FontCAM^{TM} Documentation

Getting Started

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

Usage

To initiate the utility, type " **FontCam** " at AutoCAD's command line (Case in-sensitive). If you have downloaded trial version of the app, you have to type "FontcamTrial" at AutoCAD's command line. Once it's initiated you can see the **Linear Text** window as the first tab, **Arc Text** as the second tab and **Settings** as the third tab and **Utils** as the final tab.

About FontCAM^{TM}

It is often required to get the outline geometry of text shapes. The text outline geometry can be used for CNC machining/engraving of the text. It can be used for other applications like extruding the text into a 3D solid etc. FontCAM contains a set of tools, which makes it easy to extract the text geometry which is smooth and optimised in terms of number of vertices. It overcomes some of the limitations in the "txtexp" tool in express tools bundle of autocad.

FEATURES:

- ✓ Output geometry as Spline or PolyLine or PolyArc entities.
- ✓ Have control over the max-deviation from original geometry when approximating text shape into polylines.
- ✓ Output any "True Type Text" (TTF) font shape installed in Windows.
- ✓ Also output single stroke font for faster engraving.
- ✓ Output Linear text or text along an arc.
- ✓ Set of tools to make the perfect sign geometry easily.

Linear Text:
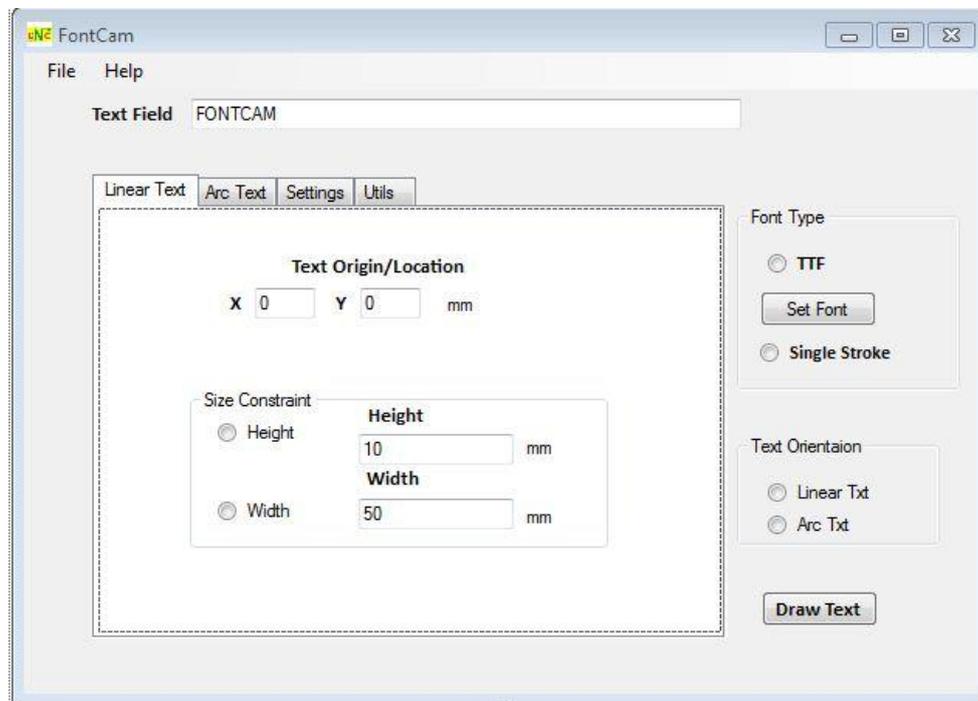
To Use this utility:

