# Predator Virtual CNC™ - KBA #2300004

*Knowledge Base Article for improving CNC verification and simulation*

**Issue**

Toolpath motion does not rotate/simulate like the CNC machine.

**Solution**

Toolpath motion will rotate/simulate just like a CNC machine if Predator Virtual CNC is configured correctly. The kinematics of the actual machine must be appropriately defined within Predator Virtual CNC. Predator Virtual CNC supports a very wide range of machine tool designs/kinematics. If a particular machine within Predator Virtual CNC is not working then start reviewing the following details:

- The machine type for example 5 Axis VMC vs. 5 Axis HMC
- Specifying the appropriate Control or Reverse Post within the Control tab
- STL files for the appropriate machine components
- 4 and 5 Axis machines require the Rotary Tab to be complete and accurate
- Spindle orientation and gage line positions within the Spindles tab
- The Linear Axis Sequence within the Moving Parts tab
- The machine basement within the Moving Parts tab

NOTE: 4 and 5 axis machines require the pivot points to be accurate. If these values are not provided by the machine tool builder then go out to the machine and physically measure these values from the machine datum/origin. If the 4 and 5 axis pivot points are not correct the toolpath motion will never rotate/simulate like the CNC machine. All of the above itemized details must be accurate for Predator Virtual CNC to accurately rotate/simulate like the CNC machine.

Before running any jobs or simulating any G code, jog the virtual machine within the Moving Parts tab. This can be done by grabbing one of the slider bars and dragging it with the mouse. Dependent components will turn green. For example in most cases the 5th axis will be dependent on the 4th axis. The only exception to this is when there is one rotary table and the one rotary head. Remember, there is no point in running an actual job until the machine kinematics are correct.

NOTE: STL files are not required for every machine component. In other words, if you only need to simulate and collision detect the spindle head and a rotary table that is fine.

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Only create and specify two STL files. The first STL file will be used for the spindle head and the second STL file will be used for the rotary table.

**References**

Should additional details be required, contact Predator Software via the following:

support@predator-software.com

The information in this article applies to:

- Predator Virtual CNC v5.x
- Predator Virtual CNC v6.x

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