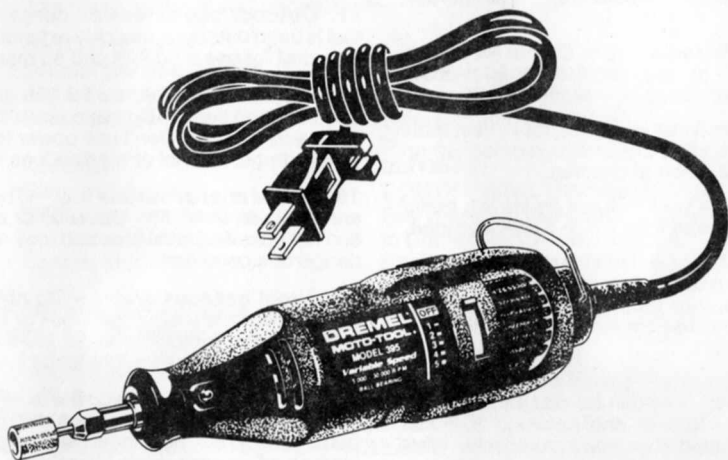


DREMEL

Moto-Tool Owner's Manual

Models 275, 285, 395, and 595

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



- assembly
- operation
- safety instructions

WARNING

For your own safety
read your
Owner's Manual
before operating
your
Dremel Moto-Tool

DREMEL

P.O. Box 1468
Racine, Wisconsin 53401

For Your Safety. . .

WARNING READ AND SAVE ALL THE FOLLOWING INSTRUCTIONS. When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following:

- 1. Keep work area clean** — Cluttered areas and benches invite injuries.
- 2. Avoid dangerous environment** — Don't expose tools to rain. Don't use power tools in damp or wet locations. Don't use power tools in the presence of flammable liquids or gases. Avoid chemical or corrosive environments. Keep work area well lit.
- 3. Guard against electric shock** — Prevent body contact with grounded surfaces. For example: pipes, radiators, refrigerator enclosures.
- 4. Keep children away** — Do not let visitors contact tool or extension cord. All visitors should be kept away from work areas.
- 5. Store idle tools** — When not in use, tools should be stored in dry, and high or locked-up place - out of reach of children.
- 6. Don't force tool** — It will do the job better and safer at the rate for which it was intended.
- 7. Use right tool** — Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended - for example - don't use circular saw for cutting tree limbs or logs.
- 8. Dress properly** — Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Wear protective hair covering to contain long hair.
- 9. Use safety glasses** — Also use face or dust mask if cutting operation is dusty.
- 10. Don't abuse cord** — Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
- 11. Secure work** — Use clamps or vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
- 12. Don't over-reach** — Keep proper footing and balance at all times.
- 13. Maintain tools with care** — Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and if damaged, have repaired, by authorized service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease.
- 14. Disconnect tools** — When not in use, before servicing, and when changing accessories, such as blades, bit, cutters.
- 15. Remove adjusting keys and wrenches** — Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
- 16. Avoid unintentional starting** — Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugged in.
- 17. Outdoor use extension cords** — When tool is used outdoors, use only extension cords intended for use outdoors and so marked.
- 18. Stay alert** — Watch what you are doing. Use common sense. Do not operate tool when you are tired. Don't use power tools after taking drugs, alcohol or medications.
- 19. Do not alter or misuse tool** — These tools are precision built. Any alteration or modification not specified is misuse and may result in a dangerous condition.
- 20. Avoid gaseous areas** — Do not operate portable electric tools in gaseous or explosive atmospheres. Motors in these tools normally spark, and the sparks might ignite fumes.
- 21 Check for damaged parts** — before further use of the tool, check for damaged parts. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A part that is damaged should be properly repaired or replaced by authorized service center before further use of the tool. Have defective switches replaced by authorized service center. Do not use tool if switch does not turn it on and off.
- 22. Your tool is double insulated** — And no grounding is necessary. The tool is equipped with a two wire cord and two prong plug which can be used in standard 120 volt A.C. outlets. Use only identical replacement parts when service is required.
- 23. EXTENSION CORDS** — An undersized cord will cause a drop in line voltage, resulting in loss of power and over-heating. Use 18 gauge or heavier cord. **NOTE:** The smaller the gauge number, the heavier the cord. (Extension cords are available.)
- 24. WARNING:** Use of damaged cords can shock, burn or electrocute.

READ AND SAVE ALL THE PRECEDING INSTRUCTIONS

Dremel Limited Warranty

Your Dremel product is warranted against defective material or workmanship for a period of one year 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

OR
Dremel Service Center
4631 E. Sunny Dunes
Palm Springs, CA 92264

CANADA

Giles Tool Agency
6520 Lawrence Av. East,
Scarborough, Ont.
Canada M1C 4A7

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.

