



Custom Machines



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Phoenix designs and manufactures machinery for special purposes for customers whose part design or production requirements cannot be met using standard machine tools. We utilize our many years of design and manufacturing experience to provide our customers with custom machine solutions for a wide range of part and production volume requirements.

The machine shown on this page was designed to drive a 24" diameter milling cutter with more than 500 inserts thru a jet engine hub to pre-machine slots before broaching. This new process increased production 2 fold while reducing tooling cost and setup time. While this design was based on our Gear Gashing product, this application is unique and this is the first time it had been attempted anywhere in the world.



Examples

Graphite Machining

To fulfill a customer's unique design requirements Phoenix designed its largest and most complicated machine to date. This machine, which is comprised of 3 stations, 24 axis, and a gantry robot loading system; centers, rough and finish turns and bores and threads graphite electrodes which are then used to melt steel. The part sizes range from 14" diameter and 72" long to 36" diameter and 140" long. Depending on the part being produced, the production rate for this system is 12 parts per hour. This engineering feat is a testament to Phoenix's design and manufacturing capabilities.



Grinders: Creep Feed/Conventional/Ring Grinders

In the 90's, we began remanufacturing both single wheel and dual wheel creep feed grinders. As the availability of machine "carcasses" dwindled, we embarked on the design and build of our own line of single wheel and dual wheel grinders. These machines are built in both the vertical and horizontal orientation with both manual and automatic dresser attachments. We provide spindles with many different tapers and a wide range of horsepower. As with all our machines, these grinders are built exclusively from heavily ribbed castings for maximum stability. The machine shown at right is a special dual wheel grinder designed to grind blade roots from both sides at the same time.



4 Axis Lathes

Beyond the vertical turning family we provide, we have also designed and built small horizontal lathes. These machines were built to suit the "LEAN" manufacturing philosophy with footprint being a major contributing factor. Our machine provides twin, 12 position indexing turrets with Kennametal KM tooling for turning the stems on small aircraft engine blades. The machines were provided with high pressure coolant to the tool tip and automatic unload for quick cycle time.



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Broaching



Remanufacturing



Vertical Turning/Milling Centers



Gear Gashing