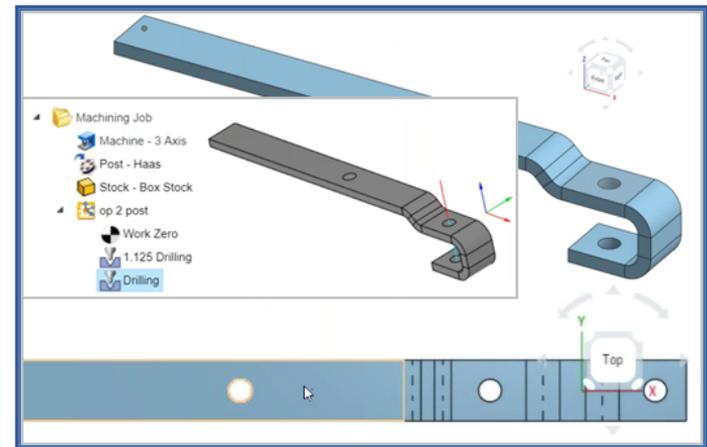


VisualCAMc at West Penn Manufacturing Technologies!

West Penn [Manufacturing Technologies \(WPMT\)](#) located in Cresson, PA is a 40,000 sq. ft. manufacturing and fabricating facility with 80+ years of combined manufacturing experience on site. Their services include a full range of metal and nonmetallic cutting from .005 thick to 6 inches thick using waterjet, LASER, HD Plasma, MIG and TIG welding, CNC bending and punching, and machining of metal, plastic and foam products.

Established in 2018, West Penn Manufacturing Technologies was founded as a Metal Fabricating facility and has grown to offer new materials as well as engineering design and full product manufacturing. WPMT has quickly grown to service clients of all sectors including some of the country's largest rail car and heavy equipment manufacturers, aggregate and mining equipment manufacturers and the Department of Defense (DoD) and other military and defense related companies.



The VisualCAMc Difference

George Bohrer, Chief Operations Officer at WPMT has been in manufacturing for over 40 years with such powerhouses as [Newport News Shipbuilding](#) and [BMI Defense Systems](#). For Computer - Aided Design (CAD) George has previously used SOLIDWORKS and ProE but has completed a 100% migration to the [Onshape Product Development Platform](#) for the past 2 years.. For Computer-Aided Manufacturing (CAM) George has previous experience with Mastercam and Gibbscam but has recently migrated to [VisualCAMc for Onshape](#) from MecSoft Corporation.



“We really like how VisualCAMc is nested right in with Onshape. As soon we’re done drawing a part we can add VisualCAMc to the document and create the CAM file right there in Onshape. VisualCAMc saves us a lot of time, it’s convenient, easy to use and the price is right!”

