Documentation SplineCam^{TM}

Getting Started

To launch the SplinecamTrial plug-in, use the following command: **SplineCAMTrial**

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Usage

To initiate the utility, type "SplineCAM "at AutoCAD's command line. Once it's initiated you can see the **Main** window as the first tab, **Settings** as the second tab and **Utils** as the third tab.

About SplineCAM^{TM}

It is an effective tool for converting splines to polylines or polyarcs (lines and arcs) based on the chord error specified. Most CNC softwares don't import spline geometry. Even the ones that import converts the spline into infinitely many number of tiny line segments which most CNC controllers don't like. Using splineCAM you can convert spline geometry into polyarcs which are optimised in terms of number of vertices and smoothness of the profile.

About SPLINEDIT command:

Autocad has an inbuilt SPLINEDIT command which has several shortcomings. Please refer to the "Splinedit_bugs.dxf" file in the Help folder of your app-bundle (typically "C:\Users\Welcome\AppData\Roaming\Autodesk\ApplicationPlugins \Appname.bundle\contents\Help" or "%AppData% \Autodesk\ApplicationPlugins\Appname.bundle\contents\Help"). The precision value demanded by the splinedit command is not well defined. A low value can give a rough polyline output and a high

value can result in huge number of tiny line segments, which is inconvenient to work with. On top of this SplineCAM has several other commands like "AutoJoin polylines", "Polyline 2 Parcs " etc. which make it very easy to take a spline geometry to a CNC machine.
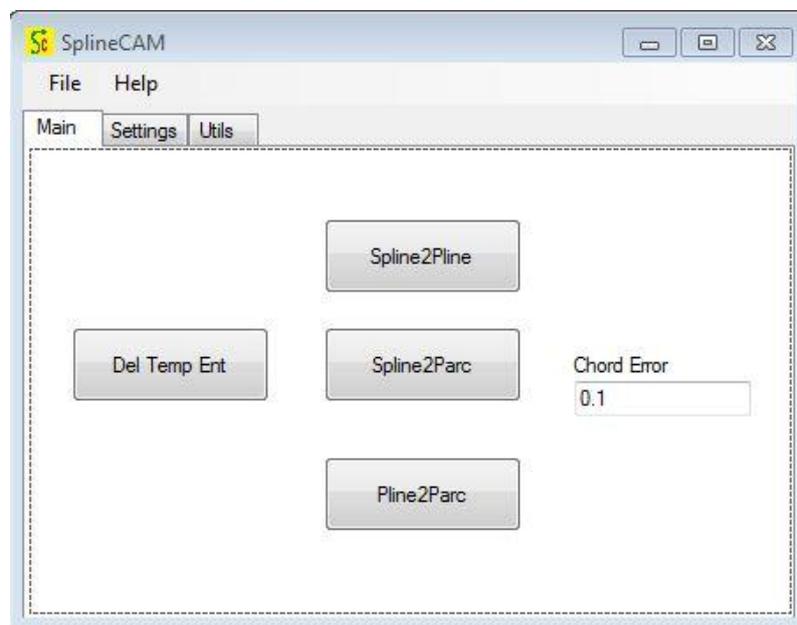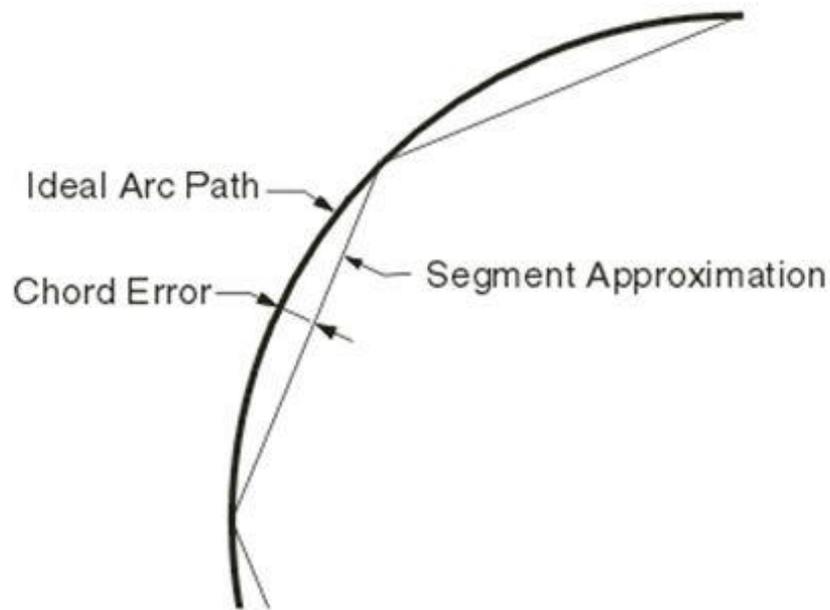
Screen Shots:

