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OBSERVATIONS ON REVERSING LAP ROTATION

By Douglas Turet

The whole idea behind reversible lap direction is to overcome the effects of the differential strains in crystalline growth, which results in striated or otherwise zoned hardness differences.

If you've ever faceted either a Tanzanian or Bolivian amethyst, and found yourself repeatedly attempting to polish-out those vectored striae on main or table facets, you know the havoc that these growth striae can wreak. Or, if you've ever found yourself up against the cleavage planes of either a topaz or sphalerite, for example, and notice that, no matter what you try to do, little bits of your table facet seem like they'd rather fling off than polish!

What's more, if you've tried cutting corundums from any of several different locations, you've probably experienced that pitted "quasi-polishing" effect that comes up on certain facets at about 1200 mesh, where the stone seems predetermined to polish in some areas of a given facet, but unwilling to proceed beyond a coarse grind on others! And, on still other materials, especially those like the spodumenes and kyanite, which have grossly different hardnesses, depending upon directional approach, it almost seems like the material, itself, doesn't "want" to be cut or polished, because, no matter what you do, pieces seem destined to splinter off.

Well now, if you've experienced even one of these difficulties, and you know how gut-wrenchingly frustrating they can be, imagine what it'd be like if you could "magically" overcome all of them by just utilizing some kind of "new approach"!

That "new approach" (literally) is just that: an approach that's angled a few degrees away from the one you were using, an approach that's only possible by repositioning the surface being ground, in relation to the angle from which the wheel/lap is abrading it.

While you could put yourself through the angst of undopping and redopping your stone, then recutting the whole thing in hopes of sidestepping the variable/directional/striated hardness issues, the easiest approach is to stop the lap, flip the switch to make it spin the opposite direction, and try cutting from the opposite side of the arbor.

Usually, not always, but most of the time, this'll work like magic, and that miniscule 10-15 degree difference will be enough to overcome the problems that had you cursing or biting your lip a moment before.

A footnote to this — there are extremely rare occasions when I'll face a stone directly into an oncoming polishing lap to bring up an ideal polish on it, but, again, this is not a technique for either beginners or those with "soft-stop" machines like the Facetron.

(Note: I do use this on my dialspring-loaded Ultra Tec from time to time, but only after winding beyond the spring, so as to effectively transform the machine to a "hard-stop" unit and, even then, only when I can focus intensely on what I'm doing, and at the slowest possible speeds, with the lightest possible touch, so as not to have to buy a new machine and laps every few months! Again, I don't recommend this technique for everyone. I only resort to it when nothing else will do the trick.)

Well, I think that that about covers it! §