George Bohrer

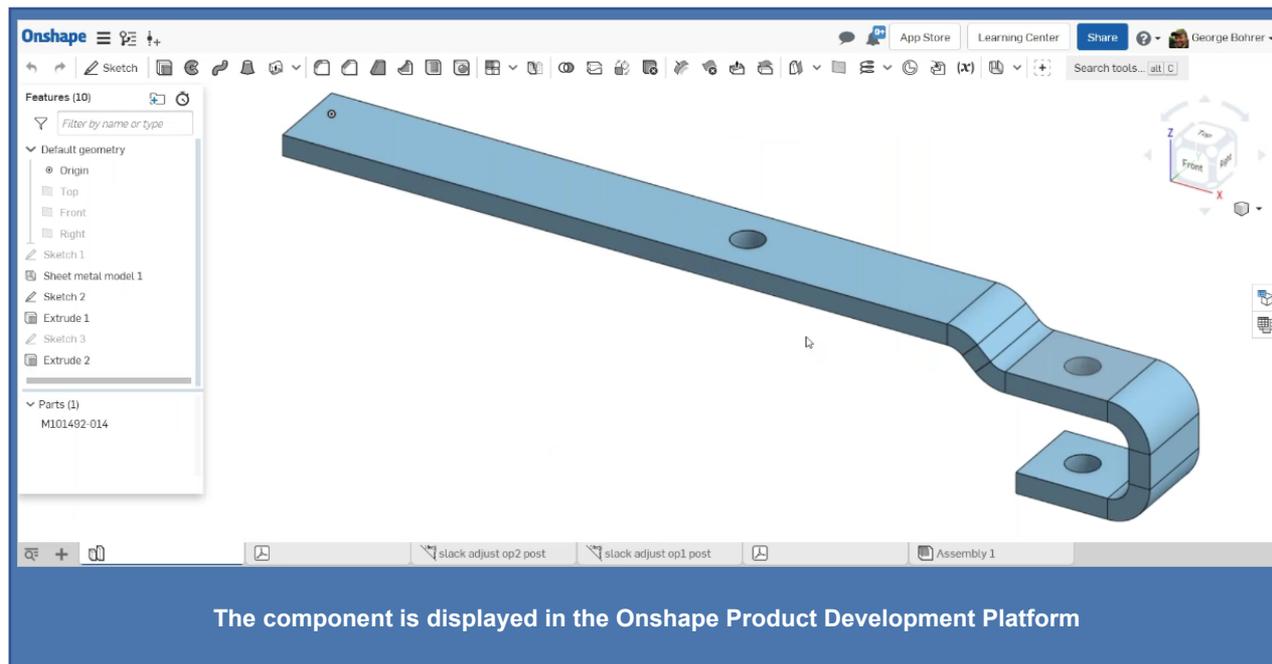
Chief Operations Officer
WestPenn Manufacturing Technologies Cresson, PA

WPMT is a “build to print” manufacturer with approximately 1,000 different components being manufactured for a range of world-wide companies. The typical CAD/CAM workflow begins with a PDF component document drawing with dimensions and specifications. This is then 3D modeled in Onshape to the customer’s exact specifications. If the part requires CNC (Computerized Numerical Control) milling, the [VisualCAMc app for Onshape](#) is used to generate the toolpaths strategies and g-code needed to drive their CNC mill directly from within [Onshape](#).

Below are just a few examples of components modeled in Onshape and milled using the VisualCAMc for Onshape app. [Click here to add VisualCAMc to your onshape account today!](#)

Sheetmetal & Hole Configurations

This formed and machined component has multiple design configurations within the Onshape part document. VisualCAMc understands these configurations and allows you to automate the g-code generation for all configurations at once!

