



ENGINEERING AND MANUFACTURE OF SPECIAL CUTTING TOOLS



SPECIAL DRILLS • REAMERS • COUNTER BORES • TREPAN TOOLS • HOLLOW MILLS

★ ISO 9001:2000 Certified ★



Engineering and Manufacture of Special Cutting Tools

Tri-Star Engineering, Inc. has been manufacturing a variety of the highest quality precision special cutting tools since 1976. These include special drills, reamers, counter bores, trepan tools and hollow mills. We have the capacity to make these from solid carbide, carbide tipped or high-speed steel. Industries served typically include automotive, plumbing supply, aircraft, appliance, and any application where the accuracy and durability of machine cutting tools is important. We are capable of manufacturing these cutting tools from your prints or our prints engineered from your piece part prints. Our range of specialized capabilities includes Radial and Axial Cam Relief Grinding, in both internal and external forms.



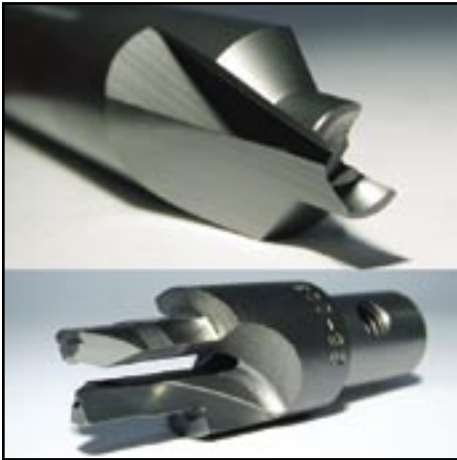
Advanced Manufacturing Capabilities

Tri-Star Engineering's manufacturing facility (16,000 S.F.) in Elk Grove Village, Illinois, is equipped to manage every element of virtually any cutting tool project. We specialize in custom and complex cutting tools. Utilizing skilled toolmakers, Tri-Star Engineering provides CNC and conventional machining techniques. We perform such complex tasks as Cam Relief Grinding of both external and internal forms. Conventional tool and cutter grinding services are available also.

Tooling Services

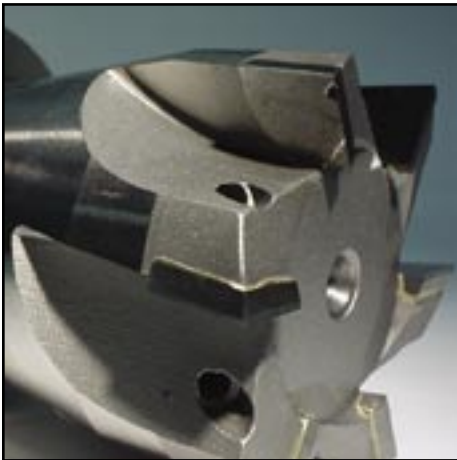
Special Drills • Reamers • Counter Bores • Trepan Tools • Hollow Mills

** Special Coatings Available For All Tooling



Radial and Axial CAM Relief Grinding

The technique of Cam Relief Grinding is a method for increased tool performance and durability. Tri-Star Engineering performs both radial and axial Cam Relief Grinding of internal and external forms. While ordinary “off of finger-ground” tools typically produce a rough “wire” edge, Cam Relieving yields a smoother and stronger edge. On each order the clearance geometry is recorded, enabling us to provide repeatability and tool changes based on an accurate analysis. Cam Relief Grinding by Tri-Star Engineering prolongs cutting tool life, increases the quality of tool performance, and promotes increased production efficiency.



Tungsten Carbide Tipped Tooling

Carbide is chosen for special tooling because of its extreme durability in today’s demanding metal cutting applications. Tungsten Carbide tipped tooling from Tri-Star Engineering can greatly improve the economy, versatility and durability of your tools.



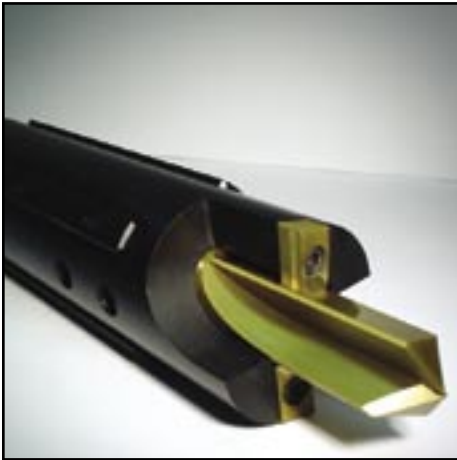
Solid Carbide Tooling

In today’s global market, which demands the machining of exotic metals and fine surface finish, solid carbide tooling is essential for some applications. We are experts at machining Cam Relief Form Ground Solid Carbide tools. Our solid carbide tools are available with straight thru or spiral coolant holes.

