Mototool dremel 3000 manual









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Maintenance	Information	
Service Preventive maintenance 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. A WARNING To avoid injury from unexpected starting or	CAUTION To continue using the tool in this condition will permanently damage your tool. Follow these steps to check/change the rotary tool brushes: With the power cord unplugged, place the tool on a clean surface. Use the tool wrench as a screwdriver to remove the brush caps in a counter-clockwise direction (Figure C)	
electrical shock, always remove plug from wall outlet before performing service or cleaning. CARBON BRUSHES The brushes and commutator in your tool have been engineered for many hours of dependable service.	 Remove the brushes from the tool by pulling on the spring that is attached to the carbon brush. If the brush is less than 1/8" long and the end surface of the brush that contacts the commutator is rough and/or pitted, they should be replaced. Check both brushes (Figure D). 	
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.	Usually the brushes will not wear out simul- taneously. 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.	
The maintain peak encency of the motor, we recommend every 40 - 50 hours the brushes be examined. Only genuine Dremel replace- ment brushes specially designed for your tool should be used. MAINTENANCE OF REPLACEABLE BRUSHES ON MODELS 100, 200 & 3000 The brushes should be inspected frequently when tools are used continuously. If your tool runs sporadically, loses power, makes unusual	3. After replacing brushes the tool should be run at no-load; place it on a clean surface and run it freely at full speed for 5 minutes before loading (or using) the tool. This will allow the brushes to "seat" properly and will give you more hours of life from each set of brushes. This will also extend the total life of your tool since the commutator surface will "weat" longer.	•
brushes.		



ÉQUILIBRAGE DES ACCESSOIRES — Pour le travail de Continuez l'ajustement de cette façon jusqu'à ce que desserrez légèrement l'écrou de la douille, et tournez

précision, il est important que tous les accessoires vous obteniez le meilleur équilibre. Pour mainteni soient bien équilibrés (tout comme les pneus de votre l'équilibre des pointes de meule abrasive, avant chaque voiture). Pour rectifier ou équilibrer un accessoire, usage, alors que la pointe de meule est retenue fermement dans la douille, mettez l'outil rotatif en l'accessoire ou la douille d'un quart de tour. Resserrez marche et tenez la pierre à rectifier 415 légèrement ap l'écrou de la douille et mettez l'outil rotatif en marche. Le puyée sur la pointe de la meule en rotation. Ceci a pour son qui se fait entendre et le maniement de l'outil effet d'éliminer les points élevés tout en rectifiant la devraient vous indiquer si l'accessoire est bien équilibré. pointe de meule pour un meilleur équilibre.

Instructions

Vous pouvez suspendre votre outil au crochet de suspension pour le ranger ou lors de la pose de l'arbre ible. Si vous n'utilisez pas le crochet de suspension retirez-le de l'outil et remettez-le en place d'un coup sec en dessous du cordon de façon à ce qu'il ne gêne pas Futilisation de l'outil. L'outil rotatif est un outil polyvalent à grande vitesse. Il

peut servir à découper, aiguiser, polir, poncer, couper,

brosser, percer et davantage

L'outil rotatif a un petit moteur électrique universel puissant, il se manie confortablement, et il a été conçu de manière à recevoir un vaste éventail d'accessoires. compris roues abrasives, forets, brosses métalliques, polissoirs, fraises à graver, fers de toupie, disques de découpage et accessoires. Les accessoires sont offerts en différentes formes et ils vous permettent d'exécuter différentes tâches. A mesure que vous vous familiariserez avec l'éventail d'accessoires et leurs usages, vous constaterez la grande souplesse d'emploi de l'outil rotatif et découvrirez de nombreux usages auxquels vous n'aviez pas pensé auparavant.

