Grinding stone color guide

We use cookies to improve and personalize our services, marketing and for social activism. Please see our privacy policy for more information on how and why we use your data. You can change your cookie settings at any time. By continuing, you consent to the use of our cookies. Find My Tool Gary Rogowski demonstrates his method for this traditional but powerful breadboard finish. Mike Pekovich has a sleigh for every job: a sleigh to cut dovetails, one with a sliding fence for box joints, a sleigh with a lower fence and a stop to cut dadoes, one with a high fence to cut tenons, and a dedicated sleigh for mitered boxes. Chris Schwarz has been working on his tool cabinets for decades, and sees them as the perfect combination of protection, access, and flexibility. Known for his work efficiency, Mike Pekovich has built a few iterations of his sleigh to make mitered boxes. In this video, he shows the progression of the sleigh he built, and announces the final version. Or is it? Each grinding wheel comes with a sticker label on its face. The label provides a lot of information regarding the composition of the wheel. This system is a series of numbers and letters that systemage the components of the wheel. The first letter indicates the type of abrasion used, using the letter A for aluminum oxide or C for silicon carbide. Next the wheel manufacturer will point out the particle size, with the appropriate figures showing rough, medium or smooth range. The class is indicated as the alphabet, with the softest layer being the A end of the alphabet, and Z being the most difficult. The structure is indicated by a number assessment, but its use is optional. Finally, the type of link specified by the abbreviation of the type of link used, V for vitrified, S for silicate, etc. Wheels sometimes have different colors and can represent different types of wheels. If the Norton Company is used as a reference, the following color codes will apply to the best materials and processes for each wheel: White Aluminum Oxide - Used on Tool Steel and Steel Mold Pink or Blue Aluminum Oxide - Used on Steel Alloy Tools Off-White/Light Grey Monocrystalline Aluminum Oxide - Better to Hold Than Above, used on high-speed steel as well as Light Blue Synthetic Aluminum Oxide - Works on all non-colored metal materials, used in high-production applications Gray Mixed Aluminum Oxide - Used on non-central or cylindrical applications Silicon blue carbide - Used on colored materials such as aluminum and carbide tools. Page 2There are some safety issues that a mechanic needs to be concerned about when dealing with grinding wheels. Mostly, grinding wheels can crack. Most machines have safety protection to deal with this problem, but remember that a broken cars can hurt mechanics as well as people working nearby. Various conditions can create this problem such as over-cutting depth, poorly balanced wheels, damaged wheels or improper assembly on the machine. It is the best Continue grinding the wheel stored in an area that is dry and enclosed to avoid objects or liquids in contact with the wheels. It is also a good idea to conduct a ring test on a grinding wheel before using it. A ring test can locate an invisible crack. To perform this test allow the inner diameter of the wheel to rest on one finger of your hand and then gently touch the wheel with the plastic handle of a screw driver or wooden handle of a hammer. If you hear a clear metal ring, the wheel is probably in good shape. If the wheel cracked the ring would be somewhat dull and strangle me using a dremel-clone. It has a three-color grinder: blue, orange and pink red, three colors in the same set. I can not see the difference in hardness, but it must be different, so ... Can you help me in what color use in that task? Thank you for taking your time! 12-09-2007, 11:39 PM #31 If you buy an air compressor to operate an air tool, be sure to check the requirements of the tool to make sure the air compressor you buy will work. For example, a 1/4 die grinder may require 100psi at 2cfm to need an air compressor with these numbers at a minimum to work correctly (I don't look at my die grinder, my number is outside the top of my head – although 100psi is probably the minimum for my die grinder). Now, you can get away with a little less in an air compressor, but not as much for the tools to work as it should. In addition, most air control tools (such as a die grinder) have bearings that need to be lubricated. Before each use and during use if working for a long time, a few drops of oil are dropped into the engine's air input (I use Marvel Mystery Oil). Cheers 12-10-2007, 12:40 am #32 That and most compressors cost lower / have a fairly low task cycle, so you will have to wait for the compressor to cool down. 12-10-2007, 3:40 #33 I did not