

Kadco Ceramics

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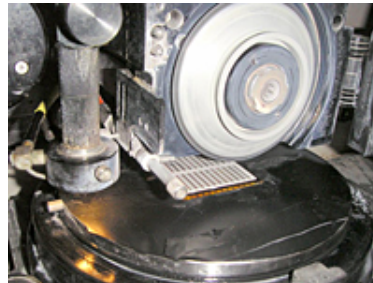
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Machining Capabilities

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We have the ability to machine a variety of materials to produce products such as capacitors and lenses. The most common materials we work with include, but are not limited to, Alumina, Aluminum Nitride, Beryllium Oxide, Ceramic, Copper, Gallium Arsenide, Garnet, Lithium Niobate, Piezoceramic & Piezoelectric Materials, Plastic, Pyrex, Quartz, Sapphire, Silicon, Tungsten, and Yttrium Aluminum Garnet. We can most likely machine whatever material you have into whatever shape you require.

Our main machining processes include milling, surface grinding, ID slicing, and dicing. The more we know about your needs, the better we become to provide cost effective solutions. Tell us what your needs are and we will assist in every practical way. Most of our machining is done for the Biomedical, Electronics, Optics, Optoelectronics, Photonics industries.



· [MILLING](#) · [SURFACE GRINDING](#) · [ID SLICING](#) · [DICING](#)

MILLING

Milling machines are used to horizontally or vertically to machine metals and other materials. A mill cuts a thin layer of the material and repeats its steps, making a number of passes until the desired depth is reached. Along with the actual cutter, the work piece moves so they are working against each other. Milling can be done manually, mechanically automated or fully automated using a computer numerical control (CNC).

We use milling for intricate shaping of virtually any machinable hard material. Different sized mills can be used to create an array of designs. Milling is typically used for producing simple shapes like cutouts, slot, and holes, but may also be used for more complicated shapes. With our large inventory of diamond tooling and in house design capabilities, we can rapidly respond to your requirements for accurate thru holes, programmed contours, and precision surface finishes.

SURFACE GRINDING

Surface grinding is widely used to make smooth, flat surfaces with accurate thickness tolerance. To do so, a spinning OD grinding wheel is used and covered with a material whose particles are harder than that of the product material being worked on. Lubrication is usually added to the grinding surface in order to decrease the friction and increase the ease of the grinding. We have developed many specialized techniques for grinding hard materials into desired shapes. By using combinations of form wheels and profile grinding, we can efficiently generate complex contours in ceramics, carbides, and optical materials to tight tolerances.

ID SLICING

ID Slicing saws are very efficient for repeated cuts in hard, brittle materials when accurate results are needed. The saw blade is an annular ring with a diamond plated internal diameter to achieve accurate cuts with minimal kerf loss. We have developed processes for machining silicon, piezo ceramics, ferrites, and quartz as well as many types of ceramics. Because of quick set up times and ease of programming, ID slicing can be more cost-effective than OD slicing or wire sawing in many situations.

DICING

Dicing is a variant of OD grinding on a smaller scale than surface grinding. Many times, small electronic parts are scribed. Wafers are mounted on dicing tape so that once diced, the die will remain on the tape from machining until further steps in the assembly process. Our dicing experience allows our machinists to optically align to microscopic patterns and make very precise cuts and grooves. By the proper selection of processing conditions and blade materials, we can effectively cut a wide variety of hard materials with minimal chipping and kerf loss. Dicing may even be used to cut precious stones like sapphire or other crystals into very small pieces with great precision.
