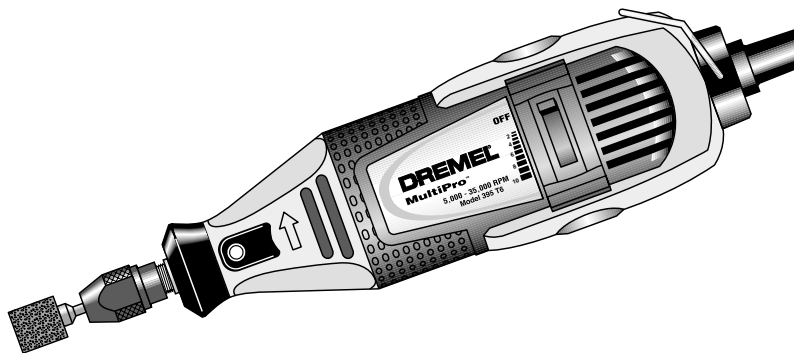


# **DREMEL® MultiPro™** **Rotary Tool Owner's Manual**

**Models 275T6 (F013027503)**  
**285T6 (F013028503)**  
**395T6 (F013039504)**

**HONESTLY NOW ... Have you read  
this OWNER'S MANUAL?**



- Safety
- Assembly
- Operation
- Maintenance
- Attachment Information
- Accessory Information
- Warranty
- Service Parts

**Parlez-vous français?  
Voir page 27**

**¿Habla español?  
Vea página 55**

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# Power Tool Safety Rules



## WARNING

Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

### SAVE THESE INSTRUCTIONS

## Work Area

Keep your work area clean and well lit. Cluttered benches and dark areas invite accidents.

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.

Keep by-standers, children, and visitors away while operating a power tool. Distractions can cause you to lose control.

## Electrical Safety

Double Insulated tools are equipped with a polarized plug (one blade is wider than the other.) This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way. Double Insulation  eliminates the need for the three wire grounded power cord and grounded power supply system. Before plugging in the tool, be certain the outlet voltage supplied is within the voltage marked on the nameplate. Do not use "AC only" rated tools with a DC power supply.

Avoid body contact with grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded. If operating the power tool in damp locations is unavoidable, a Ground Fault Circuit Interrupter must be used to supply the power to your tool. Electrician's rubber gloves and footwear will further enhance your personal safety.

Don't expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.

Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock.

When operating a power tool outside, use an outdoor extension cord marked "W-A" or "W." These cords are rated for outdoor use and reduce the risk of electric shock. Refer to "Recommended sizes of Extension Cords" in the Accessory section of this manual.

## Personal Safety

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

power tools may result in serious personal injury.

Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts. Keep handles dry, clean and free from oil and grease.

Avoid accidental starting. Be sure switch is "OFF" before plugging in. Carrying tools with your finger on the switch or plugging in tools that have the switch "ON" invites accidents.

Remove adjusting keys or wrenches before turning the tool "ON". A wrench or a key that is left attached to a rotating part of the tool may result in personal injury.

Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.

Use safety equipment. Always wear eye protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions.

## Tool Use and Care

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.

Do not force tool. Use the correct tool for your application. The correct tool will do the job better and safer at the rate for which it is designed.

Do not use tool if switch does not turn it "ON" or "OFF". Any tool that cannot be controlled with the switch is dangerous and must be repaired.

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

Store idle tools out of reach of children and other untrained persons. Tools are dangerous in the hands of untrained users.

Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools, with sharp cutting edges are less likely to bind and are easier to control. Any alteration or modification is a misuse and may result in a dangerous condition.

Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools. Develop a periodic maintenance schedule for your tool.

Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for one tool, may become hazardous when used on another tool.

## Service

Tool service must be performed only by qualified repair personnel. Service or maintenance performed by unqualified personnel could result in a risk of injury. For example: internal wires may be misplaced or pinched, safety guard return springs may be improperly mounted.

When servicing a tool, use only identical replacement parts. Follow instructions in the Maintenance section of this manual. Use of unauthorized parts or failure to follow Maintenance Instructions may create a risk of electric shock or injury. Certain cleaning agents such as gasoline, carbon tetrachloride, ammonia, etc. may damage plastic parts.

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# Safety Rules for Rotary Tools

Accessories must be rated for at least the speed recommended on the tool warning label. Wheels and other accessories running over rated speed can fly apart and cause injury.

Hold tool by insulated gripping surfaces when performing an operation where the cutting tool may contact hidden wiring or its own cord. Contact with a "live" wire will make exposed metal parts of the tool "live" and shock the operator. If cutting into existing walls or other blind areas where electrical wiring may exist is unavoidable, disconnect all fuses or circuit breakers feeding this worksite.

Do not operate the flexible shaft with a sharp bend. Over bending the shaft can generate excessive heat on the jacket or hand piece. The recommended minimum is 6" radius.

Always disconnect the power cord from the power source before making any adjustments or attaching any accessories. You may unexpectedly cause the tool to start leading to serious personal injury.

Be aware of the switch location, when placing the tool down or when picking the tool up. You may accidentally activate the switch.

Always hold the hand piece firmly in your hands during the start-up. The reaction torque of the motor, as it accelerates to full speed, can cause the shaft to twist.

Always wear safety goggles and dust mask. Use only in well ventilated area. Using personal safety devices and working in safe environment reduces risk of injury.

After changing the bits or making any adjustments, make sure the collet nut and any other adjustment devices are securely tightened. Loose adjustment device can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown.

Do not reach in the area of the spinning bit. The proximity of the spinning bit to your hand may not always be obvious.

Allow brushes to run at operating speed for at least one minute before using wheel. During this time no one is to stand in front or in line with the brush. Loose bristles or wires will be discharged during the run-in time.

Wire and bristle brushes must never be operated at speeds greater than 15,000/min. Direct the discharge of the spinning wire brush away from you. Small particles and tiny wire fragments may be discharged at high velocity during the "cleaning" action with these brushes and may become imbedded in your skin. Bristles or wires will be discharged from the brush at high speeds.

Wear protective gloves and face shield with wire or bristle brushes. Apply wire or bristle brushes lightly to the work as only the tips of the wire/bristles do the work. "Heavy" pressure on bristles will cause the wire or bristle to become overstressed, resulting in a wiping action and will cause the bristles/wire to be discharged.

Carefully handle both the tool and individual grinding wheels to avoid chipping or cracking. Install a new wheel if tool is dropped while grinding. Do not use a wheel that may be damaged. Fragments from a wheel that bursts during operation will fly away at great velocity possibly striking you or bystanders.

Never use dull or damaged bits. Sharp bits must be handled with care. Damaged bits can snap during use. Dull bits require more force to push the tool, possibly causing the bit to break.

Use clamps to support workpiece whenever practical. Never hold a small workpiece in one hand and the tool in the other hand while in use. Allow for sufficient space, at least 6", between your hand and the spinning bit. Round material such as dowel rods, pipes or tubing have a tendency to roll while being cut, and may cause the bit to "bite" or jump toward you. Clamping a small workpiece allows you to use both hands to control the tool.

# Safety Rules for Rotary Tools - (cont.)

**Inspect your workpiece before cutting.** When cutting irregularly shaped workpieces, plan your work so it will not slip and pinch the bit and be torn from your hand. For example, if carving wood, make sure there are no nails or foreign objects in the workpiece. Nails or foreign objects can cause the bit to jump.

**Never start the tool when the bit is engaged in the material.** The bit cutting edge may grab the material causing loss of control of the cutter.

**Avoid bouncing and snagging the wheel, especially when working corners, sharp edges etc.** This can cause loss of control and kick-back.

**The direction of feed with the bit into the material when carving, routing or cutting is very important. Always feed the bit into the material in the same direction as the cutting edge is exiting from the material (which is the same direction as the chips are thrown).** Feeding the tool in the wrong direction, causes the cutting edge of the bit to climb out of the work and pull the tool in the direction of this feed.

**If the workpiece or bit becomes jammed or bogged down, turn the tool "OFF" by the switch. Wait for all moving parts to stop and unplug the tool, then work to free the jammed material.** If the switch to the tool is left "ON" the tool could restart unexpectedly causing serious personal injury.

**Do not leave a running tool unattended, turn power off.** Only when tool comes to a complete stop it is safe to put it down.

**Do not grind or sand near flammable materials.** Sparks from the wheel could ignite these materials.

**Do not touch the bit or collet after use.** After use the bit and collet are too hot to be touched by bare hands.

**Regularly clean the tool's air vents by compressed air.** Excessive accumulation of powdered metal inside the motor housing may cause electrical failures.

**Do not allow familiarity gained from frequent use of your rotary tool to become commonplace.** Always remember that a careless fraction of a second is sufficient to inflict severe injury.

**Do not alter or misuse tool.** Any alteration or modification is a misuse and may result in serious personal injury.

**This product is not intended for use as a dental drill, in human or veterinary medical applications.** Serious personal injury may result.

**When using the steel saws, cutoff wheels, high speed cutters or tungsten carbide cutters, always have the work securely clamped. Never attempt to hold the work with one hand while using any of these accessories.** The reason is that these wheels will grab if they become slightly canted in the groove, and can kickback causing loss of control resulting in serious injury. Your second hand should be used to steady and guide the hand holding the tool. When a cutoff wheel grabs, the wheel itself usually breaks. When the steel saw, high speed cutters or tungsten carbide cutter grab, it may jump from the groove and you could lose control of the tool.












**WARNING** 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, and
- 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, such as those dust masks that are specially designed to filter out microscopic particles.

# Symbols

**IMPORTANT:** Some of the following symbols may be used on your tool. Please study them and learn their meaning. Proper interpretation of these symbols will allow you to operate the tool better and safer.