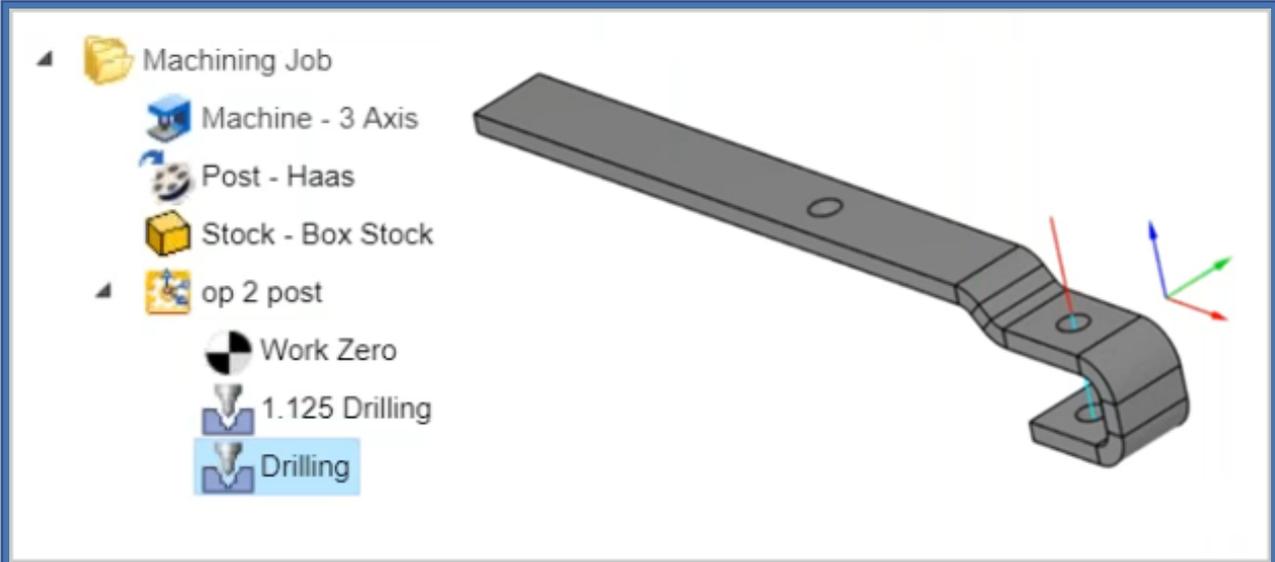


Sheet metal context:

Bends			
#	Name	Radius (in)	Angle (deg)
1	Bend A	0.75	45
2	Bend B	0.75	45
3	Bend C	0.75	90
4	Bend D	0.75	90



This component has 4 configurations for Hole Diameter and Bend Angle.



The screenshot displays the VisualCAM software interface. On the left, a tree view shows the following structure:

- ▲ Machining Job
 - Machine - 3 Axis
 - Post - Haas
 - Stock - Box Stock
 - ▲ op 2 post
 - Work Zero
 - 1.125 Drilling
 - Drilling

