

GENERALCARBIDE®



INVESTED IN YOUR SUCCESS





Competitive and economic pressures are the new reality of the tool and die industry. Long turnaround times and healthy budgets are but a distant memory. Your customers want products fast, and they want them at competitive prices. You must deliver—or your competitor will.

At General Carbide, we recognize that we play a pivotal role in your success. Your tight production schedules leave no room for product error, which is why we've spent the last decade boosting the quality of our carbide preforms to industry-leading levels. We've also reduced our turnaround time through new automated technology and increased in-house capabilities. Our pricing remains competitive, and we constantly strive to exceed your delivery and service expectations.

In today's marketplace, you need a partner you can trust—for quality, for pricing, for delivery, for attention to service. You need General Carbide.



Quality Focus

We are focused on quality, which is why we've made significant investments in new equipment, technology and processes that touch every aspect of our company and your products. From new sinter-hip furnaces and CNC machines to new CAD/CAM and packaging systems, we believe in making quality investments.



The General Carbide Tradition

Founded in 1968, General Carbide produces a broad range of tungsten carbide preforms and blanks that are used for wear, cutting and metal-forming operations in a variety of industries around the world. We are recognized for our diversity of material grades and specialty products that consistently meet your material and dimensional specifications.

Independently owned and operated, we have three manufacturing plants in the United States that serve an international customer base. We believe in continually investing in our people, equipment and technology to fully meet your needs with unmatched efficiency and skill.

We Make the Grade

At General Carbide, we have one of the broadest ranges of tungsten carbide grades in the industry and the tightest specs you'll find anywhere. Both let us produce high-quality grades matched to your most exacting requirements.

Our tungsten carbide grades use cobalt binders ranging in concentrations from 3% to 30% and offer nominal particle sizes from 0.55 microns to 10 microns. The superfine carbides are exceptional for applications requiring sharp edges. In addition, we offer a broad range of tungsten carbide grades with tantalum carbide to reduce galling in your metal-forming operations.

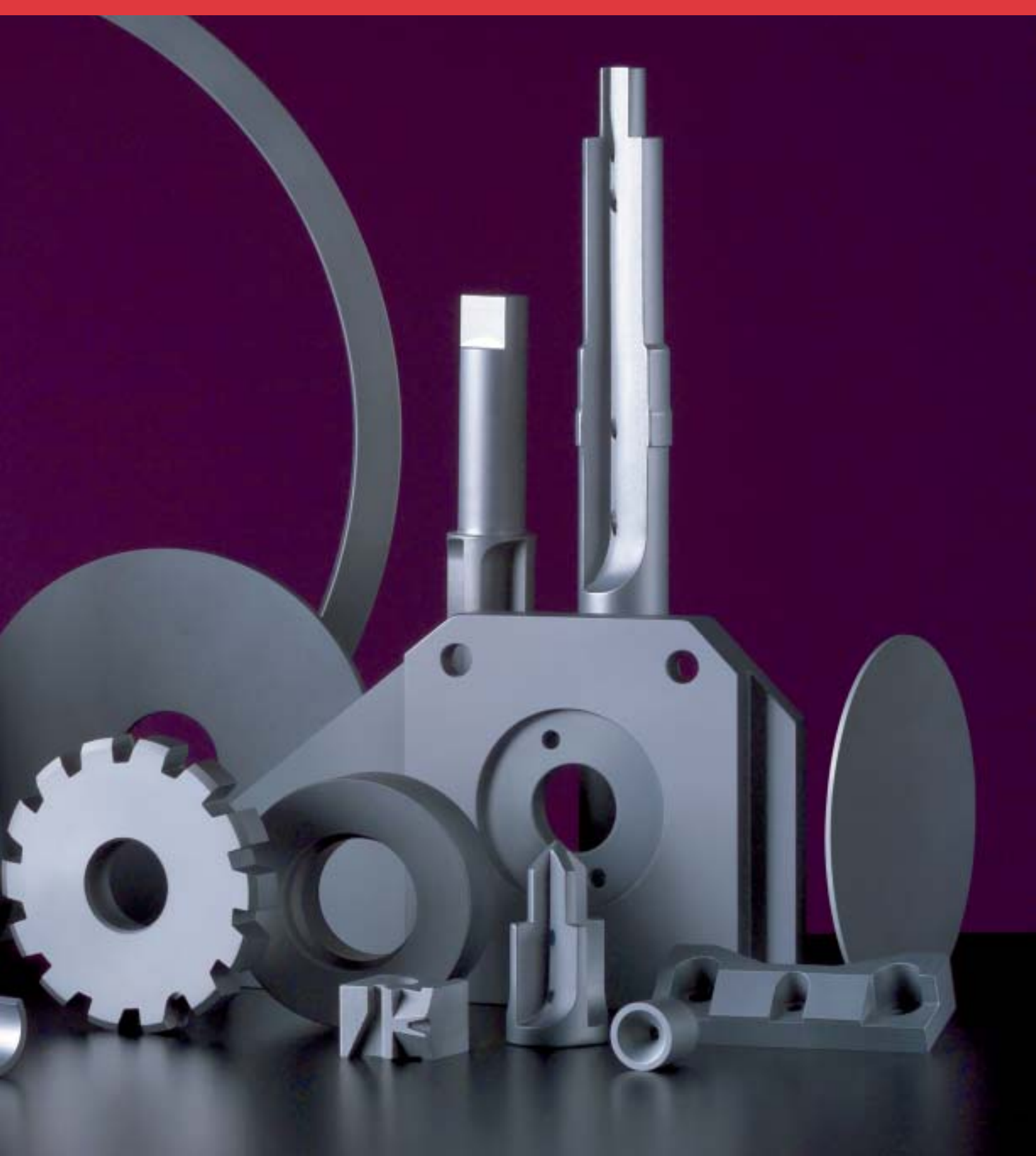
We are a major producer of nickel carbides for environmental conditions where corrosion, oxidation and wear push your tooling to the limit. We maintain the purity of these carbides through a dedicated nickel room and manufacturing processes that eliminate the potential for contamination.

