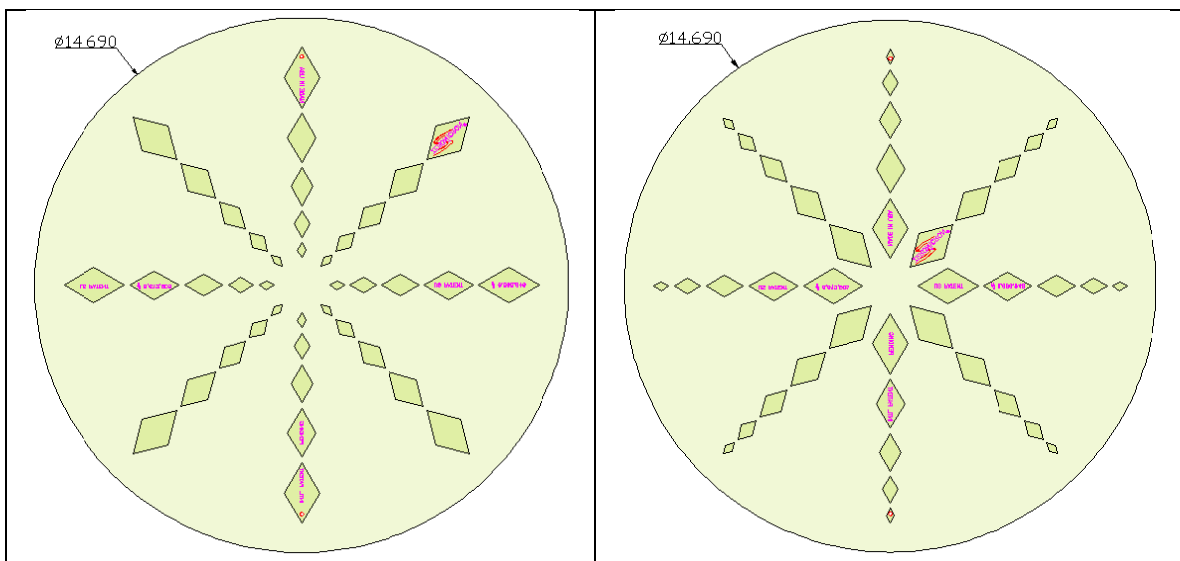


Final Polish – Pad Dresser Application

This application note applies to the final stage or finish polish process. Typically these are polishing pads with a smaller cell structure that are used to provide a very fine finish to the product.

These pad dressers are made from a single piece of G-10 material or, on special order, a harder G-11 material. There are several formats available but the normal production version comes as a pair of templates, a set of 14.690 inch diameter dressers are shown below. The diamond pattern is raised approximately 60 mils above the surface.



Instructions for the application of the diamond pattern pad dresser on a new pad:

Contrary to the pad manufacturer claims that the only way to break-in a polishing pad is by running product until the surface is relatively uniform, we have found and verified with multiple clients, that the diamond pattern pad dresser can be used to accomplish this with much better results.

1. Follow the instructions for using the diamond pattern pad dresser to dress a production pad (see below), except at step 6, run the process between ten to fifteen minutes.
2. When done, flush the pad thoroughly to remove all loose material.

Our tests have shown, and we have confirmed with clients, that this process is quicker than the standard break-in for a new pad, it does not require the expenditure of product, reduces haze

due to a more even surface, provides a more consistent reduced particle count on production parts and increases pad life when followed up with the following production pad dressing.

Instructions for the application of the diamond pattern pad dresser on a production pad:

1. Remove wax paper to expose the adhesive and mount the diamond pattern pad dresser to the carrier.
2. These diamond pattern pad dressers come as a set and may be applied alternately on a single headed tool, as a pair on a tool with two heads or a tool capable of being operated with just two heads or as two pairs on a four headed tool on which all four heads operate in unison.
3. If two diamond pattern pad dressers are being used on a tool with four polishing heads, the dressers should be mounted opposite each other, 180 degrees apart.
4. Install the carrier and set up the tool for normal operating conditions for platen and carrier rotation.
5. Start the tool and apply 1 to 2 psi pressure to the carrier when conditioning.
6. Condition the pad for 2 minutes with DI water at a flow rate of 300 to 500 mL per minute.
7. Note: For process that polishes hard substrates like sapphire or silicon carbide, some users of our pad dressers condition the pad after every other run. Softer materials may require less frequent conditioning depending on the polishing pad performance as measured by the removal rate. The frequency of reconditioning will be very process dependent and can vary widely.
8. Under normal operating conditions you may observe a pattern of small bubbles being formed on the polishing pad immediately behind the dresser. When this pattern is consistent it is an indication of the pad surface being dressed evenly.
9. After conditioning, spray DI water onto the polishing pad to flush all residue off.
10. After use, spray and rinse the diamond pattern pad dressers thoroughly and store them vertically to allow the water to drain off.
11. While these are designed for a long service life, the user should inspect the diamond pattern pad dresser to insure that the leading edge of the diamonds remains sharp. Dressers with worn edges should be replaced.

In a production environment we recommend that the diamond pattern pad dressers be replaced every three months when used on a single tool. Heavier usage will result in a shorter life. Life will vary with the materials being polished and other process variables.

For additional information or assistance, please contact ZeroMicron Inc. directly.

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