1. Write the desired output text in the given text box.
2. Select Linear Text Tab.
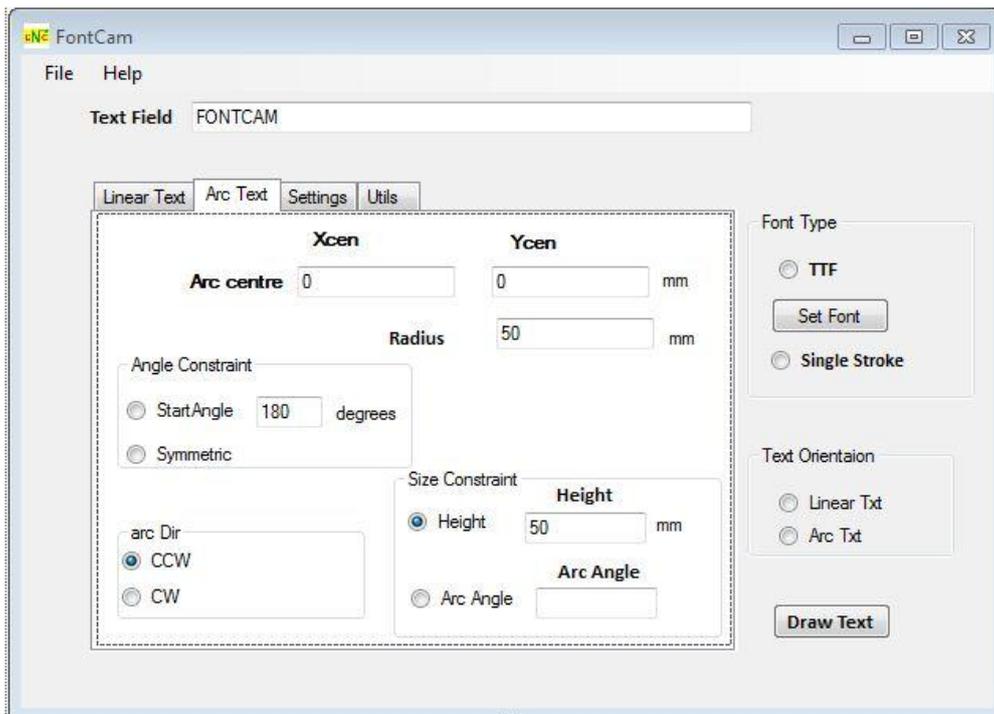3. Select Font Type TTF or Single Stroke.

TTF

- Click on **set font** button that enable the user to select fonts from the font dialog which lists all windows fonts.
- After font selection, you should specify **font geometry output type** from settings tab. (default is "Lines and Arcs" for best engraving quality).

(For Single Stroke skip above two steps)

4. Specify X and Y locations for text insertion.
5. Select either height or width constraint and specify the respective value. Note: You can specify either height or width value, but not both! This is to maintain the aspect ratio of the text.
6. Click on **Draw Text** button and close FontCam to get your desired text in AutoCad window.

Note: For TTF font type size you specify in font dialog box is immaterial!! Only the sizes you specify under constraints will be taken into account.

Arc Text:

To Use this utility:

1. Write the desired output text in the given text box.
2. Select Arc Text Tab
3. Select Font Type TTF or Single Stroke.

TTF

- Click on **set font** button that enable the user to select fonts from the font dialog which lists all windows fonts.
- After font selection, you should specify **font geometry output type** from settings tab. (default is "Lines and Arcs" for best engraving quality).

(For Single Stroke skip above two steps)

4. Specify Arc centre, radius and start angle of the arc. (Instead of specifying Start Angle, you can choose the Symmetric option, which makes the arc-text symmetric about Y-axis)
5. Select the direction of your arc text i.e. CW or CCW from arc dir group box.
6. Specify the height of your text in height text box under Size Constraint group box.
7. Click on **Draw Text** button and close FontCam to get your desired text in AutoCad window.