Symbol	Name	Designation/Explanation
V	Volts	Voltage (potential)
A	Amperes	Current
Hz	Hertz	Frequency (cycles per second)
W	Watt	Power
kg	Kilograms	Weight
min	Minutes	Time
s	Seconds	Time
∅	Diameter	Size of drill bits, grinding wheels, etc.
$n_0$	No load speed	Rotational speed, at no load
.../min	Revolutions or reciprocation per minute	Revolutions, strokes, surface speed, orbits etc. per minute
0	Off position	Zero speed, zero torque...
1, 2, 3, ... I, II, III,	Selector settings	Speed, torque or position settings. Higher number means greater speed
	Infinitely variable selector with off	Speed is increasing from 0 setting
	Arrow	Action in the direction of arrow
	Alternating current	Type or a characteristic of current
	Direct current	Type or a characteristic of current
	Alternating or direct current	Type or a characteristic of current
	Class II construction	Designates Double Insulated Construction tools.
	Earthing terminal	Grounding terminal
	Warning symbol	Alerts user to warning messages
	Ni-Cad RBRC seal	Designates Ni-Cad battery recycling program



This symbol designates that this tool is listed by Underwriters Laboratories.



This symbol designates that this tool is listed to Canadian Standards by Underwriters Laboratories.



This symbol designates that this tool complies to NOM Mexican Standards.



This symbol designates that this tool is listed by the Canadian Standards Association.

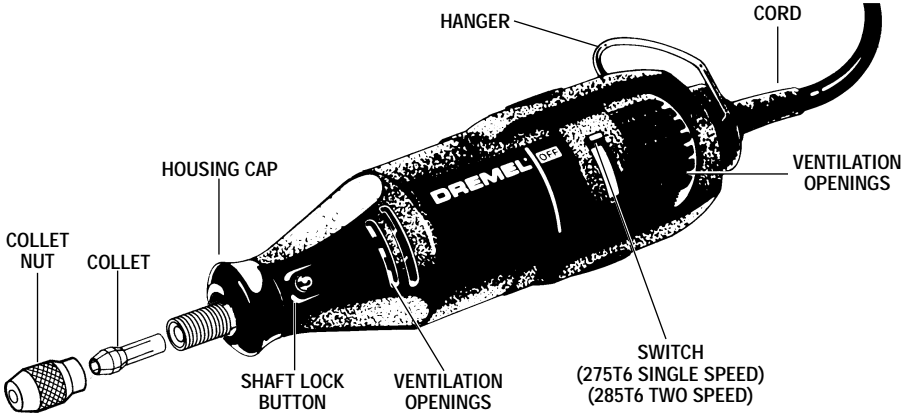


This symbol designates that this tool is listed by Underwriters Laboratories, and listed to Canadian Standards by Underwriters Laboratories.

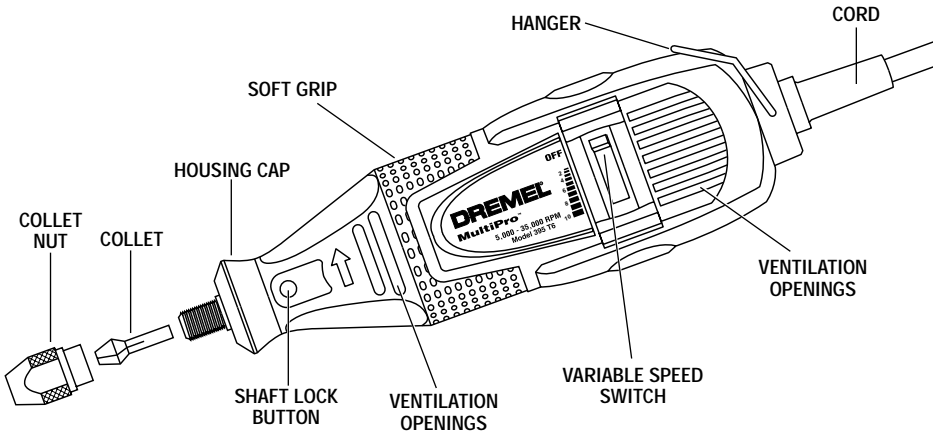
# Functional Description and Specifications

**⚠ 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.

## Rotary Tool 275T6 & 285T6

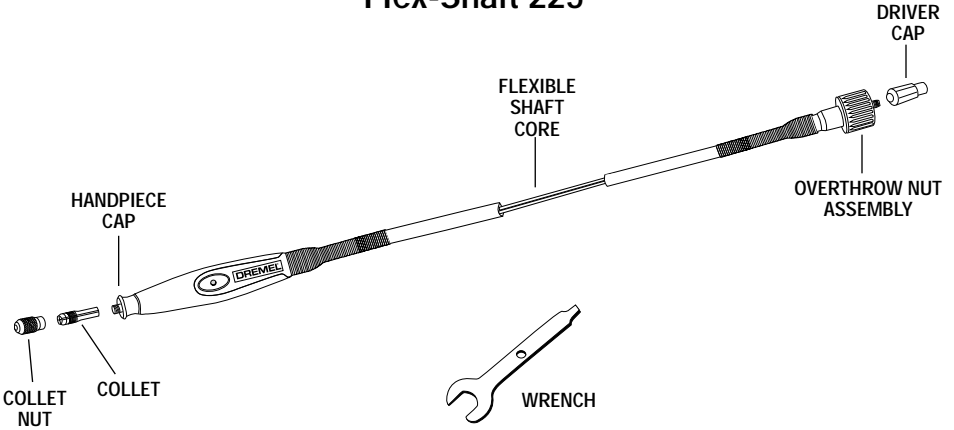


## Rotary Tool 395T6

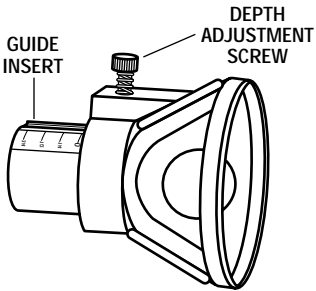


Model number	275T6	285T6	395T6
Voltage rating	120V ~ 50 - 60Hz	120V ~ 50 - 60Hz	120V ~ 50 - 60Hz
Amperage rating	1.15A	HI 1.15A, LO 0.80A	1.15A
No load speed	n <sub>0</sub> 35,000/min	n <sub>0</sub> 15,000/35,000/min	n <sub>0</sub> 5,000-35,000/min
Collet capacities	1/32, 1/16", 3/32", 1/8"	1/32, 1/16", 3/32", 1/8"	1/32, 1/16", 3/32", 1/8"

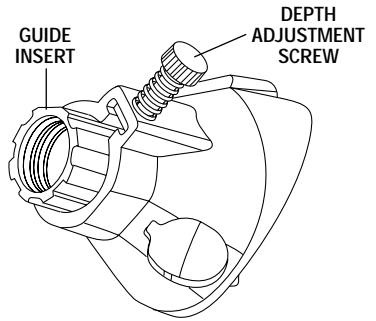
# Flex-Shaft 225



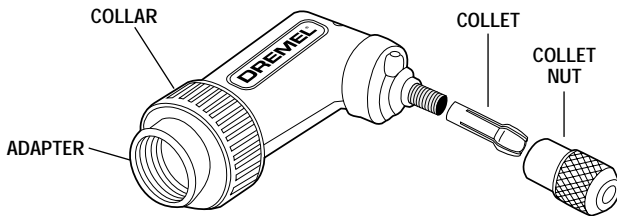
# Cutting Guide 565



# Grout Removal Kit 568

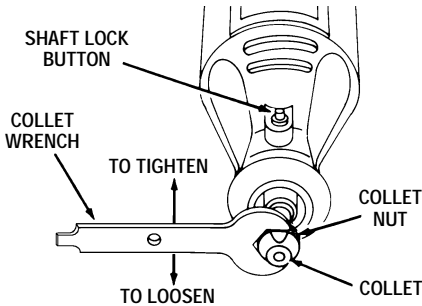


# Right Angle Attachment 575



# Assembly

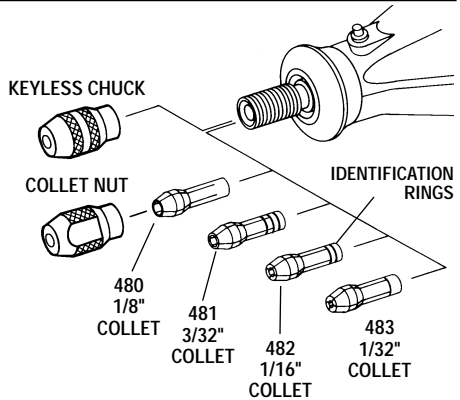
**⚠ WARNING** Always unplug Rotary Tool before changing accessories, changing collets or servicing your Rotary Tool.



## COLLET IDENTIFICATION CHART

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

- 1/32" Collet has one (1) ring.
- 1/16" Collet has two (2) rings.
- 3/32" Collet has three (3) rings.
- 1/8" Collet has no rings.



**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** — Four 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.

**⚠ CAUTION** Always use the collet which matches the shank size of the accessory you plan to use. Never force a larger diameter shank into a collet.

**Note:** Some rotary tool kits may not include all four collets sizes.

**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. Retighten 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 415 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.

## DREMEL KEYLESS CHUCK

**⚠ CAUTION** Use only with black chuck #4486. Other chucks may not allow accessory bit to be tightened fully.

The keyless chuck holds various accessories with shank sizes 1/32" to 1/8" and is intended for light duty accessories such as drill bits, sanding drums, polishing accessories, wire and bristle brushes and cut-off wheels. The keyless chuck allows you to change accessories frequently, quickly and easily. There are some applications which can generate high forces on the bit or if you are unable to generate finger tightening pressure sufficient to secure the bit you must use the supplied wrench to assist in securing the bit.

## Attaching the Keyless Chuck and Accessory Bit

**⚠ WARNING** Read and understand the manual for use of the keyless chuck with the tool. Insert and securely tighten the shank of the accessory well within the jaws of the chuck. If an accessory is not properly gripped within



the jaws of a chuck it may loosen and fly out during use possibly striking you or bystanders.

To replace or attach the keyless chuck accessory to your MultiPro rotary tool, unplug the tool and engage the shaft lock button then remove the collet and collet nut. Thread the keyless chuck on the end of the shaft. Engage the shaft lock button again, insert the accessory shank into the chuck and finger tighten until the shank is secure.

For small size drill bits, close the chuck to the point where the bit will just fit in; then tighten securely. This helps center the bit in the keyless chuck correctly. In some high force applications such as removing metal, tile cutting or routing, the bit (tungsten carbide cutters, high speed cutters, router bits or tile cutters) and chuck will become hot if overloaded for extended

periods of time. Overloading the chuck may cause the bit to loosen and slip. It is recommended that in these types of applications that the bit be secured in the chuck with the supplied wrench and work in intervals to allow cooling of the bit and chuck. If the bit slips the tool will begin to vibrate excessively, this is an indication that you should shut the tool off, reposition and tighten the bit then allow the tool to run no-load for a few minutes to cool.