DREMEL MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEED THE ABOVE MENTIONED OBLIGATION ARE HEREBY DISCLAIMED BY DREMEL AND EXCLUDED FROM THIS LIMITED WARRANTY.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. The obligation of the warrantor is solely to repair or replace the product. The warrantor is not liable for any incidental or consequential damages due to any such alleged defect. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusion may not apply to you.

For prices and warranty fulfillment in the continental United States, contact your local Dremel distributor.

Introduction

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

The Moto-Tool has a small, powerful electric 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, and cutting wheels. 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 Moto-Tool is. You'll see dozens of uses you hadn't thought of before now.

The real secret of the Moto-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 rev-

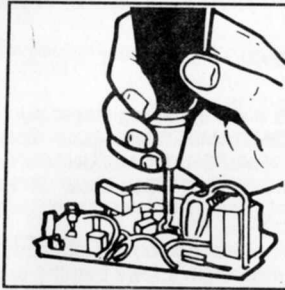
olutions per minute. The Moto-Tool operates at speeds up to 30,000 revolutions per minute. The typical electric drill is a low-speed, high torque tool; the Moto-Tool is just the opposite — a high-speed, low torque tool. The chief difference to the user is that in the high speed tools, the speed combined with the accessory mounted in the chuck 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, that makes the Moto-Tool different from other power tools. The speed enables it to do jobs low-speed tools cannot do, such as cutting hardened steel, engraving glass, etc.

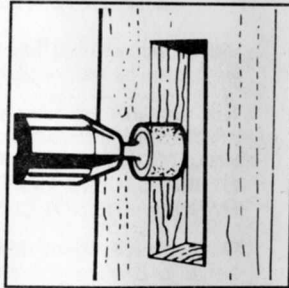
Getting the most out of your Moto-Tool is a matter of learning how to let this speed work for you.



Sharpen Tools



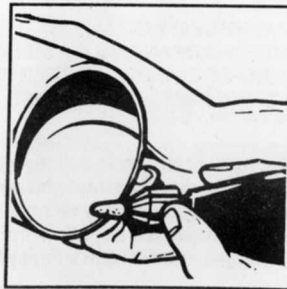
Precise Drilling



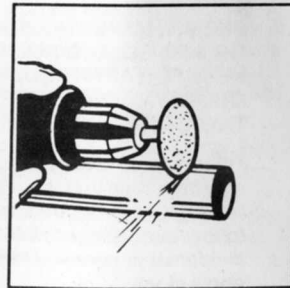
Shape Wood



Carve Wood



Deburr Metal



Cut Metal

Operation Guidelines

Read the next sections carefully. They will help you use your Moto-Tool correctly and help you select the correct accessory for your job.

Using the Moto-Tool

The first step in learning to use the Moto-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 Moto-Tool to be grasped much like a pen or pencil.

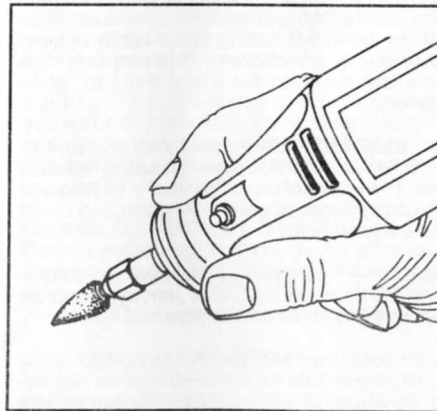
When you turn on the tool for the first time, hold it away from your face. Accessories can be damaged during handling, and can fly apart as they come up to speed. This is not common, but it does happen.

Practice on scrap materials first to see how the Moto-Tool cuts. Keep in mind that the work is done by the speed of the tool and by the accessory in the chuck. You should not lean on or push the tool into the work.

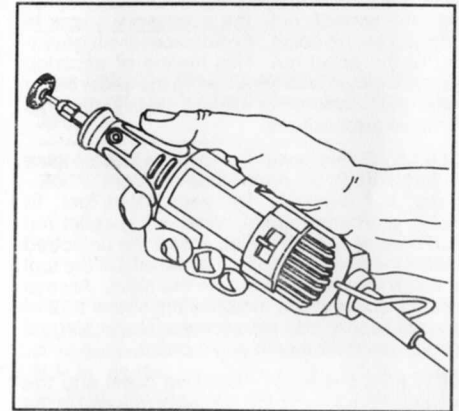
Instead, lower the spinning accessory lightly to the work and allow it to touch the point at which you want cutting (or sanding or etching, etc.) to begin. Concentrate on guiding the tool over the work using very little pressure from your hand. Allow the accessory to do the work.

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 deft, 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.

⚠ WARNING 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 either 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.



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



This is the "handgrip" method of holding the tool used for operations such as grinding a flat surface or using cutoff wheels.