Tooling Services

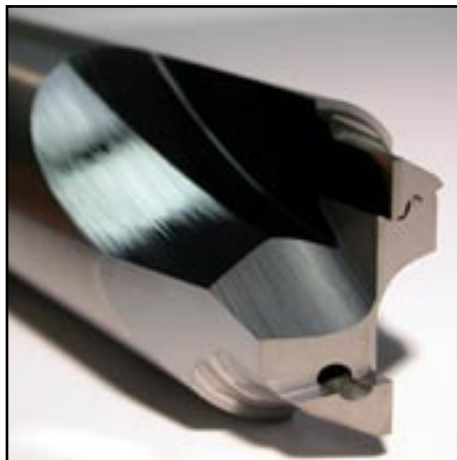
Special Drills • Reamers • Counter Bores • Trepan Tools • Hollow Mills

** Special Coatings Available For All Tooling



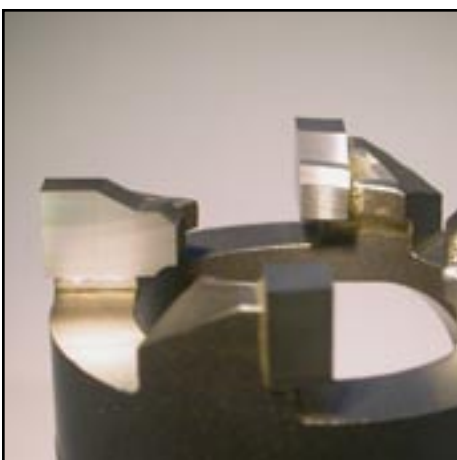
Indexable Insert Tooling

Removable insert tooling construction yields several positive cost and tool performance advantages. Using CNC equipment, Tri-Star Engineering can accurately locate insert pockets in multi-diameter, multi-fluted tools. We can work with you to design and manufacture the right indexable insert tool for your cutting operations.



Coolant Fed Tooling

Tri-Star Engineering can build tooling with coolant thru in solid carbide as well as HSS. The solid carbide tools can be made with straight or helical holes.



Hollow Mill Tooling

Tri-Star Engineering can build hollow mill tooling as TCT, HSS, and Solid carbide. This type of tool is used to form diameters efficiently. These can be made as multi-diameter, thus allowing the end user to form several features in one pass.



ISO 9001:2000

Using up-to-date equipment, highly trained staff, and offering over 25 years of expertise and experience, we are dedicated to providing the highest quality precision cutting tools. Our CNC Grind department has the capacity to grind from solid carbide and the super HSS materials used in today's special cutting tools. This equipment is important to you as an end user because of the repeatability of process and reduced lead times possible. Our QC department is fully equipped to insure the quality of surface finish, size,