Le véritable secret de l'outil rotatif tient à sa vitesse. Pour comprendre les avantages de sa grande vitesse, il vous faut savoir que la perceuse électrique portative standard fonctionne à des vitesses allant jusqu'à 2800 rs/minute. L'outil rotatif fonctionne à des vitesses allant jusqu'à 35 000 tours/minute. La perceuse électrique standard est un outil à basse vitesse mais à couple élevé ; l'outil rotatif est précisément l'inverse, un outil à grande vitesse mais à couple réduit. La différence

principale du point de vue de l'utilisateur est que, sur les outils à grande vitesse, la vitesse alliée au fait que l'accessoire est monté dans la douille de serrage fait le travail. Il ne vous est nullement nécessaire d'exercer une pression sur l'outil ; il vous suffit de tenir et de guider l'outil. Dans le cas des outils à basse vitesse, non seulement devez-vous guider l'outil, vous devez également exercer une pression sur celui-ci comme

vous le faites, par exemple, en percant un trou. C'est cette grande vitesse, alliée à son format compact naître le maniement. Tenez-le dans votre main pour en ainsi qu'au vaste éventail d'accessoires spéciaux, qui sentir le poids et l'équilibre. Habituez-vous à la forme distingue l'outil rotatif des autres outils. Sa vitesse lui permet d'exécuter des tâches, telles que la coupe de l'acier trempé, la gravure du verre, etc., que des outils à basse vitesse ne peuvent accomplir.

Sculptage du hois Façonnage du bois

Ebarbage du métal Coupe du méta

Pour tirer le maximum de votre outil rotatif, il vou faut apprendre comment mettre cette vitesse à votre service. Pour en apprendre plus sur les utilisations et la polyvalence des accessoires Dremel, reportez-vous à ce manuel ou visitez notre site web à www.Dremel.com

Utilisation de l'outil rotatif Apprendre à utiliser l'outil rotatif, c'est d'abord en con conique de son boîtier qui permet d'empoigner l'outil rotatif comme s'il s'agissait d'un stylo ou d'un crayon (Figure A.)

Tenez toujours l'outil éloigné de votre visage. Certains accessoires peuvent avoir été endommagés durant la