From our numerous grades, we make preforms with diameters up to 16.0 inches and flat stock as thin as 0.030 inches. Whether simple or highly complex, our preforms meet your specifications and minimize stock removal.





We're in Excellent Shapes



From simple to highly complex, our preforms lead the industry in metallurgical and dimensional quality. Available in a wide range of shapes and sizes, these American-made products meet the most exacting specifications while significantly minimizing stock removal.

A Quality Investment

Every carbide producer talks quality. At General Carbide, we invest in it.

In the past decade, we've made a significant investment in new equipment, technology and processes to ensure you receive, on time and within your budget, products of the highest quality. These investments have touched every aspect of our production process, from order entry to manufacturing, quality control and packaging.

- Our CAD/CAM systems make it easy to download your files, providing speed and accuracy in the early stages of production.
- Multiple sinter-hip furnaces produce preforms with little to no porosity. Sinter-hipping also can provide up to a 50% increase in nominal transverse rupture strength. We sinter-hip all of our EDM blanks, nickel-binder grades and preforms with cobalt binders of 18% or less.

- We stress relieve all products that will be EDM finished to allow for more aggressive machining. At your request, we can perform this operation on any of our other products.
- Our spray dryer produces high-flow powders, allowing us to manufacture complex parts in our automatic presses. These presses, which meet or exceed the industry's highest precision standards, offer consistent, high-volume production capabilities. Robots used in tandem with the presses further increase our production efficiency and consistency.
- Advanced CNC machines give us the capability to make complex preform shapes with superior dimensional control.
- Rigorous quality controls throughout our production process ensure our products meet your requirements and our high standards. Our coordinate measuring machines provide quick and



Cobalt. Nickel. Tantalum. We offer them all. In fact, we produce more than 50 carbide grades in a wide range of binder concentrations and particle sizes. We also lead the industry with the tightest overall material specifications.

Top Grades



accurate dimensional readings, while all of our gauges undergo regular calibrations that are NIST traceable and follow ISO guidelines. We've also invested in upgrading our quality control department with a new Rockwell hardness tester and Nikon metallograph.

- On orders requiring Invar plugging, our in-house capability ensures rapid turnaround times.
- In addition to our dedicated nickel room, we have a dedicated sub-micron room to ensure these materials remain in their purist form. We've also instituted cellular rush-order processing to meet your expedited delivery requirements.

We want to be your quality partner, and we're investing in that relationship for today and well into the future.



We Help You Succeed

Your success is our goal. From competitive pricing to consistently meeting your delivery expectations, we strive to become a partner—not simply a supplier.

We offer easy order placement, timely quotes and convenient, cost-saving release-order options. Our technical and problem-solving assistance gives you direct access to our engineering and metallurgical experts. We are also continually expanding our online capabilities at www.generalcarbide.com to further streamline business transactions and provide industry-leading customer service.

Contact Us Today

We want to earn your business, but we also want to earn your trust as a valued partner who provides world-class products and service at competitive prices. Contact us today at 800-245-2465 or sales@generalcarbide.com.



What is Cemented Carbide?

Cemented carbide is produced by mixing a metal carbide, such as tungsten, with a metallic binder material that is usually cobalt, nickel or a combination of both. This mixture is generally held together by an organic binder and formed into a desired shape, known as a preform. The preform is then placed into a furnace for sintering, which melts the metallic binder material around the carbide particles. During sintering, the preform shrinks volumetrically about 40%. The last step is grinding the preform to its final dimensions.

Cemented carbide products have the following mechanical and physical characteristics:

- Abrasion resistance
- Deflection resistance
- Corrosion resistance
- Torsional strength
- Compressive strength
- Toughness
- Low- and high-temperature wear resistance



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