type them, they are from dremel forums long time ago ... High-speed cuter: These bits are made of high-speed steel and have many shapes and sizes. They can be used to shape and empty most metals and wood. Tungsten carbide cuter: These cut machines last longer than high-speed steel. Structured tungsten carbide cutter: Teeth cut quickly for use on fiberglass, wood, plastic, epoxy and rubber. Cutting wheels: Emery wheels for cutting and cutting plastic and metal. Diamond Wheel Points: To work in fine detail on wood and hard surfaces such as ceramics and glass. Small engraving machine: Used for engraving and carving many materials. Aluminum oxide stone: For grinding, de-loading and grinding general purpose. These stones are available in many shapes. Silicon carbide grinding stones: Especially for grinding hard steel, ceramics, glass and other hard materials. Brush accessories: Both bristles and wires are available for cleaning and polishing jewelry and metal surfaces. High-speed router bits: The most common router bit shapes are available in small sizes for spinning tools. Router attachments and tables are also available for expansion of this mini router. Sanding accessories: small plates and drums are available to get into hard-to-reach places. Polishing accessories: Rubber and polished wheel feel and points are available, as well as fabric wheels. These are ideal places for hard-to-reach places. Engraving cuter: Ideal for detailed engraving, wood carving and touting, fiberglass, ceramics, plastics, jewelry and soft metals. Do not use this bit with hard material. Use higher speeds for hard forests, slower speeds for metals and very slow speeds for plastics (to avoid melting at the point of contact). 106 109 High speed cutter: Ideal for shape, hollow, groove, groove, placing and creating descending holes in soft metal, plastic and wood - especially on conical surfaces. Use the edges of the cutter (rather than the head) to cut efficiently. The cutting head is poor and can break under pressure. Use higher speeds for hard forests, slower speeds for metals and very slow speeds for plastics (to avoid melting at the point of contact). 118 Bristle Brush: Ideal for cleaning and polishing in general - especially in hard-to-reach places, such as grooved surfaces. Its nylon fur makes it great for polishing silverware, jewelry and other precious metals. Do not run more than 15,000 rpm. Keep a light touch, allowing the tips of the brush to work. Too much pressure can break the hair. Before use on a material, allow the tool with the brush to run at the operating speed for at least a minute to discharge any loose bristles. Make sure no one stands in front or fits the brush. This hairbrush can be used with polishing compounds. 403 Sanding Band: Ideal for rough wood and smoothing and fiberglass as well as removing rust from metal surfaces, shaped rubber surfaces and more. Use slow speed with this accessory and keep a very light touch to sand more efficiently than 407 (60 grit) 408 (60 grit) Cut-Off Wheels: Ideal for cutting, moaning and pruning all kinds of materials including metal, wood and ceramics. You can use it to cut screws and rust bolts, make slots in the screw head, cut molding and more. 409 Sanding Disc Aluminium Oxide: Ideal for rough wood and wood smoothing and fiberglass as well as removing rust from metal surfaces, shaped rubber surfaces and more. 411(180 grit) Felt Polish Wheels: When polishing precious metals such as gold and silver, use this bit with #421 polished compounds (jeweler's rouge) and apply lightly. 414 Polish compound: Ideal for polishing or brightening most metals and plastics. You can also use polishing compounds to remove light surface defects. When working with felt bits or fabrics, keep the tool speed as low as possible. This allows the compound to gently deposit on bits. 421 Felt Polish Point: Ideal for polishing most metal and plastic surfaces. When polishing precious metals such as gold and silver, use this bit with a polishing compound #421 (baker's rouge) and apply lightly. 422 Emery Ba Wheels: A disc with Emery's good abrasion. Ideal for cleaning and polishing rough surfaces. 425 Edes for cutting, trimming and trimming all kinds of materials including metal, wood and ceramics. You can use it to cut screws and rust bolts, make slots in the screw head, cut molding and more. Keep a light touch, as the wheel will break under too much pressure. 