© 2012-2022, manualsdir.comAll rights reserved. DM 2610015339 05-11:DM 2610015339 05-11:DM 2610015339 05-11:qxp 5/12/11 9:40 AM Page 1 IMPORTANT: IMPORTANT 3000 P.O. Box 1468 Racine, Wisconsin 53401 Call Toll Free for Pour obtenir des informations Llame gratis para Consumer Information et les adresses de nos centres obtener information et les adresses de nobtener www.dremel.com For English Version Version française Versión en español See page 2 Voir page 23 Ver la página 45 DM 2610015339 05-11:DM 261001539 electric shock, fire and/or serious injury. SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordess) power tool. Work area safety Keep 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 children and bystanders away while operating a power tool. Electrical safety Power tools create sparks which may ignite the dust or fumes. the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock. Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded. Do not 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 for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock. When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock. If operating the power tool in damp locations is unavoidable, use a Ground Fault Circuit Interrupter (GFCI) protected supply. Use of an GFCI reduces the risk of electric shock. Personal safety Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury. Use personal protective equipment. Always wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries. Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and / or battery pack, picking up or carrying the tool. Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents. Remove any adjusting key or wrench before turning the power tool may result in personal injury. Do not overreach. Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations. Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust Use the correct power tool for your application. The correct power tool will do the job better and safer at the rate for which it was designed. Do not use the power tool if the switch is dangerous and must be repaired. DM 2610015339 05-11:DM 2610015339 05-11:DM 2610015339 05-11:Qxp 5/12/11 9:40 AM Page 3 Disconnect the plug from the power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained cutting tools with sharp cutting tools sharp and clean. Properly maintained power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the work to be performed. Use of the power tool for operations different from those intended could result in a hazardous situation. Service Have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained. Safety Rules for Rotary Tools Hold power tool is maintained gripping surfaces, because the cutter may contact its own cord. Cutting a "live" and shock the operator. Use clamps or another practical way to secure and support the workpiece to a stable platform. Holding the work by your hand or against the body leaves it unstable and may lead to loss of control. Accessories running over rated speed can fly apart and cause injury. 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 can generate excessive heat on the jacket or hand piece. The recommended minimum is 5" 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 picking the tool down or when picking 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 the EZ TWIST integrated wrench/nose cap are both securely tightened. Loose adjustment devices can unexpectedly shift, causing loss of control, loose rotating components will be violently thrown. Do not reach in the area 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 DM 2610015339 05-11:DM 2610015339 05-11:PM 261001539 PM 26100159 PM 26100 Page 4 Safety Rules for Rotary Tools - (cont.) 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 bristle brushes lightly to the work as only the top and individual grinding of the wire/bristles do the work." 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 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 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. Inspect your workpiece before 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 as the cutting edge is exiting from the material (which is the same direction as the chips are thrown). Feeding the too 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 is it 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 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. 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. ! WARNING DM 2610015339 05-11:DM 2610015339 05-11:qxp 5/12/11 9:40 AM Page 5 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. Additional Safety Warnings GFCI and personal protection devices like electrician's rubber gloves and footwear will further enhance your personal safety. Do not use AC only rated tools with a DC power supply. While the tool may appear to work, the electrical components of the AC rated tools with a DC power supply. and grease. Slippery hands cannot safely control the power tool. Develop a periodic maintenance schedule for your tool. When cleaning a tool be careful not to disassemble any portion of the tool since internal wires may be misplaced or pinched or safety guard return springs may be improperly mounted. Certain cleaning agents such as gasoline carbon tetrachloride, ammonia, etc. may damage plastic parts. Risk of injury to user. The power cord must only be serviced by a Dremel Service Facility. 