

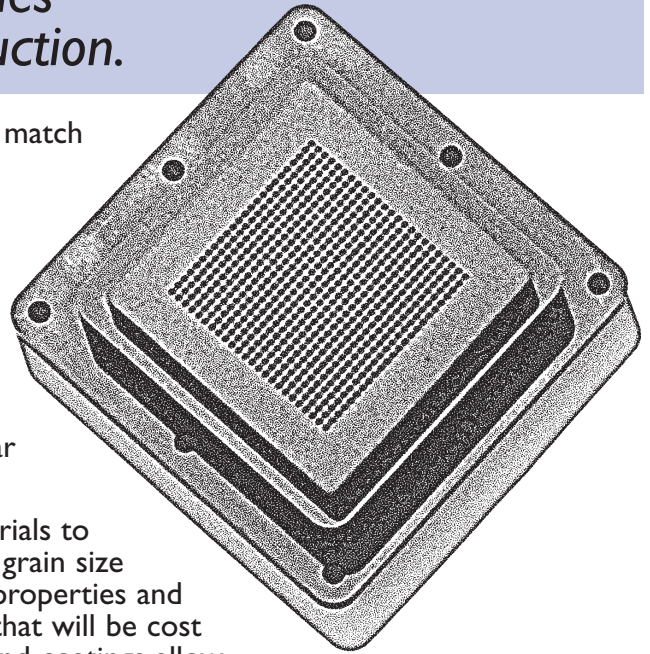
Graphite Precision Fixtures

Materials and machining capabilities provide solutions to increase production.

Choose from a variety of special processing options to match your particular application needs.

- Copper impregnated material offers increased wear-resistance and higher thermal properties for longer part life.
- DURABRAZE® has a sealed surface and is designed to be used when a clean handling product is needed.
- Graphites with 1 micron grain size for excellent wear and demanding tolerances for small geometries.

POCO offers a full line of polycrystalline graphite materials to meet your application needs. POCO materials range in grain size from 1 micron to 20 microns. Each graphite grade has properties and characteristics that allow the user to select a material that will be cost effective for their own unique application. Infiltrations and coatings allow materials to be tailored to specific conditions.



PREMIUM GRAPHITES FOR FIXTURING CHALLENGES

POCO has a variety of fixturing materials for brazing and sealing operations. Users of standard graphite brands can now choose a POCO material with the characteristics that give improved performance at an economical price.

The thermal expansion rate of POCO materials is higher than common graphites and gives better performance when used with metals. Because all POCO materials are isotropic, thermal conductivity and expansion are uniform in all directions.

The unique structure of POCO materials combined with superior strength and small particle size make this material very easy to machine. POCO materials have a good balance between strengths and hardness resulting in less tool wear during machining operations.

POCO has design and machining operations to produce precision-machined parts per customer drawings or sketches. Graphites are also available in block form for user machining.

DURABRAZE®

This material is ideal for applications requiring an abrasion-resistant, particle-free surface. After machining, the graphite substrate is subjected to a unique amorphous carbon treatment. The finished fixtures have a very clean surface that will not mark ceramic packages. Durabrazed is thermally stable and ideal for applications with temperatures up to 510 °C in the presence of oxygen and in excess of 1500 °C in an inert atmosphere. Durabrazed can be acid cleaned without dimensional changes.

GRAPHITE FEATURES

CTE – The coefficient of thermal expansion of POCO materials is closer to metals than other graphites. This helps eliminate misalignment problems between the package and fixture.

Uniform Properties – POCO graphites have excellent thermal properties. All of our polycrystalline, fine-grain graphites are isotropic, high-strength materials that improve wear and resist breakage. Materials without a grain direction offer maximum design flexibility. The physical properties remain the same in all directions providing uniform electrical and thermal conductivity, as well as uniform electrical resistivity.

POCO graphites are not affected by brazing temperatures and provide good heat transfer. Graphite fixtures remain dimensionally stable even after repeated cycling.

Solder – Typically, solder does not wet graphite and can be removed by normal cleaning procedures.

Machinability – High strength, fine-grained graphites are very easy to machine. They hold tight tolerances and can be machined into intricate shapes. POCO has a complete machining facility with some of the most sophisticated machining and inspection equipment available. Our machinists are leaders in the field of graphite machining.

Cleaning – After POCO's final machining process, all parts are ultrasonically cleaned with deionized water to remove machining dust and then vacuum baked.

Engineering staff – When switching from metals or ceramic fixtures, POCO's engineering staff can assist with your design changes. Graphite does not have the design limitations common to these alternative materials.

Our engineers offer suggestions that can improve part performance when designing in graphite. POCO can manufacture from your current fixture drawing or assist you in design improvements.

Graphite Materials – POCO offers a full line of fixturing materials to meet the most demanding needs. For consistent quality and performance, ask for POCO fixturing materials.

Silicon Carbide – SiC fixtures may also be an option for high temperature applications in oxygen-rich environments.