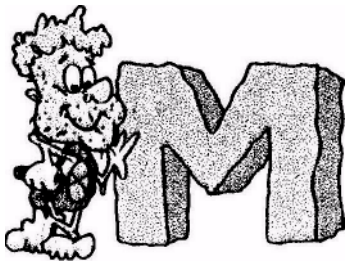


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- Setup a fan to blow across your work to move dust away from your area.
- Mark the areas you want to work so you know where you are going and where you have been.
- Variable speed is the key to flexibility with angle grinders.
- Always wear safety gear. Protect your health and eyes.
- New stone arrives monthly. We maintain a large selection.
- If you need stone larger than 400lbs let us know and we will have it put into our next shipment

# *The Variable Speed single Grinder— Sculpture Tool*

A handy, manageable tool the variable speed angle grinder can be used for cutting, sanding and polishing.

## **SCULPTURE TOOL- THE VARIABLE SPEED ANGLE GRINDER**

*By Jeff Halverson*

Angle grinders are used by stone carvers to cut, sand and polish stone. They are great time savers. Lets look at the uses and advantages of this flexible important tool.



First of all I know that there are many carvers that work only with hand tools. I appreciate their skill and patience. Some prefer not to use power tools because of the noise or simply because power tools work too fast and its easy to get "carried away" cutting off stone that you really did not want to lose. There are also many carvers who enjoy the speed at which they can create when they use power tools. Power tools can include pneumatic and electric hammers, die grinders, angle grinders and drills.

**As mentioned above angle grinders are used to cut, sand and polish stone.**

They come in both pneumatic and electric versions, however the pneumatic versions rarely get over 3" diameter cutting blades. Angle grinders come in both variable speed and single speed. Single speed is the least expensive and that's because you only get one speed (12,000 rpms). Run out to you local su-per-duper mega hardware store and you will probably find 8 to 12 on display. A single speed is acceptable as long as you have no need for the other potential applications I discuss below.

The variable speed models are more expensive because of the flexibility they offer. The last time I looked for a variable speed model at the super hardware store I did not find one. It's easy to identify them because they have a speed control dial usually at the back to keep it as far as possible from the dust. This brings up an important feature to look for in your angle grinder, to keep out the dust look for a "dust sealed motor".

**Explore The Possibilities**

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So why do you want a variable speed angle grinder;

- **CUTTING**- These units usually come in models that fit cutting blades of 4", 4-1/2" and 5", (there are larger ones for deeper cuts but they get rather heavy). Set up with a diamond blade or a fiber mesh blade they can cut marble, calcite, alabaster and soapstone with ease. They can also be used on granite and basalt with the proper blade. The cutting I am describing is done dry, and usually in the higher speeds available, say 6000 to 10,000 rpms. You get only about 1-1/2 " to 2" of cut, that is pretty good for a tool this light and flexible. But when you are cutting the right way you can move a lot of stone, especially harder stone. The technique often used is to make a series of parallel cuts about 3/8" to 1/2" apart to the desired depth. This leaves you with a line of "piano keys" or fins. Then you can lightly knock them off using a hammer. Try it and you will see how nice it is to move lots of stone this way. Always use the blade at the recommended speed usually printed on the side of the blade.

- **SANDING**- (or grinding), Once you have the "fins" knocked off or just to further sculpt your stone the variable speed angle grinder really begins to pay for itself. Attach one of the different grits of ZEC disks and you are ready to take down those rough edges or to further contour your work. You will be making a lot of dust though so be sure you are still wearing your respirator, and eye protection and keep those earplugs in. ZEC disks are cheap, fairly long lasting, and come in "grits" of 16, 24, 50, 80, and 120. They are aggressive of course so they smooth the edges fast. Once you have worked your way through those you can switch to a soft backing pad and use adhesive backed sanding disks are available seen in grits of 180, 220, 400, 600, and 1000 or 1200. As you get into the finer grits you need to be sure you are not working in one place too long or it will leave marks. You will probably want to hit it, by hand, with your high grit papers for a truly great look prior to polishing. Speed for the sanding phase is usually less than 8000 rpms but you have to experiment depending on the stone and grit. If the disk seems to be chattering try a slightly higher speed. **I want to warn you that when you are using this angle grinder and these attachments don't keep it too long in one place because it will heat the stone (particularly alabasters) and could "Cook" it.** Keep the tool moving in a slow motion and let the areas worked cool down between passes. In Issue 1 of ROCK TALK eNewsletter, I mentioned the White Italian Translucent Crystal alabaster that rings great. Well, this stone also is a good one that will cloud up or fog up if you sand too long in one place. I don't mean to say that the angle grinder should be moving back and forth fast, just keep it moving so it takes a layer off and move on before the stone heats up. Try a pass and touch the stone to get an idea of how it can heat up. You can also attach cup-grinding wheels to this tool. They are metal disks with slots cut in them in a radial fashion. The surface that contacts the stone is embedded with diamonds. They can be expensive but depending on how much you use them, worth the cost.

- **POLISHING**- Slip on a soft pad or bonnet, and run it over an alabaster or marble compound and apply it to your work. You get a beautiful shine. Now this depends on the size of your work and you have to keep

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the speed down. Keep it moving lightly over the work. Depending on the sculpture shape I may polish by hand because it lets me feel the stone and detect any areas that need more work. Larger areas are great for this tool.

Some of the features you want to look for when shopping for a variable speed angle grinder is;  
Weight-consider how long you will be using it in a session. Expect 14-15 lbs)

**Guard-** most units come with a guard or shield, but check that it is easily adjusted with out a tool. The guard not only protects you from the attachment spinning at 10,000-rpm's but also helps deflect dust.

**Motor-**since you will be using the tool in a dusty environment be sure the motor is a dust sealed.

**Side handle-**the side handle is used for control and stability. You want to be able to put it on either side of the tool because its location will depend on use and visibility in the particular application and you may be left handed.

### TIPS FOR USE

**Safety and Personal Protection-** Wear ear and breathing protection as well as eye protection.

**Plan your work-** Mark the stone where you want to cut. Take your time. This tool will save you a lot of time. So take it slow.

**Angle of attack-** Keep the cutting or grinding face at the proper angle during your work

**Cutting-** When you cut, start your cut at a point away from you and once the blade is in as deep as you want it, pull the tool toward you. This gives you a lot of control. If you cut away from you the blade may ride up and the tool may try to run away from you.

**Guard-** Keep it on and adjust as needed (while the machine is off).

**Fan-**I like to place a cheap box fan to my side so it blows across my work and carries dust away from me.

It also helps to keep me cool down here in Florida during the summer. **Blow out unit after use-** I blow the dust off of and out of the tool after each use. **Clothing-** Keep long sleeves rolled up and out of the way. You do not want to snag any loose clothing.

I am not going to mention my favorite variable speed angle grinder, but you can see it by visiting my website [www.MontoyaSculpture.com](http://www.MontoyaSculpture.com) under Power Tools SKU 20075. Shop around for a good unit and price. You probably can find the unit I carry at a lower price, but unfortunately I do not get the discounts the super mega hardware stores get when they buy truckloads. And then again they don't write you these informative articles.

This is a great tool. It's lightweight, easy to control, multi-purpose and a **big, time saver.**

**Our on-line newsletter ROCK TALK comes out monthly. Sign up online. Stories, interviews, interesting information and special sales.**

**See our other informative Technical Bulletins on-line or give us a call.**

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