**Note: For TTF font type size you specify in font dialog box is immaterial!!
Only the sizes you specify under constraints will be taken into account.**

Sample Arc Text Output

Settings:
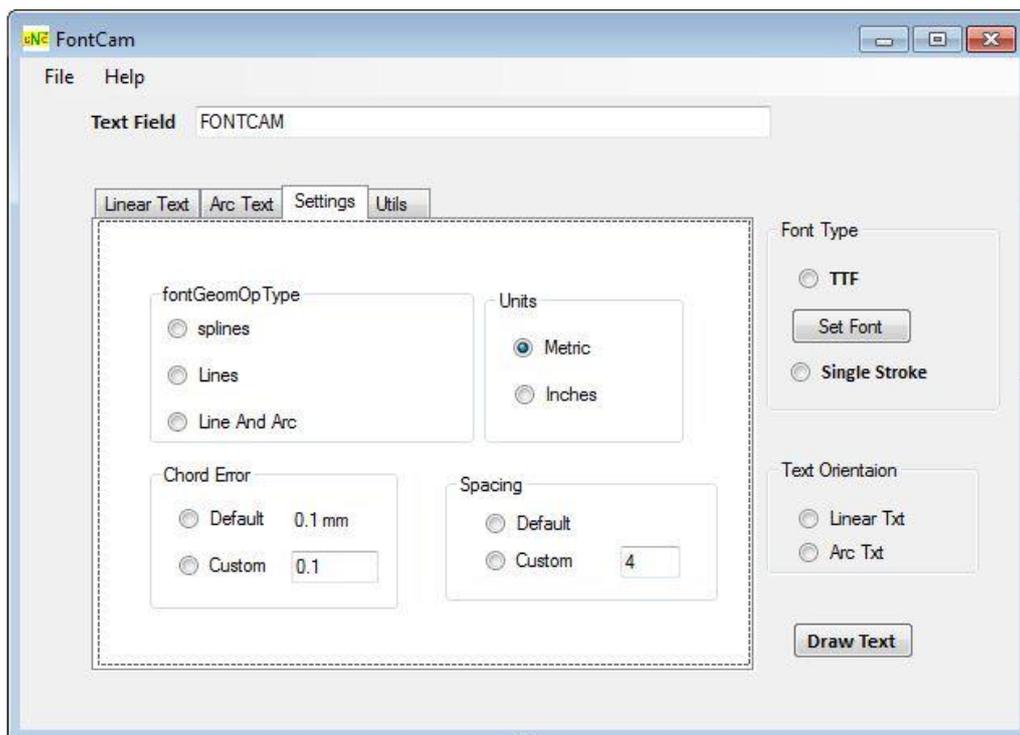
FontGeomOpType:

1. **Splines:** If the selected FontGeomOpType is this, then the resultant output will contain text-geometry made of splines.

2. **Line:** If the selected FontGeomOpType is this, then the resultant output will contain polyline composed of only lines based on the chord error you specified under Chord Error textbox.
3. **Line and Arc:** If the selected FontGeomOpType is this, then the resultant output will contain polyline composed of lines and arcs based on the chord error value that you specified under Chord Error textbox. 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.

Units:

If the selected unit is metric all text box fields and default value will be changed into mm. If the selected unit is inches then all text box fields and default value will be changed to inches. Mainly this affects the default chord error value used by FontCAM. (0.1mm for metric mode & 0.004 inches for Inch mode).