426 Carbon Steel Brh: Ideal for cleaning and removing rust and corrosion from items made of brass, copper or other soft-colored metals such as tools, door knobs, auto parts and electrical contact. You can also use a wire brush to create an artistic effect on coarse grain wood. Its shape makes it well suitable for cleaning flat surfaces and going into hard-to-reach places such as slots. Do not run more than 15,000 rpm. Keep a light touch, allowing the tips of the brush to work. Too much pressure can break the wire feathers. Before use on a material, allow the tool with brush to run at the operating speed for at least a minute to discharge any loose wire feathers. Make sure no one stands in front or fits the brush. Never use carbon steel brushes on items made from stainless steel, aluminum or other non-colored metals. This prevents rust and pollution. For the same reason, always store carbon steel brushes in addition to stainless steel brushes and items made of stainless steel, aluminum or other non-metallic coloring. I didn't type them, they are from the dremel forum long time ago... ---------- From: Roberto Theme: A Dremel Manual (useful for beginners!) 5 Days: 16/6/2003 12:27:34 Below a BUNCH of useful information for those (starting) using the spin tool. For those who are just starting out using a moto tool and bits, I've written down some useful information. Besides, I also added some useful tips that can be useful for more experienced users! I post this information because quite often users find the books that come with the tool is not very useful to start with. People who only have their spin tool often get lost in the number of different bits available today or they just give up using this great flexible tool (really: flexible collection of available bits) after they achieve unexpected results after reading the manual and playing around with it for only a short time. * I would also like to take this opportunity to thank others for passing some recommendations and additional information to me after reading this or an earlier version of this tutorial. * GRINDING STONE DISTINCTION: Grinding stones are available in many shapes, sizes, gritts/layers and in two popular materials. The two basic materials (grinding) available are: Silicon carbide (carborundum: green bits - very hard (hardness 9.5) and Aluminum Oxide (emery/korund: bits brown, orange, pink and gray - a little softer but still very hard (degrees 9)). Grinding stones are often used to remove materials Hard or etched materials in hard materials, such as iron, steel, stone, ceramics, glass, etc. There are many shapes available because each person prefers certain shapes for certain work. However, grinding stones will wear in time (especially when used at low speeds!) and bits will loose shape. To restore the shape of a grinding stone or to create your own shape there is a simple but VERY HANDY accessory available: Stone dressing from Dremel. It's just a little bar of Silicon Carbide. Keep your rotation (about half the speed working well) grind the stone to rock dressing and simply re-shape/clean your grinding stone. Grinding stones should be used at high speeds. >> for those interested: the pure powder of aluminum oxide is bright white and silicon carbide is black. To code the gritt color of the grinding stone and to link the grinding particles together manufacturers use additives for pure materials. More pure stone has a quality called friability - that is it easy to fracture along the crystal face. This makes the particles grind to maintain their sharpness but it wears faster. This is because the edges of the exposed crystals wear them rounded edges and on the more pure stones (used to achieve sharper edges on the grinding piece) the worn crystal faces peel off exposing the sharp edges. However the darker stones wear slower but generate more heat and create a rougher finish. << diamond-coated bits: Diamond-coated bits have a thin layer of diamond beads. Cheap diamond-coated bits have only a thin layer, the layer is not very saturated with diamond particles and carrier materials/production processes of worse quality (diamond particles don't stick to it/are kept on it very well). Diamonds are extremely hard (hardness 10) and do not wear fast they can be used on most materials (easily melted materials are excluded). These bits are available in many shapes and they can be used to remove materials or for engraving. These bits work best at medium to high speeds. Diamond-coated wheels often look exotic because of their gaps and holes in the wheels: is this for better cooling (and saves diamond-coated area to reduce production costs?). DISTINGUISH SANDING BITS: Sanding bits are based on sandpaper (paper can be replaced with linen), coated with grinding beads and they are available in different grits (= how many sanding beads fit in a fixed sized area: low gritt = sanding course, high gritt = good sanding). Gritt expressions are also used for crushing stones and grinding powders. The grinding particles of sanding bits are made of hard material but only have a thin layer of sanding material on the bit. So after they get worn through layers of sanding material bits turn useless. Low-quality sanding bits have lower