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. of these chemicals are: •Lead from lead-based paints, •Crystalline silica from bricks and cement and other masonry products, and •Arsenic and chromium from chemicals: work in a well ventilated area of these chemicals: work in a well ventilated area of the second area of the sec and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. DM 2610015339 05-11:DM 2610015339 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. n0 No load speec Rotational speed, at no load n Rated speed Maximum attainable speed .../min Revolutions, strokes, surface speed, per minute or position settings. I, II, III, Higher number means greater speed 0 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 Type o Grounding terminal Warning symbol Alerts user to warning messages Li-ion RBRC seal Designates Li-ion battery recycling program Ni-Cad RBRC seal Designates Ni-05-11.qxp 5/12/11 9:40 AM Page 7 Symbols (continued) 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. This symbol designates that this tool is recognized by Underwriters Laboratories. This symbol designates that this tool is listed by the Canadian Standards. This symbol designates that this tool is listed by the Canadian Standards. Association, to United States and Canadian Standards. This symbol designates that this tool is listed by the Intertek Testing Services, to United States and Canadian Standards. ! WARNING DM 2610015339 05-11:DM 2610015339 05-11:DM 2610015339 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 2610539 05-11:QM 2610539 05-11:QM 2610539 05-11:QM 2610539 05-11:QM 2610539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 261001539 05-11:QM 2610539 05-11:QM 2610539 05 Description and Specifications 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. Models 100 & 200 SWITCH High Speed Rotary Tools (100 SINGLE SPEED) (200 TWO SPEED) HANGER SHAFT LOCK BUTTON COLLET COLLET NUT VENTILATION BRUSH COVER OPENINGS (one on each side) COLLET WRENCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (Model 3000 only) COLLET NUT VENTILATION BRUSH COVER OPENINGS (one on each side) COLLET WRENCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (Model 3000 only) COLLET NUT VENTILATION BRUSH COVER OPENINGS (one on each side) COLLET WRENCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (Model 3000 only) COLLET NUT VENTILATION BRUSH COVER OPENINGS (one on each side) COLLET WRENCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (Model 3000 only) COLLET NUT VENTILATION BRUSH COVER OPENINGS (one on each side) COLLET WRENCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (Model 3000 only) COLLET NUT VENTILATION BRUSH COVER OPENINGS (INTEGRATED BUTTON WRENCH/NOSE CAP CORD (MODE SWITCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (MODE SWITCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (MODE SWITCH High Speed Rotary Tool EZ TWIST[™] SHAFT LOCK INTEGRATED BUTTON WRENCH/NOSE CAP CORD (MODE SWITCH HIGH SWITCH SWITCH HIGH SWITCH HIGH SWITCH HIGH SWITCH HIGH SWITCH SWITCH SWITCH OPENINGS VENTILATION BRUSH COVER OPENINGS (one on each side) Model number 100 200 3000 Voltage rating 1,15A HI 1,15A, LO 0,80A 1,2A No load speed no 35,000/min no 15,000/35,000/min no 5,000-32,000/min no 5,000/35,000/min no 5,000/3 1/8" 1/32, 1/16", 3/32", 1/8" DM 2610015339 05-11:DM 261001539 05-11:DM 26100159 05-11:DM 261059 05-11:DM 26100159 05-11:DM 261059 05-11000000000 TIGHTEN LOOSEN COLLET NUT — To loosen, first press shaft lock button and rotate the shaft preventing further rotation. ! CAUTION Do not engage lock while the Rotary Tool is running. With the shaft lock engaged use the collet nut if necessary. The collet nut must be loosen threaded on when inserting an accessory. Change accessories by inserting the new one into the collet nut until the accessory shank COLLET NUT is gripped by the collet. Avoid excessive tightening of the collet nut when there is no bit inserted EZ TWIST^M INTEGRATED WRENCH/NOSE CAP (Model 3000 only) The nose cap of your tool has an integrated wrench. Unscrew the nose cap from the tool, line-up steel insert on inside of cap with collet nut. With the shaft lock engaged twist nose cap clockwise to tighten, and counterclockwise to loosen. COLLET S — Four different size collets (see illustration), to accommodate different slank sizes, are available for your Rotary Tool. To 480 1/8" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET NUT IDENTIFICATION RINGS 481 3/32" 482 483 COLLET 1/16" 1/32" COLLET 1/16" 1/32" COLLET 1/16" 1/32" and remove the old collet. Insert the unslotted end of the collet in the hole in the end of the tool shaft. Replace collet nut on the shaft. Always use the collet sizes. COLLET IDENTIFICATION CHART Collet sizes can be identified by the rings on the back end of collet. 1/32" Collet has no rings. (Included in most tool kits on the tool) DM 2610015339 05-11:DM 261001539 05-11:DM 26100159 05-11:DM 261059 05-11:DM 26100159 05-11:DM 261000 ACCESSORIES — For precision work, it is important that all accessory or collet a 1/4 turn. Retighten collet nut and give the accessory, slightly loosen collet nut and give 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 points, before each use, with the 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. 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 is in use. 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 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 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 is just the opposite - a high-speed, low torque tool; the Rotary Tool is just the opposite - a high-speed tools, the speed combined with the accessory mounted in the collet does the work. You don't 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 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 to it, as you do, for example, when drilling a hole. It is this high speed tools, you not only guide the tool, but simply hold and guide it. In the low speed tools, you not only guide the tool, but simply hold and guide it. 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. 