**QUALITY SPECIAL
CUTTING TOOLS AT A
COST THAT PROVES
TO BE A VALUE, UPON
APPLICATION**

Commitment to Quality

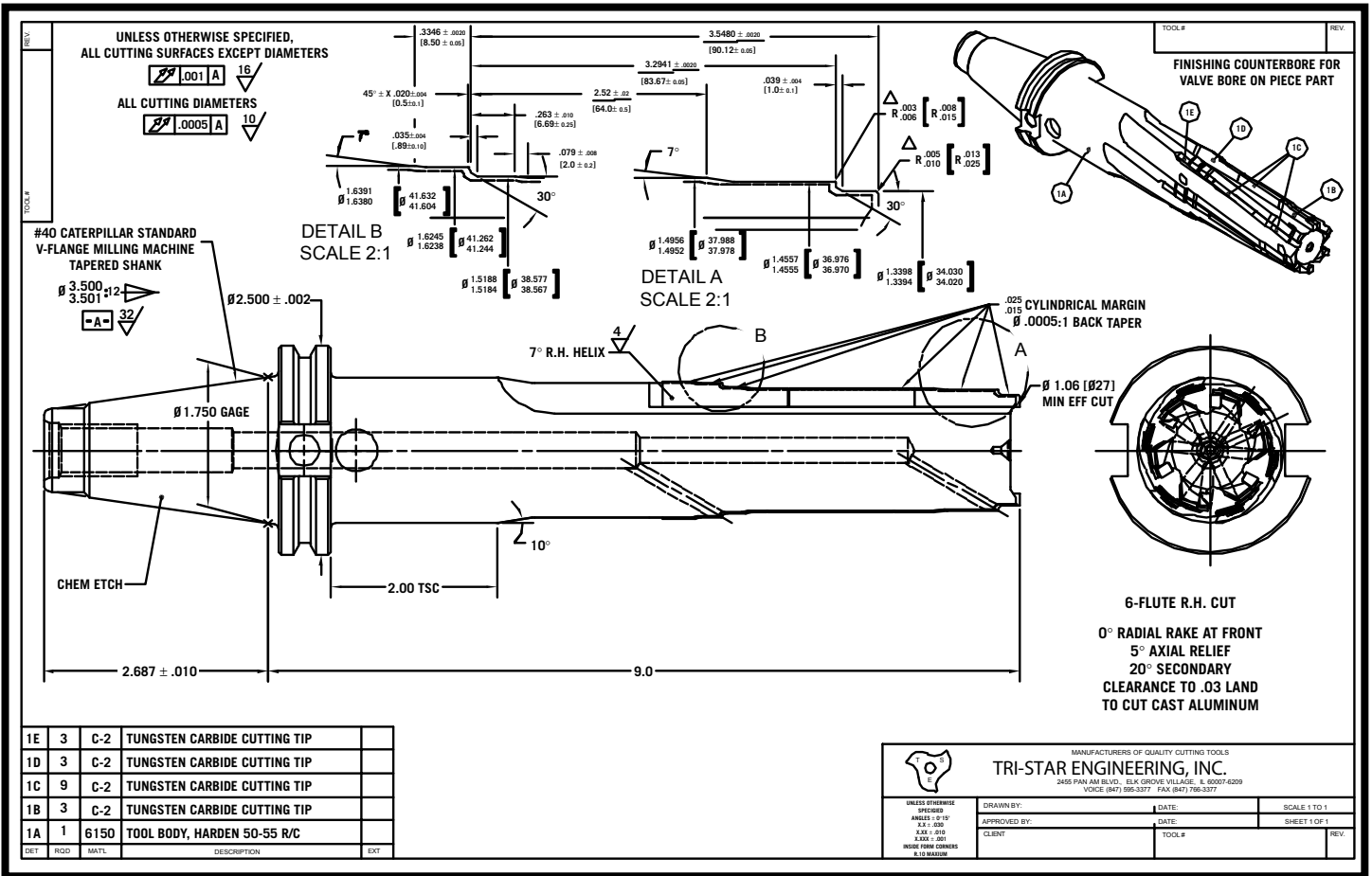
Using up-to-date equipment, highly trained staff, and offering over 25 years of expertise and experience, we are dedicated to providing the highest quality precision cutting tools. Our CNC Grind department has the capacity to grind from solid carbide and the super HSS materials used in today's special cutting tools. This equipment is important to you as an end user because of the repeatability of process and reduced lead times possible. Our QC department is fully equipped to insure the quality of surface finish, size, concentricity and print compliance of our tooling.

Commitment to Service

Our computerized manufacturing process and order tracking system allow Tri-Star to have total control and traceability of our products and services. We will respond to your request for an expedited delivery in a timely manner. If you call or E-mail expedite@tristareng.com in the morning, we can have an answer within 4 hours. If we receive your request in the afternoon, you will receive an answer early the next morning. We offer a repair service for our tools, re-sharpening them whenever possible to "Like-New" condition. Our service commitment at Tri-Star Engineering is our dedication to quality and customer satisfaction at a cost that proves to be a value, upon application.

Value Added Engineering Support

Tri-Star Engineering is a full service source for the engineering and manufacture of special cutting tools. We are dedicated to the highest quality and customer satisfaction at a cost that proves to be a value, upon application. We will work with your personnel to develop and optimize tool designs. When appropriate, we make recommendations for reducing costs to you and/or increasing tool life. We make these recommendations to both your purchasing and engineering departments when necessary. These recommendations offer ways to reduce the total cost to produce your specialized cutting tools, and extend the functional life of a particular cutting tool, thus further reducing your tooling cost per part produced. Many times, what seems to be a difficult chip or cutting process problem can be solved by a simple and inexpensive modification.