quality grinding material (hardness: emery instead of carborundum, containing different gritt particles) and particles stick to paper or linen very well (wear faster). Bit sanding is often used to shape soft materials or to finish/prepare wood and metal surfaces, to remove a coating (e.g. paint), soft stone, etc. Sanding bits as well as grinding bits is very inefficient tool for quick material removal: randomly shaped and randomly oriented particles. Cut machines are much more efficient / fast. However, because of the in efficiency, these bits are great for detailed work because the material is removed relatively slowly. Besides, there are usually no cuters available to cut hard material so grinding bits/wheels/discs is the only option. The gritt of sanding drums from Dremel can be visually distinguished. Other sanding bits also have numbers on it (80 = gritt 80 (rough), 120 = gritt 120 (smoother), etc. The numbers on the sanding disc are printed on the back of the wheel. Sanding bits are often used at medium to higher speeds. TIP: When using a sanding disc it quite often happens, you need to have the sanding side at the bottom of the bit instead of at the top. When you always keep TWO (one side up, the other face down) sanding the disc on the mandrel, you won't have to turn the disk all the time. Another useful tip is to mark the sanding disk bits. Sanding plates are difficult to distinguish from each other (gritt). You can mark the top of the head of the screws of mandrels. The head is divided into two by slots in the middle of the head of the screw. To mark the bits only take advantage of two excess areas: • Rough gritt disk -> grind the top of the screw so that it gets rough. • Medium gritt plate -> to grind half of the screw head and polish the other half. • Good gritt disc -> polished top of screw. To make the difference even bigger, you can color dark rough areas with a water resistant marker or whatever. >> For those interested: The sanding discs available from Dremel are near jackets while there are also open disc jackets available. Closed plate coats have more grit per unit area and are better for tougher materials and produce a better finish. The open coat is better for softer material as it clogs less easily due to the sparseness of the grinding material. You can use a soft rubber sheet (such as the rubber sole of the worn shoe) to unclog the clogged sanding disc. << DISTINGUISH CUT-OFF WHEELS: Cutting wheels are available in different diameters, thicknesses and base materials. Two basic materials are: normal and reinforged. The normal ones (brown) are made of solid grinding material (looking at the colors I think they are made of emery), they last longer and they are quite fragile, the finished ones (black) are a combination of crushing material (looking at the color, which can be made of silicon carbide) and strong fibers that hold everything together. They are less fragile (a little flexible) and they are shorter (harder material but a lot of fibers). The cutting wheels are very thin only used to cut through materials. Thicker ones can also be used as a thin grinding stone for quick grinding. Thinner ones cut faster than thicker ones. Besides cutting through materials you can also only cut slots (e.g., the head of a rusted screw: cut a slot and use a flat screwdriver to remove the screws). All the fastest and longest cutting wheels last when used at high speed (maximum). Those reinforged should not be used on either side as a grinding stone (the entire fiber layer will be ruined). A special cut-off bit is the mini-saw attachment. The actual cutting wheel is a small thin saw blade, made of HSS (high-speed steel). This attachment is very effective for cutting soft materials (without melting easily) really quickly, leaving a really smooth cut. Use mini-saw attachments at higher/highest speeds and make sure the saw blades are cut all the time; Prevent the saw blade from being rotated against the workpiece without making much cutting. The mini-saw attachments were originally designed for cutting wood. However, nothing prevents you from using it on other materials! Please always check that the serrated blade's teeth are pointing in the right direction (also when purchasing a completely new assembly attachment!). By the way: it is normal that attachments are based on a flexible core (Flex-Shaft, Mini-Saw, Right Angle, etc.) that produces a strange (maybe loud) noise and that's nothing to worry about. DISTINGUISH ABRASION AND BIT POLISHING: There are (Emery impregnated) Polishing wheels, (Emery impregnated) Polishing points, abrasive wheels, abrasive points, abrasive buffs, etc. All bits have a different layer of polishing. Results may even vary depending on the material it is used on. The harder bit is longer it lasts (first two). More flexible bits (hard - flexible: Abrasive Wheels, Points, Buffs) are more convenient to use but give different results. Abrasive wheels and points are excellent for deburring, before polishing, roughening onto a smooth (painted?) surface. Abrasive buffs are great for smoothing out abnormal/swirling left from other bits on the surface. The second type is available in two gritts (dark (medium) and sandy (coarse) colors). In general, it is best to use these bits at medium speed. Polishing: There are several feel and cotton wheels and bits available and polishing compounds. To put the polished compound on the bit just run at low speed and push little gently in the compound. The compound will melt and the melted compound will melt into the feel/cotton. If the bit looks the same red, you can start polishing the workpiece at a higher speed. You may need to do some runs of the process to complete the entire cast polish. TIP: While polishing there are some cooling points down to the compound on the workpiece on the sides. Run through these points several times until no new points appear anymore: the polished compound seems to be gone and the surface looks (more) bright Then there's the Time to stop or to get new polishing compounds into bits for a next run. After polishing, you can remove the oily glossy with a dry soft cloth. Perhaps there are also some weak solvents such as alcohol that can be useful to remove all the left overs of (fat-based) polishing compounds. Polishing works best at low to medium speeds as the soft polishing wheel will be able to adjust its shape to the shape of the polished surface. DISTINUISHING BRUSHes: Brushes are available in a number of shapes and materials. Depending on the brushed material, you can choose from brushes with wires made of e.g. Nylon, brass, stainless steel or carbon steel. In this order, they vary from soft to hard. To separate carbon steel brushes more easily from Dremel stainless steel brushes use a yellow shaft for stainless steel brushes. • TIP: Do not use carbon steel brushes on materials that initially do not tend to rust. If you use those brushes on those materials, the brush can leave an invisible thin layer (in scratches!) of Carbon Steel (worn) on the workpiece that will rust in a solid wet environment and the extremely thin layer that has turned into rust will surely be visible! • TIP: you can also use a brush along with other materials (e.g. polishing compounds). Reading this you'll probably think why it will work, the thin brush wire will scratch the surface anyway! ... No, not if the material of the brush is softer than the material to be brushed. Besides, each bit (with or without liquid additives, fresh water, etc.) will create different effects on different materials. Just play around with bits (and additives) on different materials and you'll get surprised by unexpected/different results. • TIP: When metal brushes are used for a while all wires are faced in one direction. The effectiveness of the brush is more significantly reduced. To restore this just use the brush in one (for example) battery supply screwdriver, rotate in the inverse direction, push bits on some scrap material. DISTINGUISH METAL BITS/CUT MACHINES: They are also available in a variety of shapes, sizes, basic materials and some are specially designed for certain jobs. All cut machines are usually used at higher speeds to the maximum. Of roughness, you can run at a lower speed if the material is cut soft or when it melts easily. There are two basic materials commonly used for tools: high-speed cut-off machines (such as ordinary drills made of) and tungsten carbide cut machines (hard but still softer steel e.g. syringe/quartz). The bits designed for special purposes are all made of tungsten carbide. High-speed cutoff machines (router bits are also made of the same material) are used to remove materials from/etched in wood, soft metals, plastics (if not melted) and other non-very hard materials. Tungsten carbide cuter can also be used on metals (such as bearings, molds, spring steel, etc.) and other hard materials. Some special purpose cut machines (such as brick cut machines) may have and they can be used to quickly cut bricks, glass, green things, etc. All metal bits can be hard to distinguish but when you use your bit a few times you will automatically notice at a glance which bit is. In the beginning a lot of bits will look similar but soon you will be able to distinguish them from each other just by not noting small differences. Examples such as tile cuter, tungsten carbide cutter, plaster wall, multi-purpose bit, mortar removal bit: Tungsten carbide cut machine is darker gray than other bits and their shafts are shiny polished, other cut machines are lighter gray and have less shiny shafts / are worse finished. Exept for structured tungsten carbide cut machines: they have a really translucent shaft because the shaft itself is not made of tungsten carbide. However, they are easily recognizable due to the extraordinary view of the cutting part: a series of large spines close together. The tungsten carbide cutter has a silvery structure and a tooth-shaped wheel with a yellow structure. Structured tungsten carbide cuter is not the most efficient cutter because they consist only of randomly shaped/oriented spines. However, they can cut soft material quickly because the spines are relatively large. An example of a material that can be cut quickly with these bits is thermoharder resin (the resin is arranged in two basic categories: thermoharders and thermoplasts; the first is the powder-producing resin when the beep is cut, the later is peeled off (with a knife/cutter), which is relatively soft and melts easily due to friction (when beeing grinding/sanding/cutting)). An example of products often made of thermoharders are power outlets and other electrical products around the house. Anyway, here are some differences between some other bits: • Tilecutter has small sharp individual teeth all the way to the top. • Cut carbide tunsten has close to each other cutting edges, spiraling all the way te to the top. • Plaster wall cuter has the edges cut apart not all the way to the top. Neir spiral head stops, the head looks like flat. • Multi Purpose cutting has the cutting edge far eachother all the way to the top as a drill. But a regular drill does not have cutting edges of such a narrow shape (the usual drill bits are produced by twisting a grooved wire and only the head is sharpened; the multipurpose cutter has been cut/crushed completely to its final shape). • Mortar removal bits have a long shaft (do their job in an angle with attachments) and only have a short cut area (mortar is always just a thin layer). IMPORTANT ABOUT USING THE CUTTER: always make sure you're doing some cutting; Prevent the bits from being spinning against the workpiece without making much cutting. There are always some variables that need to be adjusted depending on the material being cut: rotation speed, pressure and cutter movement speed along the workpiece. Just play around with these variables and you'll build to cut most effectively. This is especially important for routers. It's not hard to learn, it's just a matter of playing around and testing and errors. If you have problems with the constant cutting speed (you may accidentally cut too far at the corners / detailed curves), you should best cut the beat: beat the workpiece and relax and turn on. If you just slow down the speed of the cutter tool worse and if you cut slowly your bit can get dull quickly / workpiece can change color or it can even burn and smoke. What about Highspeed Cutters and Carving Points? Both are just Highspeed Cutters but those called Point Engraving only have their names because their shapes are most practical for the carving work. If you want to etch with bits called Highspeed Cutters please don't hesitate to do so. Some tungsten carbide cut machines also have small heads and are well suitable for engraving detailed work on soft as well as hard materials. This way, this counts for ALL the bits: they have certain names and they come with a purpose description but rough in the end it's up to you which bit you use for your work. For example bits cut bricks: they say it's to cut bricks ... Yes, that's right. Ok it works for bricks as well but never written off they also work really great on hardwood, glass, hard metal, etc. It's just a matter of testing and error: if you feel like a particular bit will work for a particular job that you have in mind, just try it and usually the bits really do a great job! Of rough when beeing a newbie the result of this approach is not always as expected but when you try it, you know it! SOMETHING ABOUT HARDNESS OF BITS: • Diamond-coated bits can be used on all materials without getting dull at the same time as diamonds are harder (almost) any existing material. • Silicon carbide grinding stones are harder than aluminum oxide grinding stones. • Sanding, abrasion, emerald impregnation bits, polishing points, cutting wheels, etc. are based on properties located between aluminum oxide and silicon carbide. • Tungsten carbide ((Structured Teeth) Tungsten carbide cuter, all special purpose cuter such as Multi-purpose, Brick Cutting, Mortar Removal, etc.) is much more difficult than HSS (high speed cutter, etching point, router bit, drill, etc.) • from hard to soft brush: carbon steel, stainless steel, brass, nylon (Carbon steel brushes have a silver and stainless steel shaft that has a yellow shaft to distinguish them more easily, by the way). • When using two materials on each machine with the same hardness (e.g. bits of aluminum oxide on ruby or