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
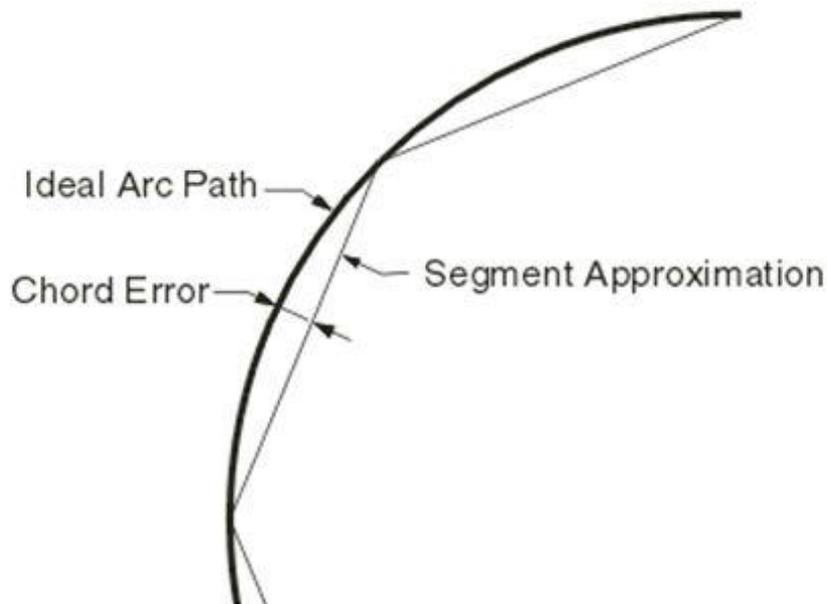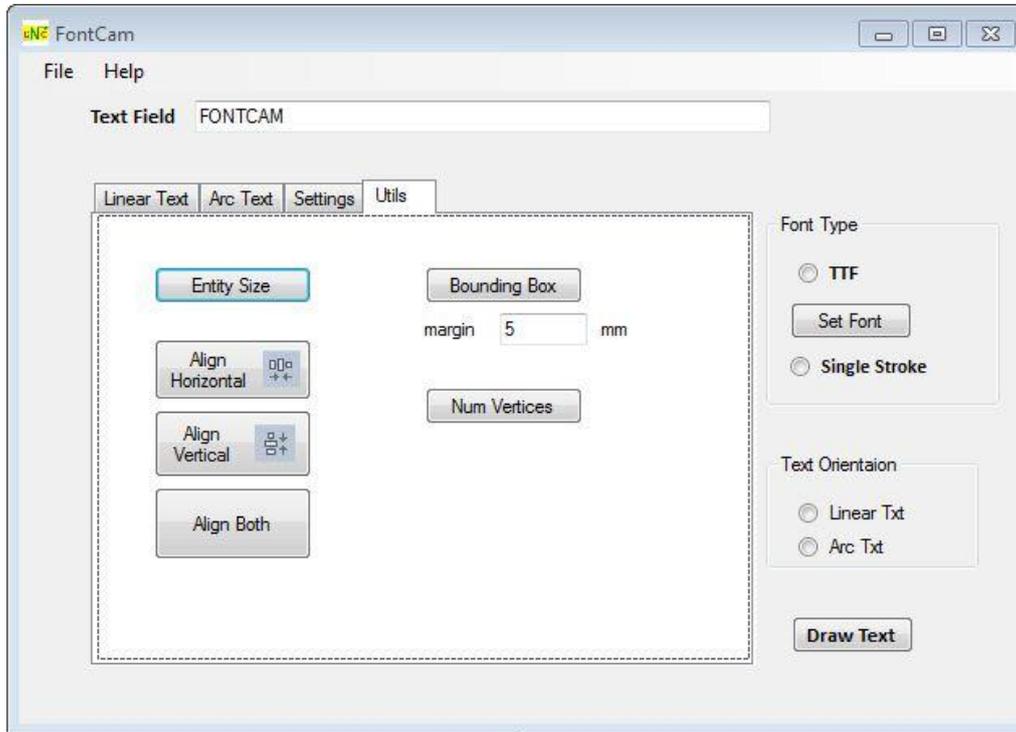

If the chord error value is not specified, the default value is taken to be 0.1 mm or 0.004 inches.

Spacing:

This controls the spacing between letters in a word. Spacing choice can be default or Custom. Custom value to be specified in percentage. 100% custom spacing is equivalent to leaving a "space" between letters.

Utils:

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. This command works only on LWPOLYLINE objects.

Usage:

Using this command you can compare the number of vertices (and hence the number of lines in your G-code file) in the output geometry and compare efficiency of arc-fit over line fit.