Main Tab:

Various buttons and its functions:

Chord error:

It's the maximum deviation allowed between the true geometry and the generated geometry. To make you familiarize with it look at the picture below

Ideal Arc Path — Segment Approximation
Chord Error —

If the chord error value is not specified, the default value is taken to be 0.1 mm or 0.004 inches.

Spline2Pline

Action:

Specify chord error in the provided text box. On clicking this button, you will be prompted to select splines. After selecting you have to press enter to convert splines to polylines based on the chord error specified. Original splines will move to different layer i.e. Acam_Tmp layer with its colour changed to red.

(Note: you can visualize the change i.e. you can see the created polylines from splines only after closing SplineCAM plugin!!!)

Usage:

This tool reduces the number of vertices and provides an accurate lines fit based on the chord error specified

Spline2Parc

Action:

Specify chord error in the provided text box. On clicking this button, you will be prompted to select splines. After selecting you have to press enter to convert splines to Lines and arcs based on the chord error specified. Original splines will move to different layer i.e. Acam_Tmp layer with its colour changed to red.

(Note: you can visualize the change i.e. you can see the created polylines and arcs from splines only after closing SplineCAM plugin!!!)

Usage:

Using arc-fit helps to minimize the number of vertices in the output geometry and also smoothen the figure/shape. The resultant geometry when machined in CNC produces a much better quality output in terms of smoothness and aesthetics.

Pline2Parc

Action:

Specify chord error in the provided text box. On clicking this button, you will be prompted to select polylines. After selecting you have to press enter to convert many small polylines to an arc or arcs based on the chord error specified. Original polylines will move to different layer i.e. Acam_Tmp layer with its colour changed to red.

(Note: you can visualize the change i.e. you can see the created poly arcs from splines only after closing SplineCAM plugin!!!)

Usage:

Several times the drawing exported from other graphics software imports into Autocad as a huge collection of tiny polylines. It is very in-convenient to work with such geometry. This command can convert such in-efficient geometric representation into a smooth set of lines+arcs, optimised in terms of number of vertices and smoothness of the output geometry.

The resultant geometry when machined in CNC produces a much better quality output in terms of smoothness and aesthetics.

Del Temp Ent

Action:

On clicking this button, all splines and polylines present in the Acam_Tmp layer gets deleted.

Usage:

When using the Spline2Pline & Spline2Parcs & Pline2Parc commands, the original geometry is retained in the Acam_Tmp layer and its colour is changed to red. This way user can visually compare the fitted geometry with the original. If satisfactory, then user can delete the original geometry with a single button click.

Settings Tab:

You can specify your working units under the setting tab of SplineCAM. You can choose between metric and inches as shown in Figure.2