ceramics) bits will wear but the workpiece will wear faster/loose contest. This is because moving particles have more energy than less moving material/standing still. However, usually the bits are selected with excess hardness so they last longer. INCREASE THE LIFE OF YOUR BIT: • When using a cutter always make sure that the bit is doing some and NOT just rotate against the workpiece without moving. In the second case the exposed area gets hot and when metals (including hard metal/steel) get hot, they get softer and dull quickly. • Lubrication increases the lifespan of a little as well. This is especially useful when using bits that effectively depend on the sharpness of the grain outer layer (coated bits, grinding structures/teeth, etc.). These bits will not work anymore as soon as the outer particles/teeth have worn out. Lubrication helps the particles/teeth keep cooling. For lubrication, you can use water. To help water stick to the workpiece/bit, you can add some soap or some lubrication. This oil contains soap-like ingredients (emulsifiers) that cause water and oil to form emulsifiers so that oil and water do not reject each other and stay mixed. The second type of lubrication prevents metal parts from rusting when they are not well dried/cleaned afterwards. There are many lubricants available, all of which have certain different properties/purposes. • Never force bits into the material, let the speed of the work be done. Make sure the tool bogs down just a little to get enough speed left. Many people use ordinary cuters or cutting wheels on a spinning tool the wrong way: they push too hard (for faster cutting) and they notice the wheel becomes smaller faster at work. When you barely push on the wheel and let the high speed do the engine work barely bogs down and runs at high speed the sparks fly around and the workpiece is cut like butter. After work is done the cutting wheels are virtually no worn/smaller. To avoid the wheel getting stuck in a deep slot, you should rotate (direction: parallel to the slot is cut, make a long slot) a little with a little from the beginning. In this way, the slot is slightly wider than the wheel (because you can never make a perfect move along the slot: the wheel will touch the sides of the slot but in a slightly random angular way). OTHER USEFUL TIPS: • IMPORTANT! Almost constantly there are small particles/objects flying around the area at high speed during the grinding/sanding/cutting (chip!) /polishing (polishing compound!) /brushing (wire!) process. To prevent your eyes from being affected by one or more of these objects, you should always wear safety glasses/gogg gogg goggies. When using tungsten carbide cutter on hard metal/bending material you should also protect bare skin: while cutting there are constantly small sharp itching/annoying chips produced that can irritate your skin for days! • When placing bits in the tool do not slide it all the way in before tightening the collet particles. Keep some space left at the bottom of the bit. After loosening the collet particles to change slightly again just push the existing one down and it will come loose from the collet. If you don't do it this way, the bit can still be held tightly by the collet even though the collet belt is loosened. • If bits of enough in one surface because the thickness of the tool is in the way, you can remove the collar of the tool (particles tighten on the thread to mount the attachment on the tool). This will only reduce the thickness of the tool just below the bit (useful near the edge of the workpiece). The really useful option is to use a Right Angle or Flex-Shaft attachment. Both are of less thickness and allow you to cut slots in any surface away from the edge of the workpiece. • If you need to work in bad light areas (e.g. underneath the sink, in a closet, in a narrow area, below the window sill) mini-Light attachments can be very useful. When using flashlights or anything instead, you keep hussling with space and darkness that really holds up the work. • If you incist your bit marker, you can still use colored tape. Punch the hole in it (perforator or hole pliers) and stick it over the hole where you keep your bit in, in the tray of your starage case. Besides the perforated holes, you can write (good restistant water markers) something down about the bits stored there. You can also color your bit using small pieces of shrinking tube: small tube sleeves on the shaft until just below the actual wheel/grinding stone and shrink it using hot air or lighters. Make sure only to cut short pieces to avoid the bits that can't slide in the tool's collet far enough away. • To increase the flexibility of your tool, you should have many different bits. To keep things organized a storage case with an area/tray where you can store your bits is HIGHLY RECOMMENDED. If