The chuck should be cleaned occasionally to keep it functioning properly. Simply remove the chuck from the tool and gently tap the tip of the chuck on a fat surface to remove any loose debris. In some applications the keyless chuck may tighten up during use. If this occurs, gently loosen using the wrench included in your rotary tool kit.

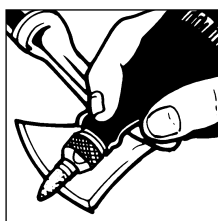
## Operating Instructions

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

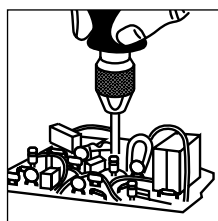
The Rotary Tool has a small, powerful electric universal motor, is comfortable in the hand, and is made to accept a large variety of accessories including abrasive wheels, drill bits, wire brushes, polishers, engraving cutters, router bits, cutting wheels and attachments. Accessories come in a variety 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 2,800 revolutions per minute. The Rotary Tool operates at speeds up to 35,000 revolutions per minute. The typical electric drill is a low-speed, high torque tool; the Rotary Tool is just 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.

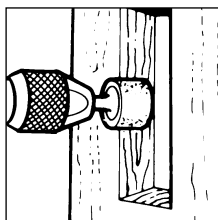
It is this high speed, along with its compact size and wide variety of special accessories and attachments, that makes the Rotary Tool different from other tools. The speed enables it to do jobs low speed tools cannot do, such as cutting hardened steel, engraving glass, etc.



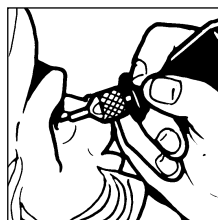
Sharpen Tools



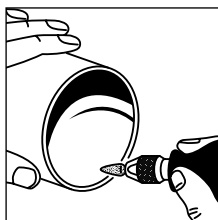
Drilling



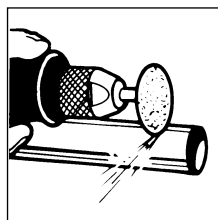
Shape Wood



Carve Wood



Deburr Metal



Cut Metal

Getting the most out of your Rotary Tool is a matter of learning how to let this speed work for you. To learn about more uses and the versatility of Dremel accessories and attachments refer to this Owner's Manual or Dremel's "Getting Started" booklet.

# Operating Instructions - (Cont.)

## 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. The 395T6 Variable Speed tool has a unique comfort grip on the nose and back seating, which allows the user added comfort and control during use. You can feel the difference!

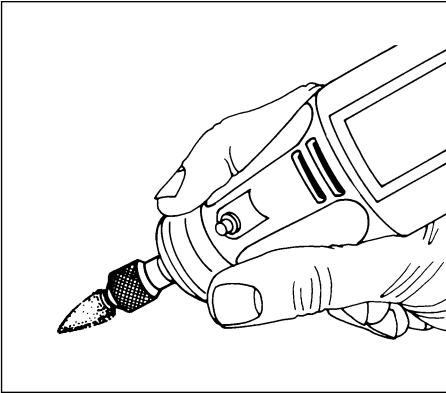
Always hold the tool away from your face. Accessories can be damaged during handling, and can fly apart as they come up to speed. This is not common, but it does happen.

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.

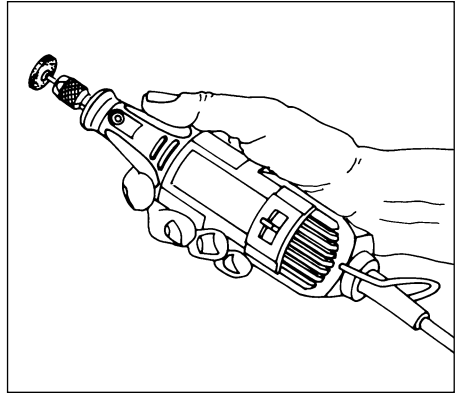
Instead, lower the spinning accessory lightly to the work and allow it to touch the point at which you want cutting (or sanding or etching, etc.) to begin. Concentrate on guiding the tool over the work using very little pressure from your hand. Allow the accessory to do the work.

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.

**Questions or Problems? Call 1-800-437-3635**  
or check our website at [www.Dremel.com](http://www.Dremel.com)



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



The “Golf Grip” method of holding the tool is used for more aggressive operations such as grinding a flat surface or using cutoff wheels.



**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.

# Operating Speeds

Set the speed indicator to fit the job; to achieve the best job results when working with different materials, the speed of the Rotary Tool should be regulated. Only a full wave output speed control such as the Dremel Model 221 should be used with the 275T6 Rotary Tool.

To select the right speed for each job, use a practice piece of material. Vary speed to find the best speed for the accessory you are using and the job to be done.

**NOTE:** Speed is affected by voltage changes. A reduced incoming voltage will slow the RPM of the tool, especially at the lowest setting. If your tool appears to be running slowly increase the speed setting accordingly. The tool may not start at switch position #1 in those areas where outlet voltage is less than 120 volts. Simply move the switch lever to a higher position to begin operation.

There are three basic types of Rotary Tools: single speed, two-speed and variable speed models.

On the single speed model, there is an ON-OFF switch. When the switch is on, the tool runs at 35,000 RPM.

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 15,000 RPM. When the switch indicator is on the high setting, the tool runs at about 35,000 RPM.

On the variable speed model, there are switch setting indicators marked with a line. Slide the number on the housing to select the operating speed needed from 5,000 – 35,000 RPM. **You can refer to the charts on page 24, 25, and 26 to determine the proper speed, based on the material being worked and the type of accessory being used. These charts enable you to select both the correct accessory and the optimum speed at a glance.**

If you have a single-speed or two-speed model, you will be able to use many accessories to do a wide assortment of jobs. For the majority of applications, all models of the Rotary Tool should be used at top speed.

## 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 (15,000 RPM or less) 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.) No greater than speed setting 4 for the model 395-T6.

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.

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



The Settings for Approximate Revolutions Per Minute Rotary Tool Variable Speed Model 395T6.

Switch Setting	Speed Range
2	5,000 – 8,000 RPM
4*	9,000 – 11,000 RPM
6	12,000 – 17,000 RPM
8	18,000 – 24,000 RPM
10	25,000 – 35,000 RPM

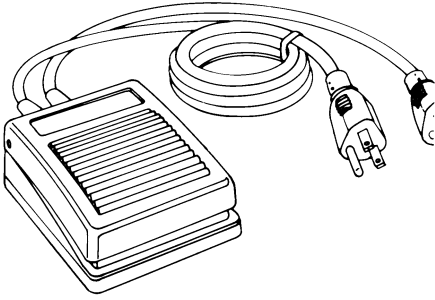
\* 395-T6 Wire Brush Setting.

**Use only Dremel Tested, High Performance Accessories.**

# Operating Speeds - (Cont.)

If you need it, single-speed models also can have speed control by using a Model 221 foot control unit.

**⚠ CAUTION** Not for use with variable speed or two speed models 285 or 395. Use with external speed control will damage the variable/two speed electronics.



The point to remember is this: You can do the great majority of work with the single speed at its regular speed of 35,000 RPM. But for certain materials and types of work, you need slower speeds — which is the reason the variable speed models and the speed control units are available.

To aid you in determining the optimum operational speed for different materials and different accessories, we have constructed a series of tables that appear on page 24, 25 and 26. By referring to these tables, you can discover the recommended speeds for each type of accessory. Look these tables over and become familiar with them.

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 a wire brush must be done at speeds not greater than 15,000 RPM to prevent damage to the brush.
3. Wood should be cut at high speed.
4. Iron or steel should be cut at high speed. If a high speed steel cutter starts to chatter — this normally means it is running too slow.
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!**

## Assembly & Operation of Attachments

### Flex-Shaft 225

**⚠ WARNING** Not for use with router bits. Use with router bits will cause kickback.

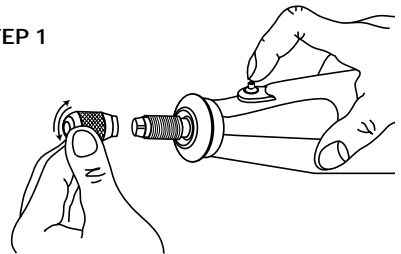
#### INSTALLATION INSTRUCTIONS

It is extremely important to carefully read and follow the directions to assemble the flex-shaft to your rotary tool below to ensure the tool will function properly.

**Attention:** For optimum performance, allow your new flex shaft attachment to run at high speed on your rotary tool in a vertical position for 2 minutes before use.

To properly attach the flex-shaft to the rotary tool,

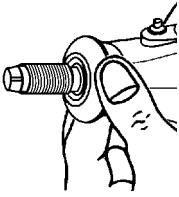
#### STEP 1



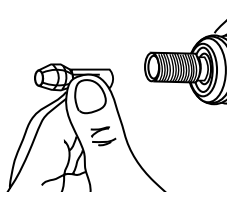
THREE items must be removed from the tool: the housing cap, collet nut and collet.

**Step 1.** Press the Shaft lock button, unscrew and remove the collet nut.

## STEP 2



## STEP 3

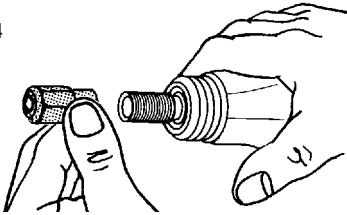


**Step 2.** Unscrew the housing cap from the tool.

**Step 3.** Remove the collet.

**Note:** If the collet nut and collet are not removed from the motor shaft, the tool will not function properly.

## STEP 4

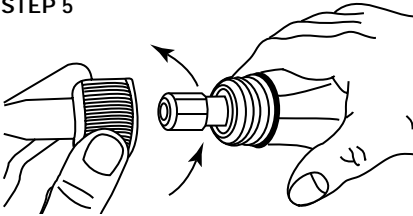


**Step 4.** Install the driver cap on the motor shaft and tighten.

**CAUTION** To prevent damage to tool, do not overtighten driver cap.

Tighten the driver cap finger tight and then tighten an additional 1/3 turn with the wrench. (Wrench included with your rotary tool kit)

## STEP 5



**Step 5.** Attach by screwing the collar of the flex-shaft to the rotary tool. Make sure the square end of the center core engages the square hole socket in the driver cap.

