



Vibratory Tumbler Instructions

Preparations:

These are pretty much the same as for rotary tumbling, with the exception that vibratory tumblers can be very noisy. Placing your tumbler on a piece of carpeting can help moderate this.

In choosing appropriate rocks to tumble in a vibratory tumbler, you have quite a lot more leeway than in a rotary machine. You can process rocks (and even organic materials like bone and coral) from about Mohs 2 on up, though the softer materials require a range of special techniques. Extremely hard materials, such as emeralds and corundum, can also be processed in a vibratory tumbler. Emeralds can be processed using ordinary silicon carbide grits, though they will need to be cushioned as they are quite prone to fracture.

You can also effectively process rocks of different hardnesses at the same time -- say, Mohs 5 through 7 -- as long as you use the appropriate abrasives and techniques for the softer material. Otherwise the guidelines for choosing rocks are the same as for use in rotary tumblers.

Again, you'll find it helpful to keep a notebook showing, for each batch, the rocks processed, the abrasives and media used, and the time for each step.

Step One:

Load your hopper 3/4 to 4/5 full of the rocks you've chosen. A good mix of sizes is advisable. Some of this can be ceramic media, and in the case of soft, irregular, or large pieces of rock, you'll definitely want to include some. Jagged, hammer-broken rocks, for example, won't tumble properly without small, rounded pieces to roll on. Use 60-90 grit silicon carbide on rough rocks that are from Mohs 7 to 8-1/2. If they are smoother and softer to start with, you may want to start at Step Two. Use 1-1/2 to 2 tablespoons of grit per pound of load, and about the same amount of water. Sprinkle the grit into the load while it is running, to help distribute it evenly. If the rocks are soft or fragile, you may need to cushion them.

As the rocks are tumbled, the slurry will thicken. Check every few hours, and if the slurry is thick enough to impede tumbling action, add a small amount of water.

The goal of this step is for all surfaces of your rocks to be well-rounded. This should take 1 to 2 days. Repeat this step with fresh grit if necessary.

When the surfaces are rounded to your satisfaction, clean your rocks and the tumbler hopper thoroughly as outlined in Rotary Tumblers, above. **DON'T WASH THE SLURRY DOWN YOUR DRAIN!** The ceramic media is also reusable, in any step, once it is clean of all traces of grit. A colander with small holes will be useful for this.

Step Two:

Put the cleaned rocks (and ceramic media, if used) in the hopper, filling it to the 3/4 to 4/5 mark. For this step use 120-220 grit silicon carbide in the same amount as in the first step, 1-1/2 to 2 tablespoons of grit per pound of load sprinkled carefully into the load with the vibratory tumbler running. Also as before, use about the same amount of water as grit, and add more as necessary as the slurry thickens. Check frequently as it processes.

You'll want to produce a smooth, matte finish. This will take 2 to 4 days. When you are satisfied with the results, clean your stones, hopper, and any ceramic media thoroughly.

Step Three:

Fill the hopper as usual, using the same amount of water and grit, but using 500 grit silicon carbide this time. Check frequently for thickening of the slurry. Processing will take 2 to 4 days. This step is complete when rubbing a sample rock on felt or wool cloth produces a dull gloss.

Clean rocks, hopper, and ceramic media thoroughly. If your rocks are Mohs 7 or above, you can probably go on to Step Five. Otherwise do the prepolish step.

Step Four (Optional Prepolish):

For this step you will use 600 grit aluminum oxide, which wears down to a more rounded (and thus less harsh) surface than silicon carbide. Otherwise the directions are the same as for the earlier steps. Process for 1 to 2 days and clean everything thoroughly.

Step Five (Polish):

Fill the hopper - preferably one reserved for polishing and burnishing, or otherwise very well-scrubbed -- with your clean rocks and ceramic media as for the earlier steps. Use CPP polish at the rate of about 1-1/2 tablespoon per pound of load. If you use a different polish - and there are many available - follow the manufacturer's directions. (Cerium oxide is often suggested for emeralds and for glass.) Add the same amount of water, or enough to make a thick slurry. A small amount of dishwashing liquid can improve the tumbling action (in earlier steps as well). The rocks should be evenly coated during the tumbling process.

Run this step for 2 to 4 days, until the (cleaned) rocks look the same wet as they do dry. Clean everything thoroughly. If your rocks show a slight haze or film at this stage, go on to Burnish. If not, you're done!

Optional Step Six (Burnish):

Put cleaned rocks and ceramic media in the hopper. Add about 1-1/2 teaspoon water per pound of load, and start the machine at low speed. Add about 1/2 ounce soap powder per pound of load to develop a thick foam. Process for up to 4 hours, checking hourly. What you are looking for is an enhanced gloss.