

## **Catia V5 NC Post-Processing**

*Bryan Felsher, True Precision*

As a CNC programming Services Bureau, how to post-process aptsource code for our nearly 30 customers (and growing!) was an issue that was daunting, to say the least! With so many different options, we had to decide what was best for us.

Most shops only need to support the machines within their vicinity. However, we must provide code for hundreds of machines- and even the same machine at two different customers, may require code that is quite different, depending on custom configurations.

Narrowing it down to two options gave us this: 1) Purchase post-processor generator software and create our own posts from scratch or from supplied "templates". 2) Purchase individual executable post-processors customized for a single machine, maintained by an outside post-processing service.

From the beginning, we expected a need to support many machines, and foresaw the amount of machines going into the hundreds. Time proved we were right. However, with a massive load of NC programs to write, how were we ever going to find the time to master the complex coding languages required to create our own post-processors, and what would we do when we ran into situations where we just didn't have the skills required? What if a customer had a part on a machine ready to go, and the post we wrote was wrong? This scared us!

What about the idea of purchasing individual executables one at a time as we needed them? This solved the problem of time and support, but how expensive could it get? A post-processor builder costs from \$6000 to \$18000 based on our quotes. Individual custom post-processors cost from \$1500 to \$5000 depending on the number of machine axes. Doing the math, it surely seems not to be very cost effective!

So, as the reader can see, this gave us quite a dilemma! That's when we heard about NC Data Services and their benchmark post-processor solution, AZPost. Is it possible to have the perfect compromise between a general post-processor builder AND a customized executable? And to include support for the post until it is working to our exact specifications? All we could say was "Tell us more!"

Here's how it works: An AZPost-processor is delivered as a stand-alone executable post-processor for a specific machine. A standard Catia ptable will work for all AZPost-processors. A configuration file is provided with the executable that is tailored to the exact machine the customer requests. The G-code will come out perfect for that machine. In fact, I have never, ever seen a single post-processor that properly handled Catia 3D circular interpolation with dual-rotary machines, nor have I ever seen another post-processor that gives "what you see is what you get" on any type of axial Cycle!

The configuration file can be duplicated and modified as many times as the customer wishes for any machine in the world that has a similar configuration. So, an AZPost for a 5-axis A/B head machine with B primary could be configured for ANY similarly configured machine as many times as the customer wishes. Decimal formats, tool change macro's, start-end blocks, etc. are all configurable with standard English Language in the configuration file. There is no difficult programming code to learn, and the documentation is excellent. For example, I bought one 5-axis A/B head machine with B axis primary and with it, I have posted for SNK PC-60's, PC-120's with gage length, Fanuc controls with 5-axis tool-length compensation, and Cincinnati machines with Acramatic controls. The list could be extended indefinitely.

The bottom line is I don't have to buy ONE post-processor for ONE machine. I just have to buy ONE executable for each "style" of machine, and with it, I can configure as many times as I want for as many machines as I want. And...it's simple to do!

Oh- and for those that are wondering, how does one post the aptsource file? Simple. Right click on the aptsource and click "Post." It will automatically grab the correct executable as well as the correct configuration file based on a simple machine statement. Or, a batch file is provided so one can post the NC code directly from within Catia by clicking an icon. Seamless integration.

This turned out to be the perfect solution for me. I didn't need a hundred post-processors for a hundred machines. I got something that worked perfect from the start, with all the special APT words I wanted, and with great documentation. And the price was lower than any custom post I had quoted- and those posts would only work for a single machine!

True Precision is a CNC Programming Services Bureau supporting Military/Defense and Aerospace manufacturing across North America with 15 plus years of experience in the development of CAD/CAM/CNC programming. They can be reached through their website at [www.trueprecisioncnc.com](http://www.trueprecisioncnc.com).

NCData Services is a manufacturing services and consulting company with 30 plus years of experience in the development and implementation of CAD/CAM systems specializing in the application of CAD/CAM/CAE systems to machining technology, manufacturing software migration, manufacturing processes, and CNC machine tool post processor development services. They can be reached at [www.ncdataservices.com](http://www.ncdataservices.com).