When you convert a text to polyline (only lines) for machining, the resultant geometry is made of huge number of tiny line segments. Some CNC controllers dont like these many points on the polyline. Using arc-fit helps to minimize the number of vertices in the output geometry and also smoothen the figure/shape.

Bounding Box

Action:

Before clicking this button, you will be allowed to enter the bounding box margin value in Margin text box. Note (The margin value is for both length as well as breadth of the bounding box). On clicking this button you will be asked to select the entities for which you need bounding box. After selecting you have to press enter to draw the bounding box.

Usage:

Useful in sign making, nesting etc. Quickly add a bounding box to the selected entities alone in your figure which is exactly centred on your design.

The picture below will give you a clear idea on what is bounding box and where it is useful!! This is a small example of creating a name plate using linear text and bounding box utility of Fontcam. (note: radius has been added to bounding-box using autocad's fillet command)

Align Horizontal

Action:

On clicking this button you will be asked to select two entities. After selecting 2 entities, press the enter button. The entity you selected last will align horizontally to the first selected entity.

Usage:

Useful in signmaking, nesting etc. Quickly align your designs in vertical or horizontal directions to get the perfect look.

The pictures below will show you a clear view on what Align horizontal is and where it is useful!!
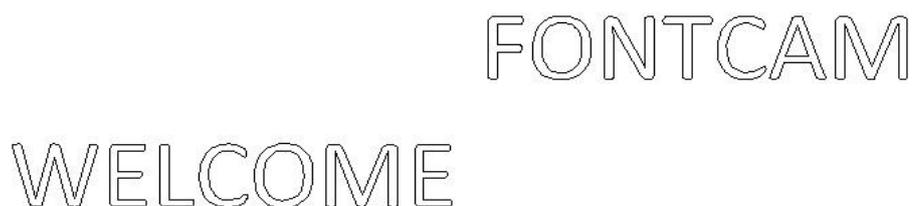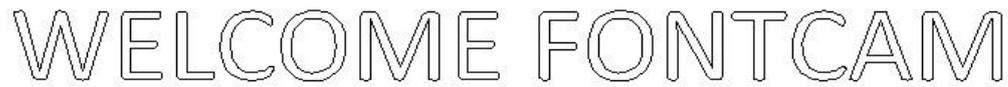

Figure 1 : Before Align Horizontal

WELCOME FONTCAM

Figure 2 : After Align Horizontal

Align Vertical

Action:

On clicking this button you will be asked to select two entities. After selecting 2 entities, press the enter button. The entity you selected last will align vertically to the first selected entity.

Usage:

Useful in signmaking, nesting etc. Quickly align your designs in vertical or horizontal directions to get the perfect look.

The pictures below will show you a clear view on what Align Vertical is and where it is useful!!

FONTCAM

WELCOME

Figure 3 : Before Align Vertical

FONTCAM

WELCOME

Figure 4 : After Align Vertical

Refresh Font List:

When you are working with FontCAM If you install any new fonts, you have to click on this button and have to wait for two minutes to get your fonts list refreshed. Draw text button is temporarily disabled during this operation. Draw text button gets enabled after a while indicates that your fonts list is refreshed.

How to Register FontCAM?