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 check our website at www.Dremel.com. Using 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 is to get the "feel" of it. Hold it in your hand and feel its weight and balance. A). Always hold the tool away from your face. DM 2610015339 05-11:DM 2610015339 05-11:DM 2610015339 05-11:qxp 5/12/11 9:40 AM Page 11 Accessories can be damaged during handling, and can fly apart as they come up to 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, For best control in close work, grip the Rotary Tool like a pencil between your thumb and forefinger. etc.) to begin. Concentrate on guiding the tool over the work using very little pressure from your hand. Allow the accessory 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 The "Golf Grip" method of holding the tool is used for more aggressive operations such as grinding a flat surface or using cutoff wheels. WARNING Wear Eye Protection Whenever you hold the tool, be careful not to ! CAUTION cover the air vents with your hand. This blocks the air flow and causes the motor to overheat. Questions or Problems? Call 1-800-437-3635 or check our website at www.Dremel.com Operating Speeds To select the right speed for each job. use a practice piece of material. NOTE: Speed is affected by voltage changes. A reduced incoming voltage will slow the RPM of the tool. (MODEL 100) On the switch is on, the tool runs at 35,000 RPM. (MODEL 200) On the switch. When the switch is on, the tool runs at 35,000 RPM. indicator is on the low setting, the tool runs at about 15,000 RPM. When the switch indicators marked with a line. Slide to the number on the housing to select the operating speed needed from 5,000 - 32,000 RPM. (MODEL 3000) On the variable speed model, there are switch indicators marked with a line. You can refer to the charts on page 19, 20, 21 and 22 to determine the proper speed, based on the material being worked and the type of accessory being used. These charts enable you to select DM 2610015339 05-11:DM 2610015339 Rotary Tool is controlled by setting this indicator on the housing. The Settings for Approximate Revolutions Per Minute on Rotary Tool Variable Speed Model 3000. Switch Setting Speed Range 2 15,000 - 12,000 RPM * 19,000 - 15,000 RPM * 19,000 RPM * 19 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 speed to avoid wire discharge from the holder.) If you need it, single-speed models also can have speed control by using a Model 221 foot control unit. Not for use with two speed ! CAUTION or variable speed models 200 or 3000. Use with external speed control will damage the variable/two speed electronics. Higher speeds are better for carving, cutting dadoes or rabbets in wood. Hardwoods, metals and glass require high speed operation, and drilling should also be done at high speeds. 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. 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 19, 20, 21 and 22. 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 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 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! Use only Dremel®, high-performance accessories. ! WARNING DM 2610015339 05-11:DM 261001539 05-11:DM 26100159 05-11:DM 26 service be performed by a Dremel Service Facility. To avoid injury from ! WARNING unexpected starting or electrical shock, always remove plug from wall outlet before performing service or cleaning. CARBON BRUSHES The brushes and commutator in your tool have been engineered for many hours of dependable service. In order to prepare your brushes for use, run your tool at full speed for 5 minutes under no load. This will properly "seat" your brushes, which extends the life of both your tool. To maintain peak efficiency of the motor, we recommend every 40 - 50 hours the brushes be examined. Only genuine Dremel replacement brushes specially designed for your tool should be used. MAINTENANCE OF REPLACEABLE BRUSHES ON MODELS 100, 200 & 3000 The brushes should be inspected frequently when tools are used continuously. If your tool runs at a reduced speed, check the brushes. FIG. C ! CAUTION To continue using the tool in this condition will permanently damage your tool. Follow these steps to check/change the rotary tool brushes: 1. With the power cord unplugged, place the tool on a clean surface. Use the tool on a clean surface. Use the tool by pulling on the spring that is attached to the carbon brush. If the brush is less than 1/8" long and the end surface of the brushes will not wear out simultaneously. If one brush is worn out, replace both brushes. Make sure the brushes are installed as illustrated. The curved surface of the brush must match the curvature of the commutator. 3. After replacing brushes the tool should be run at no-load; place it on a clean surface and run it freely at full speed for 5 minutes before loading (or using) the tool. This will allow the brushes to "seat" properly and will give you more hours of life from each set of brushes. This will also extend the total life of vour tool since the commutator surface will "wear" longer. BRUSH CURVED END OF BRUSH MUST MATCH CURVATURE OF HOUSING ! WARNING DM 2610015339 05-11:DM 2610015339 Under normal use they will not require lubrication. Cleaning To avoid accidents always disconnect the tool from the power supply before cleaning tools 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. Certain cleaning agents and ! CAUTION solvents, ammonia and household detergents that contain ammonia. Extension Cords If an extension cord is ! WARNING necessary, a cord with adequate size conductors that is capable of carrying the current necessary for your tool must use 3-wire extension cords that have 3-prong plugs and receptacles. NOTE: The smaller the gauge number, the heavier the cord, RECOMMENDED SIZES OF EXTENSION CORDS 120 VOLT ALTERNATING CURRENT TOOLS Tool's Cord Length in Feet Cord Length in Meters Rating 25 50 100 150 15 30 60 120 3-6 18 16 14 0.75 0.75 1.5 2.5 6-8 18 16 14 12 0.75 1.0 2.5 4.0 8-10 18 16 14 12 0.75 1.0 2.5 4.0 10-12 16 16 14 12 1.0 2.5 4.0 - 12-16 14 12 - - - - - Dremel Accessories Use only Dremel®, high-performance accessories. Other accessories are not ! WARNING 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 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 accessories, we recommend that in the beginning you purchase a complete set of four collets. 