On the right, a 3D model of a mechanical part is shown. A red line indicates the axis of a hole being drilled. A 3D coordinate system with blue, green, and red axes is visible next to the part.

The component is shown here with its VisualCAMc Machining Job that includes a 1.125 diameter pre-drill and 1.500 finish drill operation.

2½ Axis Machining

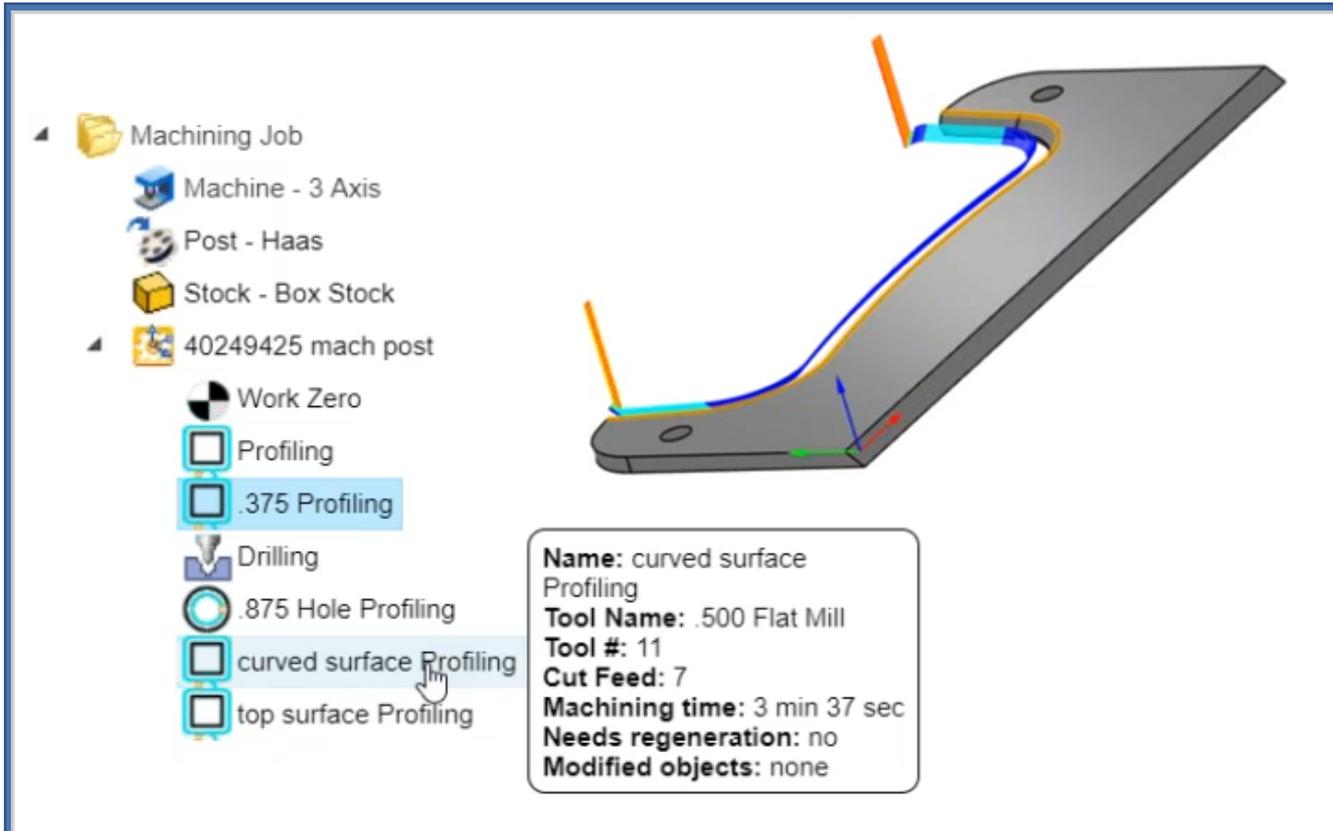
WPMT makes extensive use of the VisualCAM₆ Hole Making and 2½ Axis toolpaths strategies for the control and precision needed to meet their most rigid customer specifications. Two examples of these applications are shown below.