**CAUTION** Do not pull out center core to engage into driver cap. This could cause disengagement of center core from handpiece. If tool stops when shaft is bent, center core may be lodged in driver cap. Loosen shaft and remove core from driver cap. Then screw flexible shaft onto rotary tool housing again.

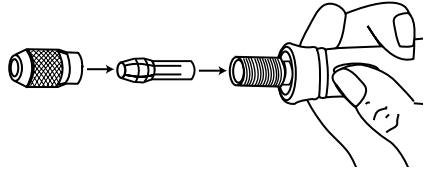
## OPERATING INSTRUCTIONS

### Disengagement of the Flex-Shaft

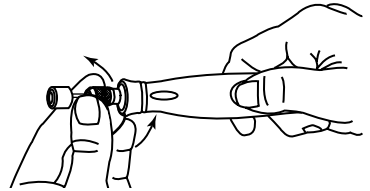
The flexible shaft may become disengaged if the motor of your rotary tool is not elevated higher than the working end of the flex-shaft. The #2222 Rotary Tool Stand is recommended to hold the rotary tool at the proper height.

### Collet and Accessory Assembly

The collet assembly consists of a collet nut and collet. Take the collet nut and collet that were removed from your tool in step 2 and 3 and insert them into the tip of the flex-shaft handpiece.



Insert an accessory or bit as deeply as possible to avoid wobble during use. With the shaft lock button engaged on the flex-shaft handpiece retighten the collet nut.



### Collet Removal and Replacement

Four different size collets to accommodate different shank sizes, are sold separately for your flex-shaft. 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 flex-shaft. Replace collet nut on the shaft. Always use the collet which matches the shank size of the accessory you plan to use. Never force a larger diameter shank into a collet.

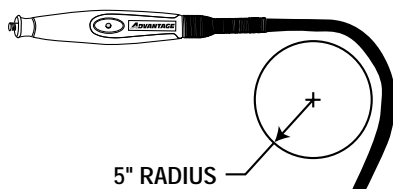
**FLEXIBLE SHAFT LUBRICATION** — The flexible shaft should be lubricated after every 25-30 hours of use. To lubricate, unscrew the flexible shaft assembly from the motor housing. Pull the center core out of the flexible shaft assembly. Wipe a very thin film of a good quality, high temperature grease on to the center core.

**CAUTION** To prevent damage to tool do not over grease shaft. Too much grease will cause the unit to overheat. Dremel shaft lubricant No. 5990952 or automotive wheel bearing grease should be used.

Reattach the flex-shaft to the rotary tool.

# Assembly & Operation of Attachments - (Cont.)

**⚠ WARNING** Do not operate the flexible shaft with a sharp bend. This can generate excessive heat and will reduce tool and flex-shaft life. The recommended minimum is 5" radius.



Contents of 225 Flex-Shaft Attachment:

Qty.	Description
1	Flex-Shaft Assembly (42" long)
1	Driver Cap

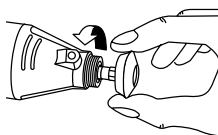
## Cutting Guide 565

The Cutting Guide 565 (sold separately) comes completely assembled and ready to use. For use in a variety of materials up to 3/4" thick. Match the bit type to the material to be cut. Always hold the tool firmly, using slow steady pressure to make cuts.

To attach, follow the four steps shown below.

**Important:** When viewing the tool from the top, the bit rotates clockwise. Feed direction of cutting must be counter-clockwise.

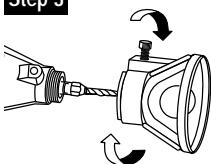
**Step 1**



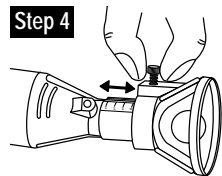
**Step 2**



**Step 3**



**Step 4**



#560



### Drywall Cutting Bit

For use in drywall.

- When inserting the #560 bit into your Rotary Tool, make sure that the bit has been inserted as far as possible.
- When using a template (outlet box) behind the drywall, use the drywall bit #560, cutting in a counter-clockwise direction.

- When making freehand cuts in Drywall, example repairing a hole in drywall, use the Multipurpose bit #561, cutting in a clockwise direction.
- When using #561, Multipurpose Cutting Bit, start the bit into the material at a 45 degree angle and then slowly bring it to a 90 degree angle to begin the cut.

#561

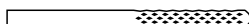


### Multipurpose Cutting Bit

For use in wood, plastics, drywall, fiberglass, vinyl or aluminum siding, acoustical tile and laminates.

- When inserting the #561 bit into your Rotary Tool, make sure that the bit has been inserted as far as possible.

#562



### Tile Cutting Bit

For use on wall tile, cement board and plaster

- When inserting the #562 bit into your MultiPro tool, it is very important that 1/16"-1/8" of smooth shank remains visible above the collet.
- When using #562, Tile Cutting Bit, start the bit into the material at a 45 degree angle and then slowly bring it to a 90 degree angle to begin the cut.
- **NOT FOR USE ON FLOOR TILE**

# Grout Removal Kit 568

The #568 grout removal attachment comes completely assembled and ready to use. Use the #569 (1/16") bit for tiles spaced more than 1/16" apart. If your tiles are spaced more than 1/8" apart, it is recommended that you use the #570 (1/8") bit.

**Note:** If the bit is too wide for the spacing between your tiles, you may damage your tile or the grout removal bit.

**Step 1:** Remove the housing cap from the tool.

**Step 2:** Insert the grout removal bit into your rotary tool.

**⚠ CAUTION** When inserting the #569 or #570 grout removal bit into your Dremel rotary tool, be sure that the bit is secure within the "jaws" of the collet. Use the wrench to tighten the collet nut to prevent the bit from loosening within the collet. Do not use your Dremel Chuck, #4486, with the grout removal bits.

**Step 3:** Screw the grout removal attachment onto the rotary tool.

**Step 4:** Adjust the attachment and bit to the desired cutting depth.

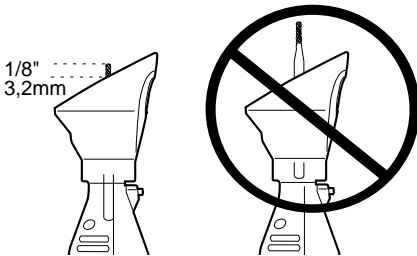
## Grout Removal Attachment Cutting Depth Adjustment

The Multi Slide Depth Adjustment has increment markings of 1/8" (3,2 mm). These markings are for reference only in identifying the depth of your desired cut. The multiple channels of the depth adjustment let you choose the orientation of the attachment to the tool. Be sure to securely tighten the screw within one of the multiple channel positions.

To set cutting depth:

### Cleaning Grout:

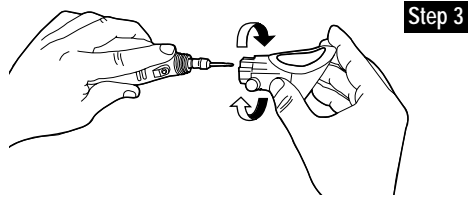
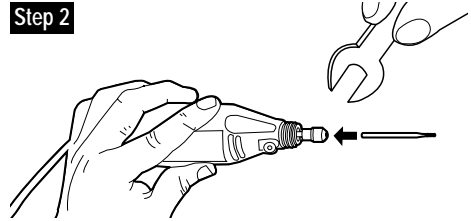
Do not remove grout more than 1/8" below the face surface of the tile. Adjust the Multi Slide Depth Adjustment and bit so that no more than 1/8" of the bit extends beyond the base of the attachment.



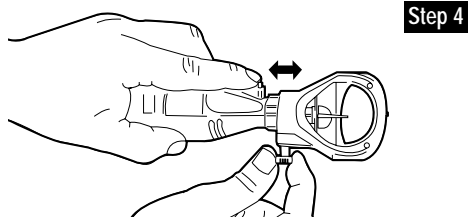
After removing 1/8" of grout, regrout to tile level. Seal the new grout.



Step 1



Step 3



Step 4

### Removing Grout to Replace A Broken Tile:

Remove all of the grout surrounding the broken tile. Adjust the Multi Slide Depth Adjustment so that no more than 1/8" of the bit extends beyond the base of the attachment. See Figure 5. Remove grout at a depth no more than 1/8" at a time. You may need to adjust the Multi Slide Depth Adjustment by 1/8" increments (reference the 1/8" incremental white markings on the Multi Slide Depth Adjustment) and make several passes until all the grout is removed.

When removing grout deeper into the grout line, you may strike hidden objects like screw heads, mortar, tile cement or nails that may cause the bit to bind, overheat or break. Reduce the tool speed and work through it slowly, making several passes. In case of screws or nails, remove the grout around the area as the bit will not cut through them.

# Assembly & Operation of Attachments - (Cont.)

## Operating Instructions

**⚠ WARNING** Always pull the tool toward you! Do not push it! Pushing the bit may cause it to break. Hold the tool in a golf grip with the tool positioned below the attachment and the bit pointing upwards.

On your variable speed tool, recommended tool speed is 15,000-20,000 RPM's or speed setting 6 to avoid damage to the bit. On your two speed tool, recommended tool speed is "Low" to avoid damage to the bit. Do not force the bit or put pressure on the back of the tool to remove the grout. Let the speed of the rotating bit do the work.