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 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. DM 2610015339 05-11:DM 2610015339 Screw Mandrel N° 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. EZ Lock Mandrel N° 402 The Dremel EZ Lock makes accessory changes easy as PULL - TWIST - RELEASE. The one-piece mandrel design simplifies the process of changing cutting wheels and makes it easy to cut through plastic. 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" shank. Aluminum Oxide Grinding Stones (orange/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 them 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 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. (Not recommended for drilling) DM 2610015339 05-11:DM 2610015339 available. For best results wire brushes should be used at speeds not 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. 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 are good for general purpose cleaning. 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 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 to the work in such a way that as much of the brush to the work in such a way that as much of the brush to the work will result in wire breakage and shortened brush life. CORRECT: Wire tips doing the work. Polishing 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. No polishing compound is needed when using the 425 Polishing Wheel. Aluminum Oxide Abrasive Wheels Use to remove paint, deburr metals. Available in fine and medium grits. 1/8" shank. DM 2610015339 05-11:DM 261001539 05-11:DM 2610015339 05-11:DM 261001539 05-11 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 medium and coarse grades. Flapwheels grind 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. Do not exceed 15,000 RPM in speed, 1/8" shank. Grinding Wheel Use for deburring, removing rust, and general purpose grinding. Use with Mandrel #402. operations. Use them 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 other soft materials. Use with Dremel No. 335 Router attachment and No. 231 Shaper/Router table. Cutting Wheels These thin discs of emery or fiberglass are used for slicing, cutting off and similar DM 2610015339 05-11:DM 2610015339 05-11:QXP 5/12/11 9:41 AM Page 18 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 Mandrel No. 401 is used with the felt polishing tip and wheels. Thread the tip on to the screw carefully. cutting wheels and sanding discs. Higher speeds, usually To replace a band on the Drum Sander, loosen the screw without removing it to contract the drum by tightening the screw once again. down straight on the screw Mandrel, and be turned all the way to the collar. maximum, are best for most work, including cutting steel. Which is shown here. Before each use, check to ! WARNING 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 vou or bystanders. DM 2610015339 05-11:DM 261001539 5,000 - 8,000 RPM's 4 = 9,000 - 15,000 RPM's 6 = 16,000 - 21,000 RPM's 8 = 22,000 - 27,000 RPM's 10 = 28,000 - 32,000 RPM's 10 = 32,000 RP 10* 8* 4 6 - - - 112 10* 10* 6* 4 6 - - - 113 10* 10* 6* 4 6 - - - Diamond Wheel Points Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood /Plastic Brass, etc. Stone 7103, 7105, 10 8 - - - 10 10 10 7117, 7120, 7122, 7123, 7134, 7144 Structured Tooth Tungsten Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood Wood /Plastic Brass, etc. Stone 7103, 7105, 10 8 - - - 10 10 10 7117, 7120, 7122, 7123, 7134, 7144 Structured Tooth Tungsten Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood Wood /Plastic Brass, etc. Stone 7103, 7105, 10 8 - - - 10 10 10 7117, 7120, 7122, 7123, 7134, 7144 Structured Tooth Tungsten Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood Wood /Plastic Brass, etc. Stone 9931, 9932, 10 8 4 - 6 - - 9933, 9934, 9935, 9936 DM 2610015339 05-11:DM 2610015339 speed settings can be achieved on 100 and 200 series tool. For certain applications, a variable speed tool is required. 2 = 5,000 - 27,000 RPM's 10 = 28,000 - 32,000 RPM's 10 = 28,000 - 27,000 RPM's 10 = 28,000 - 32,000 RPM's 10 = 30,000 RPM's Number Wood Wood /Plastic Brass, etc. Stone 9901, 9902, 10 8 4 10 6 8 8-10 8-10 9903, 9904, 9905, 9906, 9912 9909, 9910 8 8-10 8-10 9911 High Speed Router Bits Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood Wood /Plastic Brass, etc. Stone 612, 640 10* 8 • - - - - - 615, 617, 618, 10* 10 • - - - - 650, 652, 654 10*8 • - - - - - Silicon Carbide Grinding Stones (blue/green) Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood /Plastic Brass, etc. Stone 83142, 83322, - - 6 10 4 6 10 10 83702, 84922, 85602, 85622 Abrasive Wheels/Points Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood Wood /Plastic Brass. etc. Stone 516 4-6 - 8 6 - - - 500 4-6 - 6 - 8 4-6 - - - EZ541GR - - - 6-8 4-6 - - - EZ541GR - - - - EZ541GR 8175, 8193, 8215 DM 2610015339 05-11:DM 261001539 05-11:DM 261001539 05-11:DM 261001539 05-11:DM 261001539 05-11:DM 261001539 05-11:DM 261001539 required. 2 = 5,000 - 8,000 RPM's 4 = 9,000 - 15,000 RPM's 6 = 16,000 - 21,000 RPM's 8 = 22,000 - 27,000 RPM's 10 = 28,000 - 32,000 RPM's Chain Saw Sharpening Stones Catalog Soft Hard Laminates Steel Aluminum, Shell/ Ceramic Glass Number Wood Wood /Plastic Brass, etc. Stone 453, 454, 455 - - 10 - - - Cutting Accessories Catalog Soft 10 2-10 - 407, 408, 432 2-10 2-10 2-6 10 10 2-10 2-10 - 411, 412, 413 6 6 2 - 2 - - -





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