The screenshot displays the VisualCAM software interface. On the left, a tree view shows the project structure: 'Machining Job' (folder), 'Machine - 3 Axis' (machine icon), 'Post - Haas' (post icon), 'Stock - Box Stock' (stock icon), and 'pocket profile ri' (part icon). Under 'pocket profile ri', there are three items: 'Work Zero' (work zero icon), 'Pocketing' (pocketing icon, which is highlighted with a mouse cursor), and another 'Pocketing' (pocketing icon). A tooltip popup is visible over the highlighted 'Pocketing' item, displaying the following information:

- Name:** Pocketing
- Tool Name:** .500 Flat Mill
- Tool #:** 11
- Cut Feed:** 27
- Machining time:** 7 min 55 sec
- Needs regeneration:** no
- Modified objects:** none

On the right, a 3D model of a formed sheet metal component is shown. The component has two rectangular pockets highlighted in blue. Red and yellow lines indicate the toolpath and tool orientation for the pocketing operation. A 3D coordinate system (X, Y, Z axes) is visible at the bottom right of the model.

In this formed sheet metal component, a 2½ Axis Pocketing toolpath operation is used. The tooltip popup dialog displays machining information at a glance including Tool, Cut Feed and Machining Time.



Machining Job

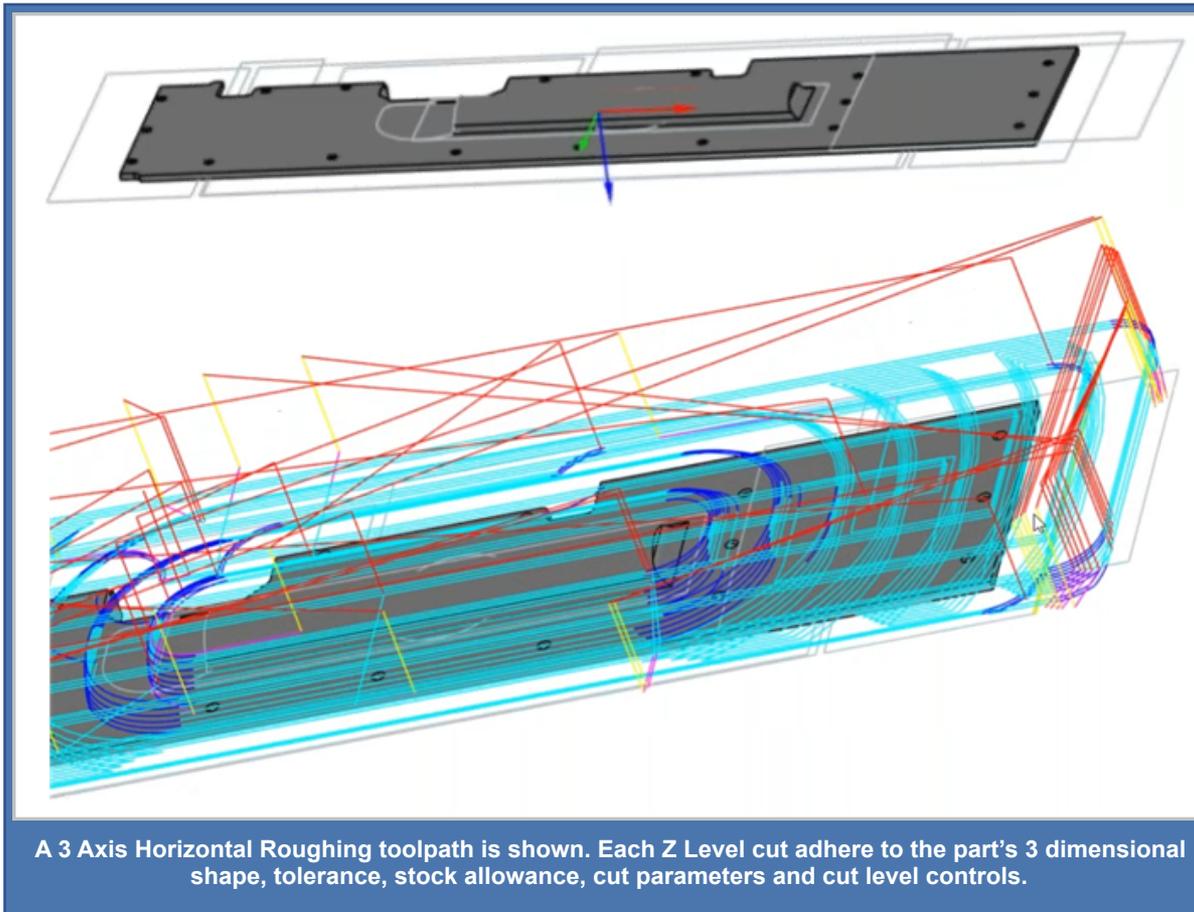
- Machine - 3 Axis
- Post - Haas
- Stock - Box Stock
- 40249425 mach post
 - Work Zero
 - Profiling
 - .375 Profiling**
 - Drilling
 - .875 Hole Profiling
 - curved surface Profiling**
 - top surface Profiling

Name: curved surface Profiling
Tool Name: .500 Flat Mill
Tool #: 11
Cut Feed: 7
Machining time: 3 min 37 sec
Needs regeneration: no
Modified objects: none

In this component Drilling is used to rough the two hole features. Hole Profiling is then used to finish the diameter to the required dimension and tolerance. You also see a series of 2½ Axis Profiling operations.

3 Axis Machining

VisualCAMc also includes 3 Axis roughing and finishing toolpath strategies. 3 Axis Horizontal Roughing is shown in the example below. Sometimes referred to as Z-Level Roughing, this toolpath strategy removes stock in successive Z level cuts accounting for 3D part shape and stock allowance. This strategy provides an extensive set of cut parameters including separately controlled core and cavity cut patterns, stepover and cut direction. Cut level controls include stepdown, cut levels ordering, Z level constraints and the automatic clearing of flat surfaces. 3 Axis finishing strategies include Z Level Finishing, Parallel Finishing, Radial Finishing and Spiral Finishing.



For More Information

We would like to extend a special thanks to George Bohrer and [West Penn Manufacturing Technologies \(WPMT\)](#) for allowing us to showcase their work! To learn more about WPMT, we invite you to visit them online at [LinkedIn](#) and [facebook](#). To learn more about Onshape we invite you to visit them at www.onshape.com or read more in the [Onshape CAD blog](#). For more information about VisualCAMc we invite you to visit the [VisualCAMc product page](#) and learn more in the [MecSoft Tech Blog](#).

For the complete features list, we invite you to visit the [VisualCAMc Product Page: mecsoft.com/visualcamc/](#)

Try VisualCAMc Today!

**Powerful production CAM for Onshape
users!**