Mainly this affects the default chord error value used by SplineCAM. (0.1mm for metric mode & 0.004 inches for Inch mode).
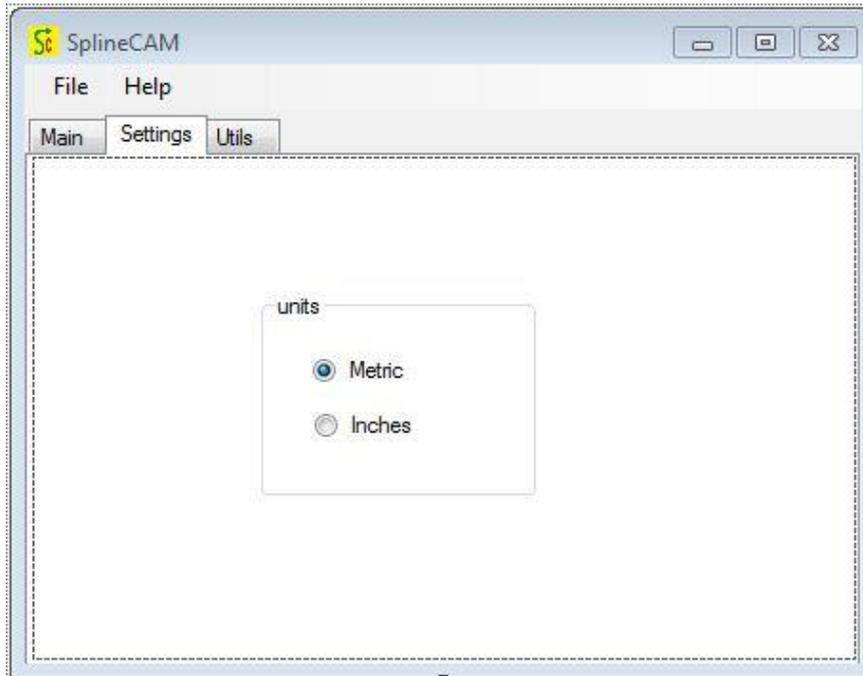
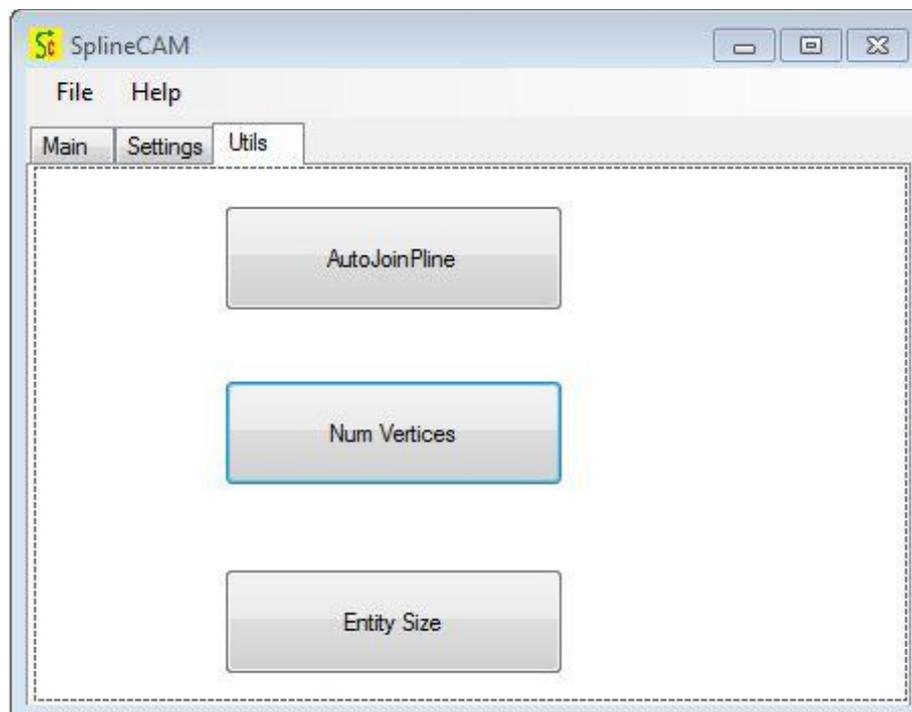Figure 2 : Settings tab of SplineCAM

Utils Tab:

Figure 3 :Utils tab of SplineCAM

AutoJoinPline

Action:

On clicking this button, you will be prompted to select un-joined polylines. After selecting, you have to press enter to get a single joined polyline

(Note: Polylines should be touching or very close enough for joining!!!)