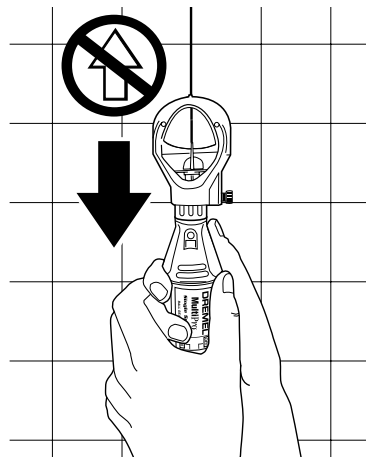
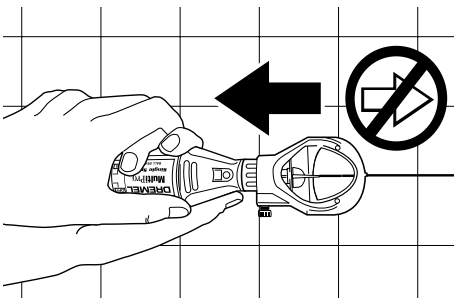
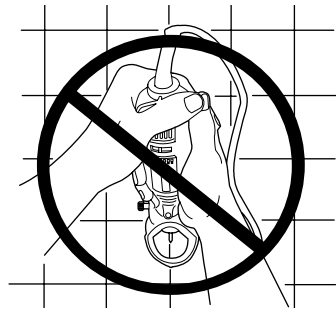
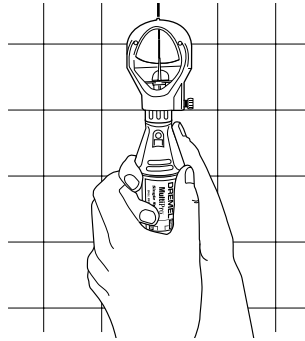
**⚠ WARNING** Wear eye protection and dust mask. Inspect bit for damage.

When bit is installed, always run it at no-load speed of the tool for one minute, as a damaged bit will break apart. Do not stand in front of or in line with bit.

Always use the tool with the depth guide positioned flat against the material being cut.

The guide securely positioned on the material improves stability and control of your tool.

The direction of feed with the bit into the grout is important. Always drag or pull the bit through the grout line. The grout bit is not intended for "plowing" through the grout and feeding the tool in the wrong direction will cause the bit to climb out of the work possibly damaging the bit and/or causing loss of control.





# Right Angle Attachment 575

Before you begin, remove the black protective cap on your attachment. If cap does not slide off easily, insert the shank portion of any accessory through the housing opening of the attachment to hold shaft from rotating. Then twist off. Figure 1.

**⚠ CAUTION** Do not use the rotary tool shaft lock button when changing accessories on the attachment. Internal damage to the attachment may occur.

Remove the housing cap from your existing rotary tool as shown in fig. 2. Then press the shaft lock button on your rotary tool, unscrew the collet nut and remove the collet.

Set your collet nut and collet aside it will be reinstalled later in step 4.

Install the drive adapter, included with your right angle attachment, on the motor shaft as shown in fig.3 and tighten.

**⚠ CAUTION** Do not over tighten drive adapter. Tighten the drive adapter finger tight and then tighten an additional 1/3 turn with the wrench. (Wrench included with your rotary tool kit)

Screw the attachment onto your rotary tool. Hand tighten only. Reassemble the collet and the collet nut from step 2, on to the output shaft of the attachment. Figure 4.

The right angle attachment can be oriented on your rotary tool in 12 different positions. The attachment should be positioned so the on/off speed control switch is easy to access.

To reposition, unscrew the collar from the attachment until disengaged. Slide the attachment off. Then, reposition, slide the attachment back on the tool and retighten the collar. Figure 5.

To change an accessory, insert the shank portion of any accessory (3,2 mm recommended) through the housing opening of the attachment to hold the shaft from rotating. With the shaft secured, loosen the collet nut and insert an accessory as deeply as possible to avoid wobble during use. You may need to pull back the shank from the housing opening to provide clearance while inserting the accessory. Figure 6.

**⚠ WARNING** Attachment can become hot after prolong usage.

FIG. 1

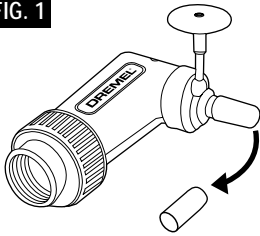


FIG. 2

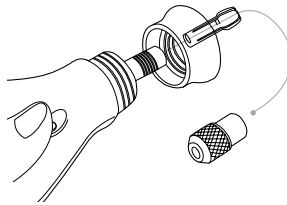


FIG. 3

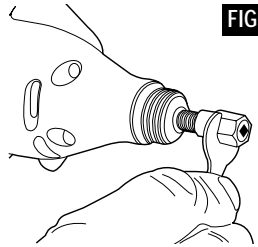


FIG. 4

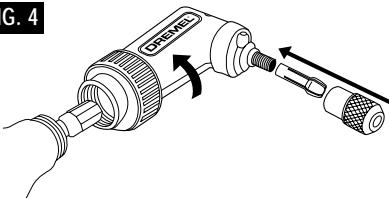


FIG. 5

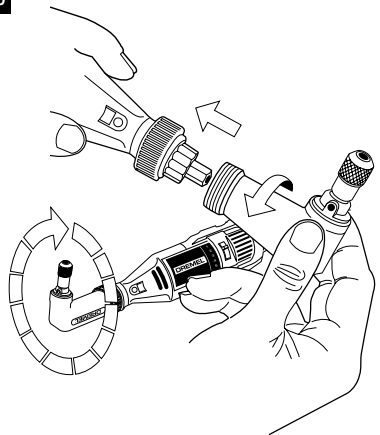
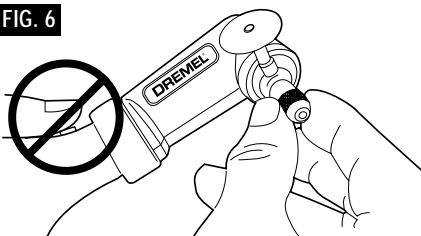


FIG. 6



# 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 Dremel Service Facility.

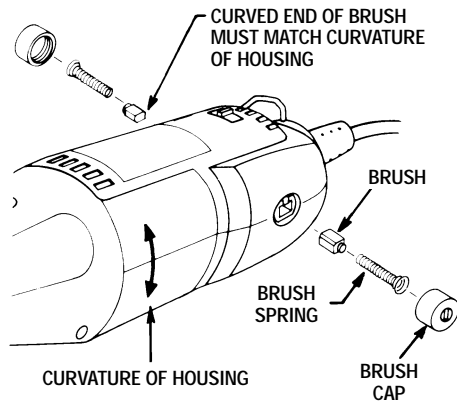
### CARBON BRUSHES

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 50 - 60 hours the brushes be examined. Only genuine Dremel replacement brushes specially designed for your tool should be used.

### MAINTENANCE OF REPLACEABLE BRUSHES ON MODELS 275T6, 285T6, & 395T6

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

With the cord unplugged, remove the brush caps one at a time with a small screwdriver by rotating cap counter-clockwise and check each 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.

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

Models 275T6, 285T6, and 395T6 have double ball bearing construction. Under normal use they will not require lubrication.

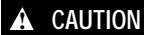
## Cleaning



### 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.

## Extension Cords

If an extension cord is necessary, a cord with adequate size conductors that is capable of carrying the current necessary for your tool must be used. This will prevent excessive voltage drop, loss of power or overheating. Grounded tools must use 3-wire extension cords that have 3-prong plugs and receptacles.

### RECOMMENDED SIZES OF EXTENSION CORDS 120 VOLT ALTERNATING CURRENT TOOLS

Tool's Ampere Rating	Cord Size in A.W.G.				Wire Sizes in mm <sup>2</sup>			
	Cord Length in Feet				Cord Length in Meters			
	25	50	100	150	15	30	60	120
3-6	18	16	16	14	.75	.75	1.5	2.5
6-8	18	16	14	12	.75	1.0	2.5	4.0
8-10	18	16	14	12	.75	1.0	2.5	4.0
10-12	16	16	14	12	1.0	2.5	4.0	—
12-16	14	12	—	—	—	—	—	—

NOTE: The smaller the gauge number, the heavier the cord.

# Dremel Attachments

Add these Dremel attachments to your compact workshop and make your Rotary Tool more versatile.



## 565 - Multipurpose Cutting Kit

- Includes 2 drywall cutting bits (560) and 1 spiral cutting bit (561)
- Cuts fiberglass, wood & drywall easily



## 566 - Tile Cutting Kit

- Includes 1 Ceramic tile cutting bit (562)
- Cuts ceramic wall tile to any shape



## 330 - Router Attachment

- Shapes, edges, chamfers, cuts, rabbets, dadoes, etc. Adjustable edge guide can be easily removed for freehand routing. The Model 330 can be used with Models 270, 280, 380 or 275, 285, 395 and 850.



## 225 - Flex-Shaft

- Allows finger-tip control for tight corners and hard-to-reach areas. 36" long cable attaches to Models 275, 285, 395, and 850. Pencil-like 1/2" diameter hand piece is cool-running and ideal for light duty wood carving and other uses.



## 231 - Shaper/Router Table

- Converts the Rotary Tool into a bench mounted wood shaper. Clamp it to a workbench and perform professional quality slotting, edge trimming, grooving and sanding of irregular shapes accurately and with ease. Large 8" x 6" worktable. Use with Models: 270, 275, 280, 285, 370, 380, 395 and the 850.



## 212 - Drill Press

- For precision drilling, routing, grooving, 6" square work surface, 0" to 3" throat depth. Table slotted for guides, hold downs. Holds Models 275, 285, 395 and 850.



## 575 - Right Angle Attachment

- Enhances the versatility of your Dremel rotary tool by allowing you to get into hard-to-reach areas.



## 568 - Grout Removal Kit

- Four use on wall and floor grout
- 30° angle for controlled cutting
- Guides 180° apart to keep bit centered between tiles
- Easy screw on mounting



## 2217 - Tool Holder and Base

- Firmly holds rotary tools in any position. Control workpiece (hands free) for better results.

# Dremel Accessories



**WARNING**

Use only Dremel Tested, High Performance Accessories. Other accessories are not designed for this tool and may lead to personal injury or property damage.

The number and variety of accessories for the Rotary Tool are almost limitless. There is a category suited to almost any job you might have to do — and a variety of sizes and shapes within each category which enables you to get the perfect accessory for every need.

Refer to the DREMEL ACCESSORY ORDER FORM for illustrations of the accessories available. These accessories may be found at your local hardware, hobby or home center dealers.

