

Success Story Title: **Getting a New Cutter Head to Market**

Situation: Hermance Machine Company designed a new type of cutter head for use in wood planers. Although Hermance had manufactured a number of these new cutters, they had no documentation of the design. They needed to have these new cutters manufactured outside of the company until they had the internal capacity to manufacture them in house. Without drawings and proper documentation of the design, this was proving difficult.

Solution: Craig Miller from the Workforce Development and Continuing Education staff of Pennsylvania College of Technology documented the design of the cutter head for Hermance in the form of AutoCAD drawings.

Hermance provided a vector tool-path drawing (in electronic format) saved from the original MasterCAM file that was used to create the part. Additionally a paper drawing detailing each end of the cutter was provided. From these two sources and from input provided by Hermance employees, an Autodesk Inventor 3D solid model of the cutter head was produced. From this 3D model, Craig created 2D drawings in the Inventor software and saved it in AutoCAD 2007 format. These drawing views were then dimensioned and annotated using AutoCAD 2007 to produce the final detailed prints of the part. These drawings provided sufficient detail, such that an outside manufacturer would be able to manufacture the cutter heads on a temporary basis for Hermance.

The scope of the project included visits to Hermance to study and review the design of the cutter for the purpose of documentation.

Deliverables:

- Two sets of B-Size prints detailing design of Helical Cutter Head (8 Drawings total)
- CD containing the following files:
 - AutoCAD 2007 files of the Helical Cutter Head Drawings
 - Format is AutoCAD 2007 - .DWG
 - DWF files of the Helical Cutter Head (Suitable for use with other CAD software.)
 - Format is AutoCAD 2007 - .DWF
 - Inventor 11 solid model part file
 - Format is Inventor 11 - .IPT
 - IGES solid model part file (Suitable for use with SolidWorks & other modeling software compatible with the IGES file format
 - Format is .IGES

Results: In August 2006, the company was able to take examples of their new cutter head to one of the trade shows they participate in, The International Woodworking Fair, (which is the biggest international trade show in this industry in the world every other year). They have also been able to obtain a provisional patent on this new product.

Claire advised the following: "We have had test cutter heads in the field with a couple of customers since August 2006. We have heard they are very satisfied. Normally, we are buying a competitor's cutter head and receive many complaints on durability. Sometimes, the competitor's cutter head breaks often in the first month. So far, two customers have the Hermance cutter head in the same machine since August. It appears that our cutter head currently is producing the desired results."

The following quantitative results were calculated as of February 9, 2007 by Claire Strouse...

Total in-kind matching support valued at: \$147,711

Increase in sales: \$150,000

Reduction in labor costs: \$50,000

Change in sales due to export: 20%

Number of full time jobs created: 1

Number of full time job retained: 2

Testimonial Name: Claire Strouse

Testimonial Title: Vice President

Testimonial: The IMC was extremely helpful in providing Hermance Machine Company very quick response to a specialist in the Drafting area to assist us with proper drawings and description for our new prototype cutter head. Without the assistance of the IMC's referral to Craig Miller, from Penn College, Hermance would have never been able to put together the paperwork needed in order to get a provisional patent. In addition, Hermance was preparing to attend the largest woodworking fair in the world, "International Woodworking Fair", which is held every other year in Atlanta GA. Hermance Machine wanted to show our new prototype cutter head at the IWF show in August 2006. The IMC was so efficient in providing us a referral. And the IMC's referral saved us so much time and hassles with a very knowledgeable individual who could get the job done to assist our small business reach continued growth and expansion here in the Williamsport PA area.

The professionalism offered to us from the IMC to achieve the provisional patent prior to the IWF show in Atlanta GA in August 2006 was astounding and so appreciated. The IMC's referral provided us the much needed expertise with their knowledge, guidance and financial support. With the IMC's expertise, our small business was able to meet goals we thought were unattainable.