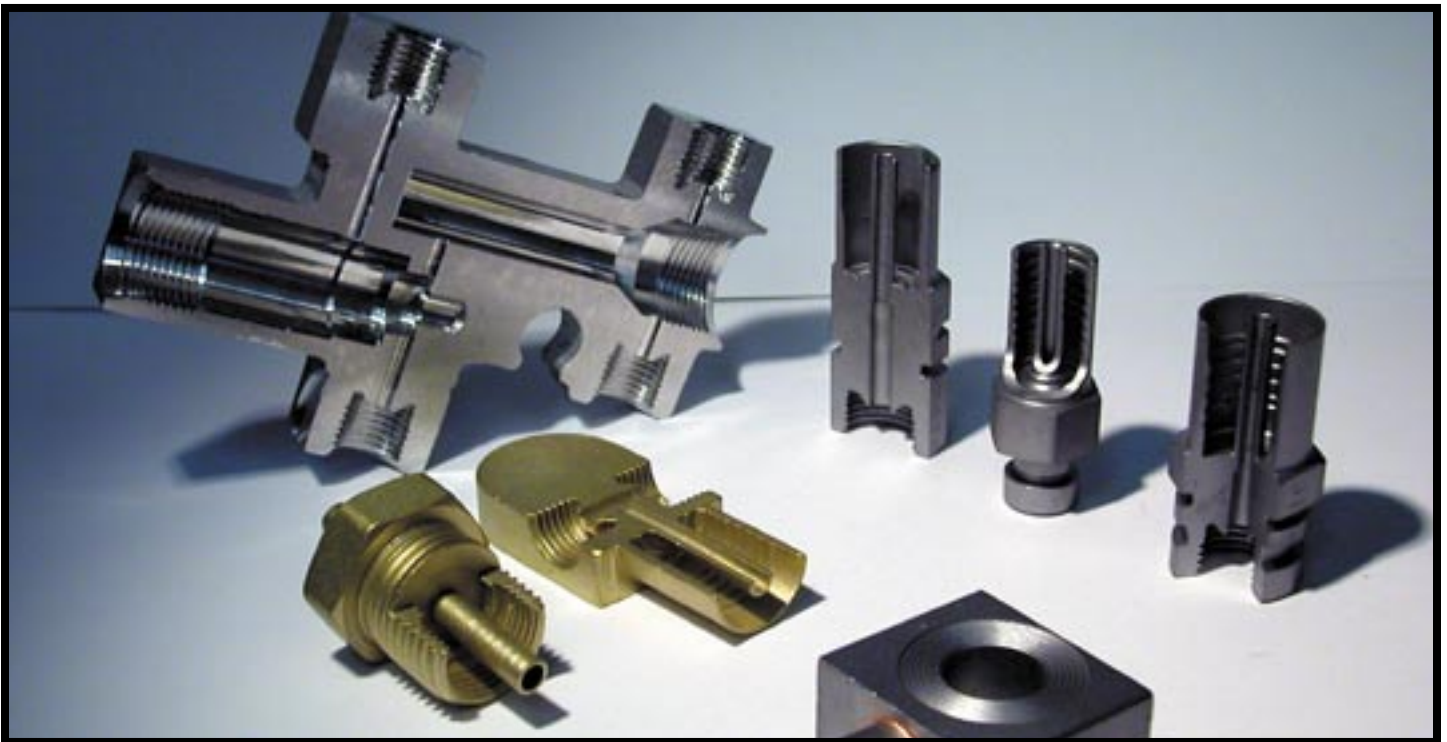
We are capable of manufacturing cutting tools from your prints or engineering new ones based on your piece part prints.



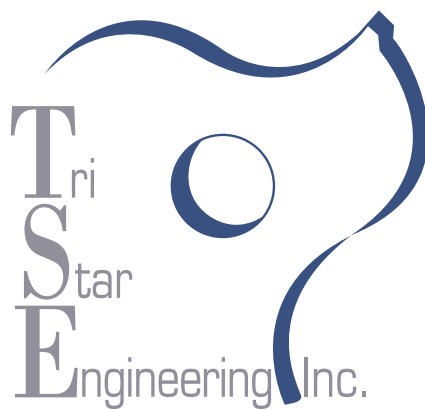
www.TriStarEng.com

Commitment to Technology

To further showcase our commitment to the latest technology, Tri-Star Engineering's web site, www.tristareng.com, gives an overview of the company and insight into our products. We have created a knowledge base of the machine tool practices we employ. The benefits of Cam Relief Grinding are explained. J512 seat tool design is discussed and dimensions and materials are presented so that you can easily develop a quotation and E-mail it to us. Online communication is a valuable tool, which allows us to make document changes and updates efficiently. Tri-Star Engineering utilizes online communications and data transfer to their fullest potential. With the ability to send quotes and AutoCAD files (or Acrobat files if you are not an AutoCAD user) online, we are able to communicate with our customers quickly and effectively.



Tri-Star Engineering offers experienced and skilled labor using CNC equipment to manufacture the different cutting tools required to make your complex part. These parts were made using Tri-Star Engineering's tools at a cost that proved to be a value upon application



p. 847.595.3377 f. 847.766.3377

2455 Pan Am Blvd. Elk Grove Village IL 60007

sales@tristareng.com

www.TriStarEng.com