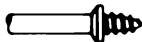


## Collets

If you expect to use a variety of accessories, we recommend that in the beginning you purchase a complete set of four collets. Store these so that you will have the proper size of collet for any accessory or drill bit you want to use. **Currently, the 1/8", 3/32", 1/32" and 1/16" collets accommodate all of the available Dremel accessories. 1/8" collets are included in most rotary tool kits.**

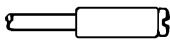
## Mandrels

A mandrel is a shank with a threaded or screw head, which are required when you use polishing accessories, cutting wheels, sanding discs, and polishing points. The reason mandrels are used is that sanding discs, cutting wheels and similar accessories must be replaced frequently. The mandrel is a permanent shank, allowing you to replace only the worn head when necessary, thus saving the expense of replacing the shaft each time.



### Screw Mandrel No. 401

This is a screw mandrel used with the felt polishing tip and felt polishing wheels. 1/8" shank.



### Small Screw Mandrel No. 402

This is a mandrel with a small screw at its tip, and is used with emery and fiberglass cutting wheels, sanding discs and polishing wheels. 1/8" shank.



### Threaded Tip Mandrel No. 424

This is a mandrel with a threaded tip which threads into the polishing point accessory No. 427. 1/8" shank.



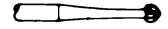
## High Speed Cutters

Available in many shapes, high speed cutters are used in carving, cutting and slotting in wood, plastics and soft metals such as aluminum, copper and brass. These are the accessories to use for freehand routing or carving in wood or plastic, and for precision cutting. Made of high quality steel. 1/8" shank.



## Tungsten Carbide Cutters

These are tough, long-lived cutters for use on hardened steel, fired ceramics and other very hard materials. They can be used for engraving on tools and garden equipment. 1/8" shanks.



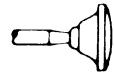
## Engraving Cutters

This group has a wide variety of sizes and shapes, and are made for intricate work on ceramics (greenware), wood carvings, jewelry and scrimshaw. They often are used in making complicated printed circuit boards. They should not be used on steel and other very hard materials but are excellent on wood, plastic and soft metals. 3/32" shank.



## Structured Tooth Tungsten Carbide Cutters

Fast cutting, needle-sharp teeth for greater material removal with minimum loading. Use on fiberglass, wood, plastic, epoxy and rubber. 1/8" and 1/4" shank.



## Aluminum Oxide Grinding Stones (red/brown)

Round, pointed, flat — you name the shape and there is one available in this category. These are made of aluminum oxide and cover virtually every possible kind of grinding application. Use for sharpening lawn mower blades, screwdriver tips, knives, scissors, chisels and other cutting tools. Use to remove flash from metal castings, deburring any metal after cutting, smoothing welded joints, grinding off rivets and removing rust. These grinding stones can be resharped with a dressing stone. In machine shops, high speed drills and cutters normally are ground with aluminum oxide wheels. 1/8" shank.



## Silicon Carbide Grinding Stones (blue/green)

Tougher than aluminum oxide points, these are made especially for use on hard materials such as glass and ceramics. Typical uses might be the removal of stilt marks and excess glaze on ceramics and engraving on glass. 1/8" shank.



## Diamond Wheel Points

Excellent for fine detail work on wood, jade, ceramic, glass and other hard material. Bits are covered with diamond particles. 3/32" shanks.



### Wire Brushes

Three different shapes of wire brushes are available. **Never use wire brushes at speeds greater than 15,000 RPM. Refer to Operating Speeds section for proper tool speed setting.** The three shapes come in three different materials: stainless steel, brass and carbon wire. The stainless steel perform well on pewter, aluminum, stainless steel, and other metals, without leaving "after-rust". Brass brushes are non sparking, and softer than steel; making them good for use on soft metal like gold, cooper and brass. The carbon wire brushes are good for general purpose cleaning.



### Bristle Brushes

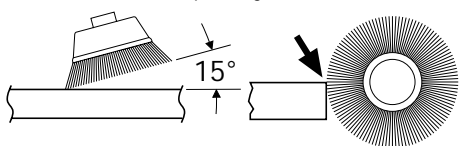
These are excellent cleaning tools on silverware, jewelry and antiques. The three shapes make it possible to get into tight corners and other difficult places. Bristle brushes can be used with polishing compound for faster cleaning or polishing.

### Brushing Pressure

1. Remember, the tips of a wire brush do the work. Operate the brush with the lightest pressure so only the tips of the wire come in contact with the work.
2. If heavier pressures are used, the wires will be overstressed, resulting in a wiping action; and if this is continued, the life of the brush will be shortened due to wire fatigue.
3. Apply the brush to the work in such a way that as much of the brush face as possible is in full contact with the work. Applying the side or edge of the brush to the work will result in wire breakage and shortened brush life.

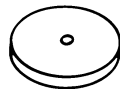
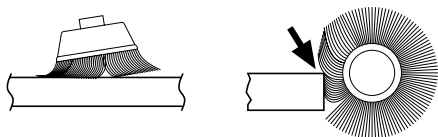
#### CORRECT:

Wire tips doing the work.



#### INCORRECT:

Excessive pressure can cause wire breakage.



### Polishing Accessories

These include an impregnated polishing point and an impregnated polishing wheel for bringing metal surfaces to smooth finish; a felt polishing tip and felt polishing wheel, and cloth polishing wheel, all used for polishing plastics, metals, jewelry and small parts. Also included in this group is a polishing compound (No. 421) for use with the felt and cloth polishers.

Polishing points make a very smooth surface, but a high luster is obtained using felt or cloth wheels and polishing compound. **For best results polishing accessories should be used at speeds not greater than 15,000 RPM. Refer to Operating Speeds section for proper tool speed setting.**

No polishing compound is needed when using the 425 Polishing Wheel or 427 Polishing point.



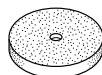
### Aluminum Oxide Abrasive Wheels

Use to remove paint, deburr metal, polish stainless steel and other metals. Available in fine and medium grits. 1/8" shank.



### Sanding Accessories

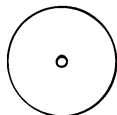
Sanding discs in fine, medium and coarse grades are made to fit mandrel No. 402. They can be used for nearly any small sanding job you might have, from model making to fine furniture finishing. In addition, there is the drum sander, a tiny drum which fits into the Rotary Tool and makes it possible to shape wood, smooth fiberglass, sand inside curves and other difficult places, and other sanding jobs. You replace the sanding bands on the drum as they become worn and lose their grit. Bands come in fine and coarse grades. Flapwheels grind and polish flat or contoured surfaces. They are used most effectively as a finishing sander after heavier surface sanding and material removal is completed. Flapwheels come in fine and coarse grades. Buffs are a great finishing accessory for cleaning and light sanding. They work effectively on metal, glass, wood, aluminum and plastics. Coarse and medium buffs are sold together. 1/8" shank.



### Grinding Wheel

Use for deburring, removing rust, and general purpose grinding. Use with Mandrel #402.

# Dremel Accessories - (Cont.)



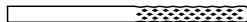
## Cutting Wheels

These thin discs of emery or fiberglass are used for slicing, cutting off and similar operations. Use them for cutting off frozen bolt heads and nuts, or to reslot a screw head which has become so damaged that the screwdriver won't work in it. Fine for cutting BX cable, small rods, tubing, cable and cutting rectangular holes in sheet metal.



## Drywall Cutting Bit

Gives you fast, clean cuts in drywall.



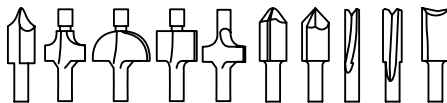
## Tile Cutting Bit

Cuts ceramic wall tile, cement board, and plaster.



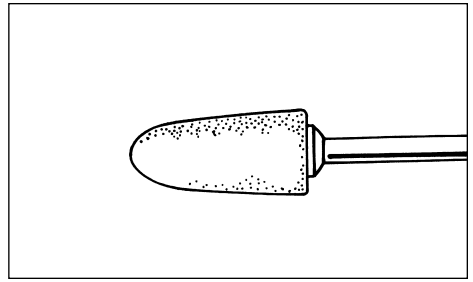
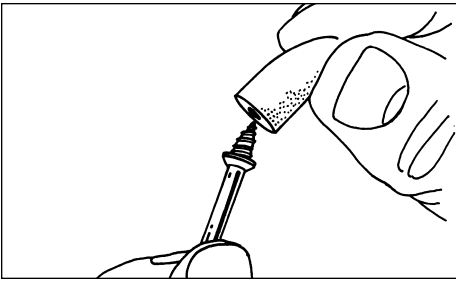
## Spiral Cutting Bit

Cuts through all types of wood and wood composites.

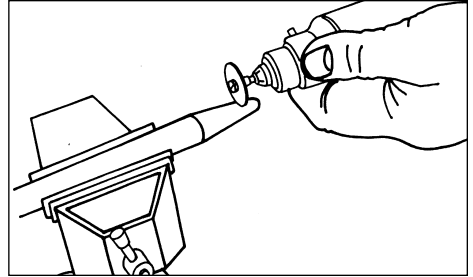
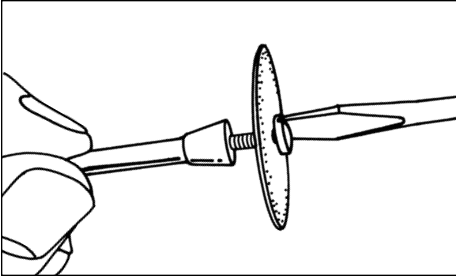


## High Speed Router Bits

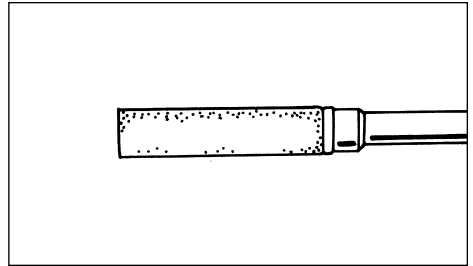
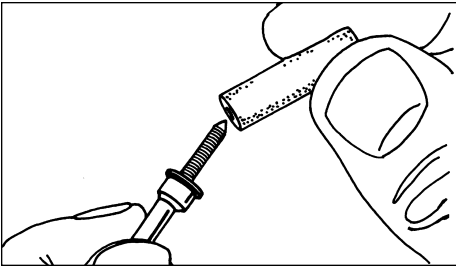
For routing, inlaying, and mortising in wood and other soft materials. Use only with Dremel No. 330 Router attachment or No. 231 Shaper/Router table.



