle brush must be done at speeds not greater than 8,000 RPM to prevent damage to the brush.
3. Wood should be cut at high speed.
4. Iron or steel should be cut at low speed.
5. Aluminum, copper alloys, lead alloys, zinc alloys and tin may be cut at various speeds, depending on the type of cutting being done. Use paraffin or other suitable lubricant on the cutter to prevent the cut material from adhering to the cutter teeth.

Increasing the pressure on the tool is not the answer when it is not performing as you think it should. Perhaps you should be using a different accessory, and perhaps an adjustment in speed would solve the problem. Leaning on the tool does not help.

Let speed do the work!

5.- Maintenance Information

Service



WARNING Preventive maintenance performed by unauthorized personnel may result in misplacing of internal wires and components which could cause serious hazard. We recommend that all tool service be performed by a STAYER authorized service.



WARNING To avoid injury from unexpected starting or electrical shock, always remove plug from wall outlet before performing service or cleaning.

CARBON BRUSHES

The brushes and commutator in your tool have been engineered for many hours of dependable service.

In order to prepare your brushes for use, run your tool at full speed for 5 minutes under no load. This will properly "seat" your brushes, which extends the life of both your brushes and your tool.

To maintain peak efficiency of the motor, we recommend every 40 - 50 hours the brushes be examined. Only original replacement brushes specially designed for your tool should be used.

MAINTENANCE OF REPLACEABLE BRUSHES

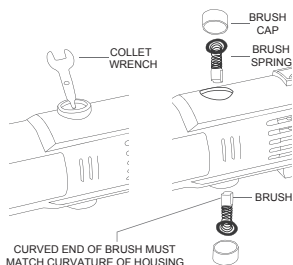
The brushes should be inspected frequently when tools are used continuously. If your tool runs sporadically, loses power, makes unusual noises or runs at a reduced speed, check the brushes.

CAUTION To continue using the tool in this condition will permanently damage your tool.

Siga estos pasos para revisar/cambiar las escobillas de la herramienta rotatoria.

Follow these steps to check/change the rotary tool brushes:

1. With the power cord unplugged, place the tool on a clean surface. Use the tool wrench as a screwdriver to remove the brush caps in a counter-clockwise direction.
2. Remove the brushes from the tool by pulling on the spring that is attached to the carbon brush. If the brush is less than 1/8" long and the end surface of the brush that contacts the commutator is rough and/or pitted, they should be replaced. Check both brushes.



Usually the brushes will not wear out simultaneously. If one brush is worn out, replace both brushes. Make sure the brushes are installed as illustrated. The curved surface of the brush must match the curvature of the commutator.

3. After replacing brushes the tool should be run at no-load; place it on a clean surface and run it freely at full speed for 5 minutes before loading (or using) the tool. This will allow the brushes to "seat" properly and will give you more hours of life from each set of brushes. This will also extend the total life of your tool since the commutator surface will "wear" longer.

BEARINGS

This model features a double ball bearing construction. Under normal use they will not require lubrication.

Cleaning

WARNING To avoid accidents always disconnect the tool from the power supply before cleaning or performing any maintenance. The tool may be cleaned most effectively with compressed dry air. Always wear safety goggles when cleaning tools with compressed air.

Ventilation openings and switch levers must be kept clean and free of foreign matter. Do not attempt to clean by inserting pointed objects through openings.

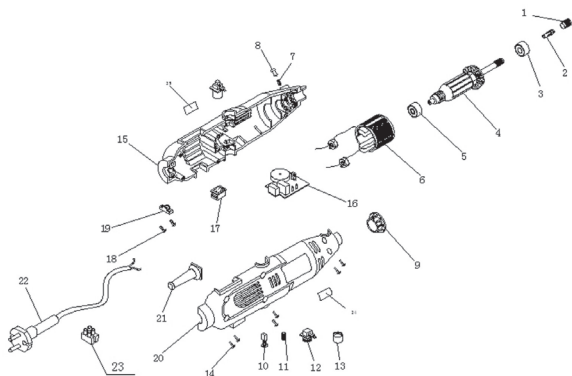
CAUTION Certain cleaning agents and solvents damage plastic parts. Some of these are: gasoline, carbon tetrachloride, chlorinated cleaning solvents, ammonia and household detergents that contain ammonia.

Environmental protection



CAUTION!

Electrical products must not be thrown out with domestic waste. They must be taken to a communal collecting point for environmentally friendly disposal in accordance with local regulations. Contact your local authorities or stockist for advice on recycling.



No.	Qty	Description
1	1	COLLET NUT
2	1	BRASS COLLET
3	1	BEARING 626zz
4	1	ROTOR
5	1	BEARING 698zz
6	1	STATOR
7	1	PREVENT SPRING
8	1	SPINDLE LOCK BUTTON
9	1	LOCKING SLEEVE
10	2	BRUSH
11	2	BRUSH SPRING
12	2	BRUSH BASE
13	2	BRUSH CAP
14	6	SCREW
15	1	RIGHT HOUSING
16	1	CIRCUIT BOARD
17	1	SWITCH
18	2	SCREW
19	1	PLACE BOARD
20	1	LEFT HOUSING
21	1	CORD SLEEVE
22	1	POWER CORD
23	1	TERMINAL BLOCK