the bits are just lying through eachother some bits can damage others, polish the contaminated wheels with grinding particles (scratches!) and it's just inconvenient using them. • For special purposes, you can create your own bits! Some mandrels are available and you can mount a piece of any document on it. Before doing this just make sure that the pieces are prepared to rotate: not too large and it must be kind of symmetrical/round. (e.g. sponges, sandpaper, cloth, etc.). Besides, there are many different mandrels available than just those from Dremel. What about mandrels with a top-to-bottom slot? You can attach any piece of sheet material to the slot (e.g. sandpaper). This way you create any custom 2-flapwheel. On this message board often people come up with useful sites where A LOT of different bits, mandrels, accessories, etc. are available! WORK ON ALUMINUM: Practically all bits are clogged with aluminum. Aluminum is soft and it easily fills the small space between the grinding particles/cutting teeth of your bit so that the bits won't work anymore. The cutter is difficult to clean, the grinding stone can be cleaned with clothed stone. To cut aluminum, you need a little more space between the teeth: the two smallest cilindrical router bits work quickly and wonderfully! Other bits that work well on aluminum are abrasive bits and Also sanding bits bits (depending on the aluminum alloy). WORK ON EASILY MELTED MATERIAL: Use a cuter/saw blade that has relatively large teeth and runs at low speeds. It is best that the speed should be lower than 10k rpm (the minimum speed of the standard Dremel Multi 395 and previous versions). The digital spin tool is recommended: it has a low speed of 5k rpm and it still has enough torque at low speeds. When grinding, sanding or polishing you always have to deal with fine particles and a lot of heat-generating friction. To prevent melting, you should apply only a little pressure and keep a little moving (fast): use slightly too long in a small area the material will soften / melt immediately. Small worpieces should be pressed with short pulses to cut/grind the cooled-down area between the hit bits. CUT SOFT MATERIAL AND STILL BITS ARE DULL: At first glance some material appears to be soft. However, often these materials are contaminated with slightly larger hard material particles (such as symlines). Examples of such materials are mortar and green items (clay products) and sometimes even metals are not mixed very well while it is still liquid during production. You can never avoid this and you just live with the fact that bits need to be replaced once in a while. I have not typed them, they are from dremel forums long time ago ... Last edited by koala; 12-13-2007 at 11:54 PM. Arc4 + mods / repairs. LED drop-in for SF E-Series. Onion rings for SF A2. November 12, 2007, 6:42 pm #34 My Dremel (Re-branded Craftsman) has bearings at both end. I had it apart to clean the dust. I like keyless chuck though. I have to get me one. I also use press drill attachments for drilling PCBs with carbide microdrills. If you get a press drill for your Dremel, take the time to fiddle with slide adjustments. It tightens the action nicely. Originally posted by the cat I heard about the Proxxon tool on a technical forum a year or two ago. I've got the word google so maybe I can find it again. The main problem is accuracy - Dremel shafts quickly become loose because they do not have bearings. They have hard steel collets; they come with sets of 6 collets consisting of 1.0 to 3.2mm. Variable speed is the control pickup, not a cheap clicky switch. ymmv, of course - it depends on what you use it for and how important accuracy, and how much you use it. I suppose in our torch mod app here, it doesn't matter. 12-12-2007, 10:42 AM #35 Originally posted by koalas To prevent melting, you should only apply a little pressure and keep little moving (fast): use slightly too long in a small area the material will soften / melt immediately. Small worpieces should be pressed with short pulses to cut/grind the cooled-down area between the hit bits of Eh. When I cut the plastic I just let it melt Then remove the globs with a blade. Eat, drink and be fun, for tomorrow your friend Died. 12-13-2007, 10:51 PM #36 Thank you, gents, for all the great advice here. Thanks especially the koala for the incredibly comprehensive post above. I just bought my first Dremel ever (I know, I know... DEDICATED CPFer for 3+ yrs. and only now get a Dremel---a shame!), because I couldn't resist an agreement available at Lowe's a few weeks ago. They had a nice 10.8v li-ion model for ~$40+ tax (sell and with a coupon). There's not even time to get it out of the box yet, but if we finally hit it off, I'll return to this topic in the future for some serious research. Thanks again for all. All.