

Darkside™ Composite Polishing Laps - User's Instructions

Information from Gearloose

The Darkside™ was created to address the rising metals prices and to create an affordable easy-to-charge and use lap. They immediately became popular with people who always had trouble charging a metal lap.

Suppose we took the ease of a Corian-type lap, coupled with the speed of a composite lap, but reduced wearing and heating? Now add polar and nonpolar domains to allow the use of the whole range of diamond and oxide polishes.

The lap quickly breaks in on the first stone, without the charging process needed for metal laps, making it user-friendly for beginners.

But there were surprises in store: The Darkside outperformed expectations and has been adopted by many professional production cutters. In particular, they are the "Magic Bullet" for quartzes when used with Cerium Oxide.

Using the Darkside:

Easy!

Be stingy with the polish! For use with diamond polish, you can use a tiny bit of spray compound, or a THIN SPARSE amount of the regular compound, or, with a tissue wipe on a thin film of WD40 or any common oil type extender, then wipe dry. Wipe on a THIN film of diamond powder. Wipe clean once in a while to remove stone dust buildup, and repeat as needed to maintain polishing speed.

Slower speeds are used than with a BATT™. Try 200-400 RPM until you get the feel of the lap.

For oxide use, either use it right out of the box with a THIN, dilute slurry of the oxide polish, or, if changing from diamond to oxide for that pesky quartz, wash the lap with a little detergent (409 or Fantastik work well), rinse, and begin polishing. After oxide use, if you want to go back to diamond, rinse the lap, and prepare as above with the oily tissue to "polarize" the lap for diamond.

You are going to find from the following entries that Cerium Oxide on a Darkside Lap is the Magic Bullet for the quartzes. Some of the work presented by Professional cutters was done on a CeO/Darkside DIRECTLY from a #600 lap. Yes, a two-lap stone.

What is is - why it works:

The DARKSIDE™ is a lightweight lap, made of the specially developed material coated onto an aluminum baseplate, then machined both sides for flatness. For its thickness it is surprisingly rigid.

Because of the two-ply construction, these laps require twice the labour operations to manufacture, but it least it finally gets away from those horrible tin prices.

The Darkside™ is a RESURFACABLE LAP. Within reason, if a lap jam does not destroy the lap, you get another chance or two. If A stone fractures and chips embed, the Darkside can be resurfaced. Once production started, I increased the thicknesses of both the metal backing and the polymer composite layer to allow this, as well as to give the lap a stiffer "feel" and quieter running. I can resurface your Darkside, or any local machine shop can. Carbide tooling is required. Single point or PCD diamond is strongly suggested for best finish.

Like all Gearloose laps, the polishing mechanism relies on surface complexity for polish retention, and lubricity for reduced heating and higher polishing efficiency. Some users have gotten three pavilions done before needing to add more diamond. Because the composite contains carbon, it has a natural affinity for diamond, but the hydrophilic domains GREEDILY accept oxide polishes-Use them SPARINGLY.

What is isn't:

It is not an off-the-shelf commercial material. Like BATT™ and BA5T™, it was designed for this specific application, Made Here, and has no other readily apparent commercial uses.

It contains no reactive species, nor are its precursors listed carcinogens. (I want to survive making the stuff! Just as with my metal alloys, since I have to make and handle thousands of them, you can BET I watch toxicity issues! Any such issues will get me first.)

It is not a BATT™. It is designed for polishing, though it has been tested successfully with 3K as a prepolish, which it does quickly and aggressively. While I never designed the tin alloy BATT for cutting, people love cutting with it...but you will NOT be able to do this with the DARKSIDE™.

Testimonials:

This one from a user was in response to someone who had a scratching problem:

"Mine started scratching too. I had applied too much cerium oxide. I took it off and washed it with 409 and all is well again. The Darkside seems to take much less oxide slurry than a tin lap. I am also letting my cerium oxide mix settle and just taking a little off the top with a brush. I am using what is suppose to be the best cerium oxide you can buy. I have tried between 200 and 500 RPM. 200RPM works best for me. One more note: I turned off the water drip. I am just using a spray bottle like you use for diamond spray and spritzing ever now and then."

An earlier one:

"It is FLAT. This has to be the flattest polishing lap I own.

The best part: I am cutting a very nice amethyst now. I actually do not cut much quartz because of the low RI but this is a nice one. I prepolished on my BATT with 3K and it pitted. I don't know why this happens sometimes but it does. I would usually polish on a cerium Pol-A-Gem I have but it is very slow so I got out the Darkside. I cleaned it because I noticed when you first get it there is some black dust on it. I then applied a very thin slurry of cerium oxide. It must have a black hole in it because it just seemed to suck the pits out and I am left with the flattest sharpest facets I have ever had on any stone. I am probably not saying this right but you cannot see the edges of the facets. There was absolutely no edge tearout and there is no grooving because the Darkside does not have grooves. I am still experimenting with speed and dampness but it seems to be very forgiving."

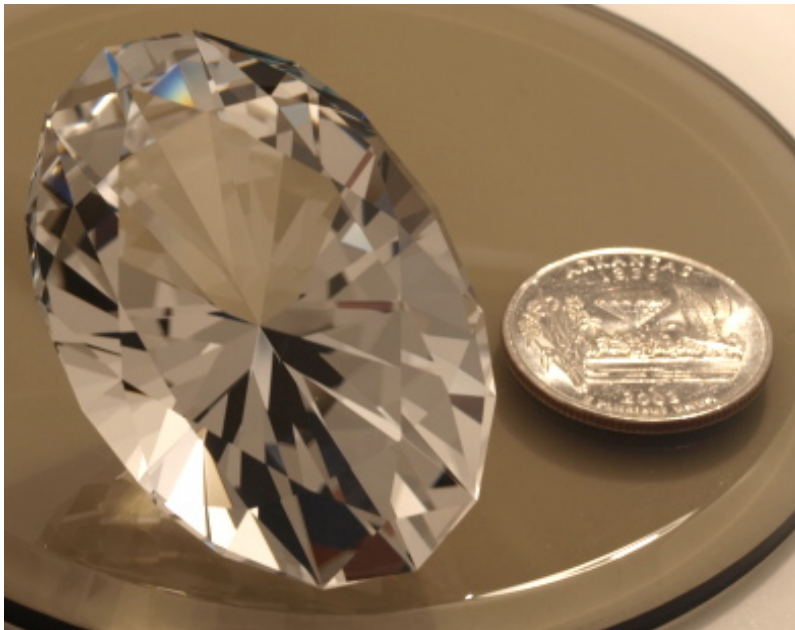
For more users experiences and advice, see here:

<http://gemologyonline.com/Forum/phpBB2/viewtopic.php?t=6917>
<http://aussiesapphire.com.au/forum/index.php?topic=183.0>



QUARTZ: 80.70cts. 26.5x26.5mm.

"The Flat even polish from cerium on "Darkside™" was pretty amazing for me. I had to really look at it, a lot, not used to the flatness and sharp facet edges or junctions on my Quartz gems. Try a larger table like this one, polish came up Pretty quick as well and again nice and flat, (No polish lines, swirls, blemishes etc) just even clean polished surface."



Barion Oval Quartz
51.25mm.x34.1mm.
46grams @ 227carats +/-

Faceted with XS3, Polished on Gearloose "Darkside™" lap with Cerium Oxide

(From cutting on #600 Plated lap DIRECT to CeO Polish on Darkside™)

NOTE: above is a 2 lap stone

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