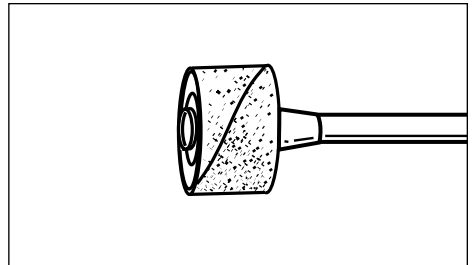
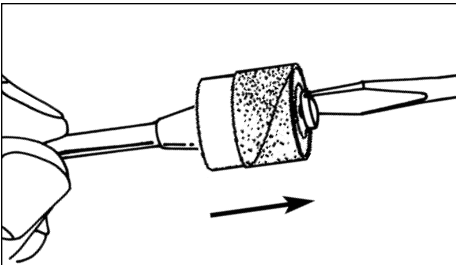
**Mandrel No. 401** is used with the felt polishing tip and wheels. Thread the tip on to the screw carefully. The felt tip must thread down straight on the screw Mandrel, and be turned all the way to the collar.



**Mandrel No. 402** has a small screw at its tip, and is used with emery cutting wheels and sanding discs. Higher speeds, usually maximum, are best for most work, including cutting steel. Which is shown here.



The machine-screw threading on **Mandrel No. 424** threads into polishing point No. 427. This and other threaded mandrels must be screwed firmly down to the collar before being used.



To replace a band on the **Drum Sander**, loosen the screw without removing it to contract the drum then slide the old band off. Slide the new sanding band on and then expand the drum by tightening the screw once again.

**⚠ WARNING** Before each use, check to make certain that all components are assembled to accessory shank and that the drum is sufficiently expanded to secure the band during use. If sanding band is loose on the drum during operation it may "fly" off and strike you or bystanders.

# SPEED SETTINGS

- \* Speed for light cuts, caution burning on deep grooves.
- Depending on cutting direction relative to grain.

CATALOG NUMBER	SOFT WOOD	HARD WOOD	LAMINATES PLASTIC	STEEL	ALUMINUM, BRASS, ETC.	SHELL/ STONE	CERAMIC	GLASS
<b>HIGH SPEED CUTTERS</b>								
100, 121, 131	10	10	6	6	8			
114, 124, 134, 144	10	6	4	6	6			
190	10	10	4	8	10			
118, 191, 192, 193, 194	10	10	4	6	10			
116, 117, 125, 196	10	6	4	6	6			
115	10	10	4	6	6			
198	10	8	4	6	6			
199	10	8	4	6	6			
<b>ENGRAVING CUTTERS</b>								
105, 108	10	10	8	4	6			
106, 109	10	10	6	4	6			
107, 110	10	10	6	4	6			
111	10*	10*	8*	4	6			
112	10*	10*	6*	4	6			
113	10*	10*	6*	4	6			
<b>DIAMOND WHEEL POINTS</b>								
7103, 7105, 7117, 7120, 7122, 7123, 7134, 7144	10	8				10	10	10
<b>STRUCTURED TOOTH TUNGSTEN CARBIDE CUTTERS</b>								
9931, 9932, 9933, 9934, 9935, 9936	10	8	4		6			
<b>TUNGSTEN CARBIDE CUTTERS</b>								
9901, 9902, 9903, 9904, 9905, 9906, 9912	10	8	4	10	6	8	8-10	8-10
9909, 9910, 9911						8	8-10	8-10

Use only Dremel Tested, High Performance Accessories.



# SPEED SETTINGS

- \* Speed for light cuts, caution burning on deep grooves.
- Depending on cutting direction relative to grain.

CATALOG NUMBER	SOFT WOOD	HARD WOOD	LAMINATES PLASTIC	STEEL	ALUMINIUM, BRASS, ETC.	SHELL/ STONE	CERAMIC	GLASS
<b>HIGH SPEED ROUTER BITS</b>								
612, 640	10*	8*						
615, 617, 618, 650, 652	10*	10*						
654	10*	8*						
<b>SILICON CARBIDE GRINDING STONES</b>								
83142, 83322, 83702, 84922, 85422, 85602, 85622			6	10	4	6	10	10
<b>ABRASIVE POINTS</b>								
516, 517, 518	4-6	4-6		8	6			
500	4-6	4-6		6-8	4-6			
<b>ALUMINIUM OXIDE GRINDING STONES</b>								
903, 911, 921, 932, 941, 945, 952, 953, 954, 971, 997, 8153, 8175, 8193, 8215	10	10		8	4	6	10	
541	10	10		8	4	6	10	
<b>CHAIN SAW SHARPENING STONES</b>								
453, 454, 455				10				
<b>CUTTING ACCESSORIES</b>								
409, 420, 426, 540			2-4	10	10	10	10	
542	10	8-10	2-4					
545	8-10	8				6-8	6-8	
560	For use on drywall. For best results, use at 30,000 rpm.							
561	6-10	6-10	2-4		10			
562							10	

**Use only Dremel Tested, High Performance Accessories.**

# SPEED SETTINGS

- \* Speed for light cuts, caution burning on deep grooves.
- Depending on cutting direction relative to grain.

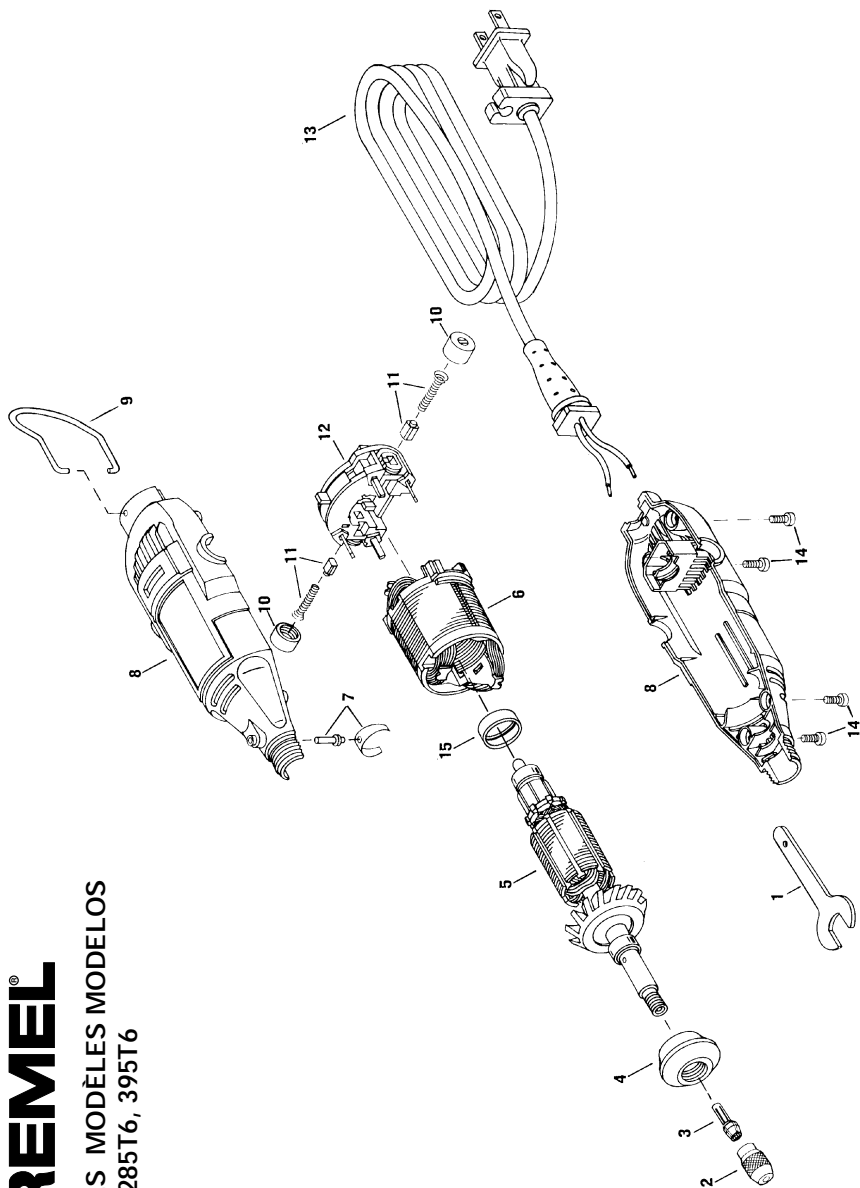
CATALOG NUMBER	SOFT WOOD	HARD WOOD	LAMINATES PLASTIC	STEEL	ALUMINUM, BRASS, ETC.	SHELL/ STONE	CERAMIC	GLASS
<b>POLISHING ACCESSORIES</b>								
461, 462, 463				8	8	8	8	8
414, 422, 429				6	6	6	6	6
425, 427				8	8			
423				6-8	6-8	6-8	6-8	6-8
403, 404, 405	4	4	2-4	6	6			
530, 531, 532		4		4				
428, 442, 443	4	4	2	4	4			
535, 536, 537	4	4		4	4	4		
<b>SANDING BANDS AND DISCS</b>								
430, 431, 438	2-10	2-10	2-6	10	10	2-10	2-10	
439, 440, 444	2-10	2-10	2-6	10	10	2-10	2-10	
407, 408, 432	2-10	2-10	2-6	10	10	2-10	2-10	
411, 412, 413	8	8	2-4		2-4			
<b>FLAPWHEELS</b>								
502, 503, 504, 505	10	8	2	10	8-10			
<b>FINISHING ABRASIVE BUFFS</b>								
511	6	6	4	6	6			
<b>DRILL BIT</b>								
150	10	8-10	2-4		6			
<b>GROUT REMOVAL BITS</b>								
For Use on Wall and Floor Grout								
569, 570							6-8	

**Use only Dremel Tested, High Performance Accessories.**



# DREMEL®

MODELS MODÈLES MODELOS  
275T6, 285T6, 395T6



ORDER BY PART NUMBER, NOT CODE NUMBER  
 COMMANDEZ PAR LE NUMERO DE LA PIECE—NON PAR LE NUMERO DE CODE  
 ORDERNE POR NUMERO DE PIEZA, NO POR NUMERO DE CODIGO