Usage:

This tool enables you to join the unjoined polylines in a single button click. For smooth contouring and efficient machining, Polylines should be joined before taking the drawing for machining.

(Note: you can visualize the change i.e. you can see the created poly arcs from splines only after closing SplineCAM plugin!!!)

Entity Size

Action:

On clicking this button you will be asked to select entities. After selecting you have to press enter to see the overall length and overall width of the selected entity in a pop up message box.

Usage:

This tool quickly gives you the XY size of the entity in a single click, so that you can plan your raw material, nesting, machine stroke etc. to machine the part.

Num vertices:

Action:

On clicking this button you will be asked to select an entity. After selecting you have to press enter to see the number of vertices of the selected polyline in a pop up message box.

Usage:

When you convert a spline to polyline for machining using splinedit, autocad throws in a huge number of points/vertices. Some CNC controllers don't like these many points on the polyline. This tool helps to keep an eye on this data.

Any other queries: please email to support@autocam2d.com

How to Register the software?

First, you have to download the software in autocam2d.com website or app store. Then follow the steps below to get your product registered.

Click on Help → Register in the Software. You will be seeing a dialog similar to one below.
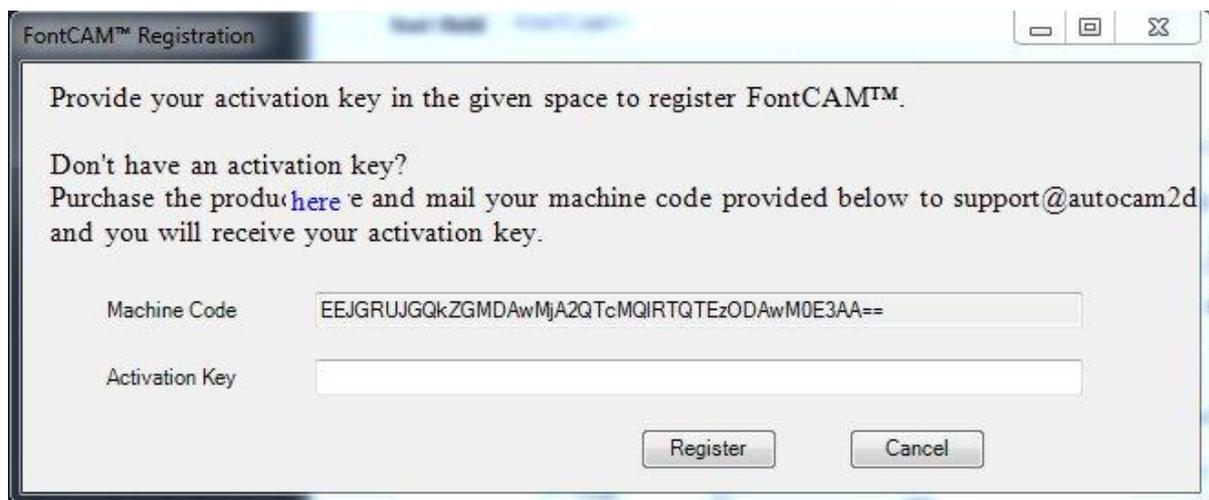
Machine code which you are seeing above is unique for each system. So copy this machine code and mail it to support@autocam2d.com.

You will be replied with an activation key for the corresponding machine code.

Enter the activation key in the space provided and click on register button to register your product.

Follow these simple steps to register your product.

How to check the License validity?

Click on Help → About in the software. You will be seeing a dialog similar to one below.

You can see the number of days left for renewing the license, version number, and other details of the software in the dialog above.

FAQ:

1) My command FONTCAM is not recognised by AutoCAD:
   Make sure AppAutoLoad value is non zero. This Controls when plug-in applications are loaded as follows:
   0
   Do not load plug-in applications at any time
   1
   Display all messages when loading plug-in applications
   2
   Load plug-in applications at startup
   4
   Load plug-in applications when a new drawing is opened
   8
   Load plug-in applications when they appear in the plug-ins folder

   To change value : Type AppAutoLoad in autocad CommandLine.
   Suggested default value: 2