CODE NO. NO. DE CODE NUMERO DE CODIGO	PART NO. NO. DE LA PIECE NUMERO DE PIEZA	DESCRIPTION	DESCRIPTION	DESCRIPCION
1	2615990962	Wrench	Clé	Llave de tuercas
2	2615297355	•	Ecrou De Douille	Tuerca del portaherramienta
3	•	1/8" Collet (In Tool)	Douille 3,2 mm (avec l'outil)	Portaherramienta de 3,2 mm (en la herramienta)
4	•	Housing Cap	Chapeau du bâti	Tapa de la caja protectora
5	*481	3/32" Collet	Douille 2,4 mm	Portaherramienta de 2,4 mm
6	2610912779	Armature & Bearing Assembly	Ensemble de l'armature et palier	Ensamblaje de inducto y rodamientos
7	2610907324	Field Assembly	Champ d'induit	Ensamblaje de campo
8	2615297356	•	Collet Lock & Spring	Cierre y resorte de portaherramienta
9	2615294043	Hanging Set	Bâti	Juego de caja protectora
10	2610913683	Brush Cap (Pair)	Bride de suspension	Gancho
11	2615302695	•	Chapeau de balai (paire)	Tapa para escobillas (par)
12	•	Switch Assembly	Ressort de balai (paire)	Muelle para escobillas (par)
13	2615294041	Cord	Montage de l'interrupteur	Ensamblaje del interruptor
14	2615294035	Screw (individual)	Cordon	Cordón
15	2615297373	Isolator	Vis	Tornillos
			Manchon isolant	Aislante

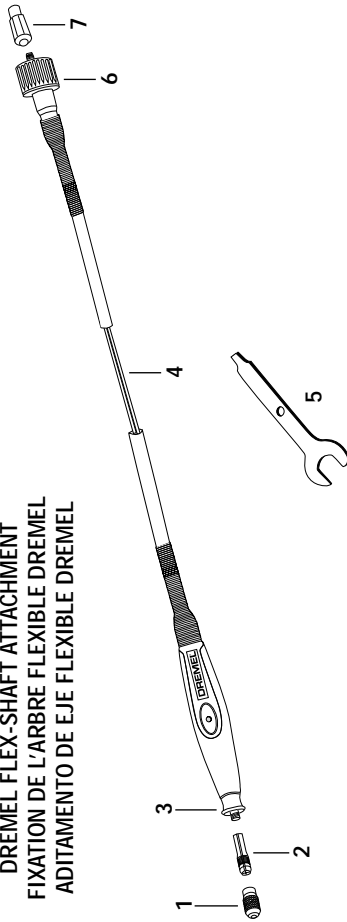
\*481 Collet included in 2850, 3951, 3955, 3957 kits only \*Douille 481 comprise uniquement dans les nécessaires 2850, 3951, 3955 et 3957  
 \*El portaherramienta 481 sólo se incluye en los juegos 2850, 3951, 3955 y 3957

• THE FOLLOWING PARTS ONLY APPLY TO MODELS INDICATED. • LES PIÈCES SUIVANTES S'APPLIQUENT UNIQUEMENT AUX MODÈLES INDICQUÉS.  
 • LAS PIEZAS SIGUIENTES SON SOLO PARA LOS MODELOS INDICADOS.

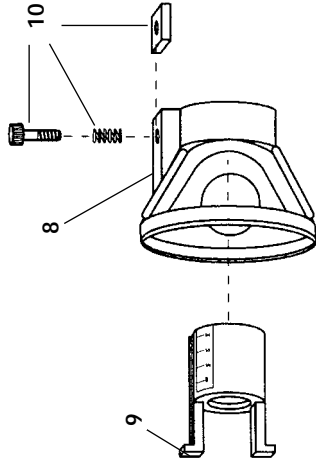
CODE NO. NO. DE CODE NUMERO DE CODIGO	MODEL MODELE MODELO	DESCRIPTION	DESCRIPTION	DESCRIPCION
3	F013027503	1/8" Collet (In Tool)	Douille 3,2 mm (avec l'outil)	Portaherramienta de 3,2 mm (en la herramienta)
4	2615000480	Housing Cap	Chapeau du bâti	Tapa de la caja protectora
8	2615294028	Housing Set	Bâti	Juego de caja protectora
	2615297374	2610912778	2610912781	
	2610912793	2610912795	2610912782	
	2610912794	2610912796	2610912783	
12	2610912826	2610912829	2610912780	Ensamblaje del interruptor

WRITE FOR CURRENT PRICES  
 NO C.O.D.'S  
 ÉCRIVEZ POUR OBTENIR LES PRIX  
 ACTUALES - NO SE HACEN ENVIOS CONTRA REEMBOLSO

**DREMEL FLEX-SHAFT ATTACHMENT  
FIXATION DE L'ARBRE FLEXIBLE DREMEL  
ADITAMENTO DE EJE FLEXIBLE DREMEL**

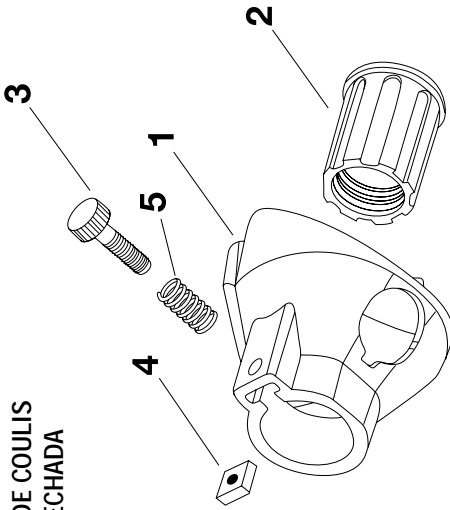


**DREMEL CUTTING GUIDE  
GUIDE DE GOUPE DREMEL  
GUIA DE CORTE DREMEL**



CODE NO. NO. DE CODE NO. DE CODIGO	PART NO. NO. DE PIÈCE NO. DE PIEZA	DESCRIPTION	DESCRIPTION	DESCRIPCION
1	4484	Collet Nut (Not included)	Écrou de douille (non fourni)	Tuerca del portaherramienta (no incluida)
2	480	1/8" Collet available as Accessory (Not included)	Douille de 3,2 mm offerte comme accessoire (non fournie)	Portaherramienta de 3,2 mm disponible como accesorio (no incluido)
	481	3/32" Collet available as Accessory (Not included)	Douille de 2,4 mm offerte comme accessoire (non fournie)	Portaherramienta de 2,4 mm disponible como accesorio (no incluido)
	482	1/16" Collet available as Accessory (Not included)	Douille de 1,6 mm offerte comme accessoire (non fournie)	Portaherramienta de 1,6 mm disponible como accesorio (no incluido)
	483	1/32" Collet available as Accessory (Not included)	Douille de 0,8 mm offerte comme accessoire (non fournie)	Portaherramienta de 0,8 mm disponible como accesorio (no incluido)
3	2610914373	Handpiece Cap	Tapa del Mango	Chapeau de la pièce manuelle
4	529410970	Flexible Shaft Core	Noyau d'arbre flexible	Núcleo del eje flexible
5	90962	Wrench Available as Accessory (Not included)	Clé offerte comme accessoire (non fournie)	Llave de tuerca disponible como accesorio (no incluida)
6	2610915085	Overthrow Nut Assembly	Conjunto de tuerca	Ensemble d'écrou de renversement
7	529417870	Driver Cap	Capuchon d'entraînement	Tapa del impulsor
8	2615302049	Guide		Guía
9	2615302102	Guide insert		Guía para insertar
10	2615302103	Screw spring & nut		Destornillador, Muelle & Tuerca

**GROUT REMOVAL KIT  
KIT POUR L'EXTRACTION DE COULIS  
JUEGO PARA QUITAR LECHADA**



CODE NO. NUMERO DE CODIGO NO. DE CODE	PART NO. NUMERO DE PIEZA NO. DE LA PIECE	DESCRIPTION	DESCRIPCION	DESCRIPTION
1	2615302691	Angled Cone Housing	Cubierta Protectora en Forma de Angulos	Enveloppe angulaire conique
2	2615302687	Multi Channel Slide	Deslizamiento Multi-Canales	Glissière à cannelures
3	2615302688	Thumbscrew	Tornillo de Apriete Manual	Vis à ailette
4	2615302689	Square Nut	Tuerca Cuadrada	Écrou carré
5	2615302690	Compression Spring	Resorte	Ressort







# Dremel Limited Warranty

Your Dremel Rotary Tool is warranted against defective material or workmanship for a period of five years from date of purchase. In the event of a failure of a product to conform to this written warranty, please take the following action:

1. DO NOT return your product to the place of purchase.
2. Carefully package the product by itself, with no other items, and return it, freight prepaid, along with:
  - A. A copy of your dated proof of purchase (please keep a copy for yourself).
  - B. A written statement about the nature of the problem.
  - C. Your name, address and phone number to:

## UNITED STATES

Dremel Service Center  
4915 Twenty-First Street  
Racine, Wisconsin 53406  
1-800-437-3635

OR

Dremel Service Center  
4631 E. Sunny Dunes  
Palm Springs, CA 92264  
1-800-275-2052

## CANADA

Giles Tool Agency  
6520 Lawrence Av. East  
Scarborough, Ont.  
Canada M1C 4A7  
1-888-285-3476

## OUTSIDE

**CONTINENTAL UNITED STATES**  
See your local distributor or write  
to Dremel, 4915 Twenty-First St.  
Racine, Wisconsin 53406

We recommend that the package be insured against loss or in transit damage for which we cannot be responsible.

This warranty applies only to the original registered purchaser. DAMAGE TO THE PRODUCT RESULTING FROM TAMPERING, ACCIDENT, ABUSE, NEGLIGENCE, UNAUTHORIZED REPAIRS OR ALTERATIONS, UNAPPROVED ATTACHMENTS OR OTHER CAUSES UNRELATED TO PROBLEMS WITH MATERIAL OR WORKMANSHIP ARE NOT COVERED BY THIS WARRANTY.

No employee, agent, dealer or other person is authorized to give any warranties on behalf of Dremel. If Dremel inspection shows that the problem was caused by problems with material or workmanship within the limitations of the warranty, Dremel will repair or replace the product free of charge and return product prepaid. Repairs made necessary by normal wear or abuse, or repair for product outside the warranty period, if they can be made, will be charged at regular factory prices.

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