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

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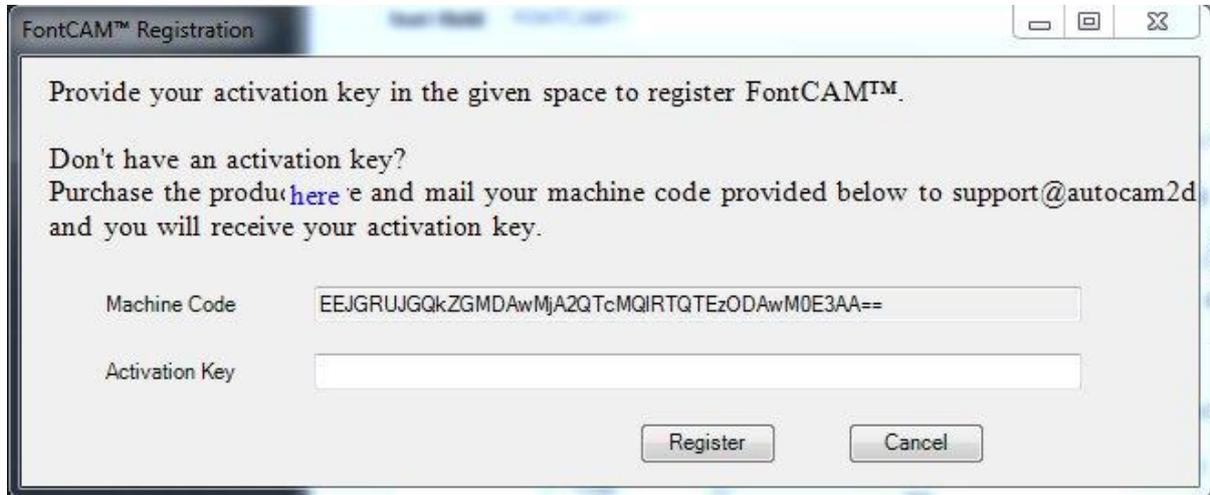
Machine code which you are seeing above is unique for each system. So copy this machine code and mail it to support@autocam2d.com.

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 validity?

Click on Help → About in FontCAM. 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 od FontCAM in the dialog above.

POINTS TO REMEMBER:

1) Avoid scaling up or scaling down the text geometry after it has been converted to polyline. Scaling up will violate the chord-error you have specified. Scaling down will un-necessarily keep too many vertices in the polyline. If you need to change the size of the text, go back to fontcam and specify the exact text size you need and re-create the text geometry.

2) Trial version will always output text as "FONTCAM TRIAL" irrespective of what you have typed in the text box. Please visit the Autodesk Exchange Store or www.autocam2d.com website to purchase your licensed version.
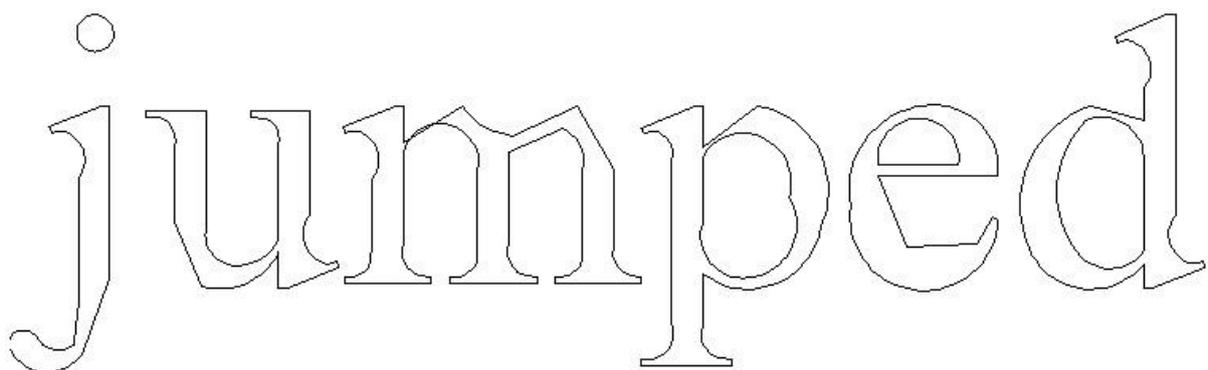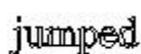
FAQ:

1) When I zoom-in and see, my text geometry looks ugly/non-smooth.

First try re-generating the drawing using the "REGEN" command of AutoCAD.

Please note that the text-geometry has been approximated to a polyline, based on the chord-error you have specified. So the approximated polyline should only be viewed at its actual size, when comparing the geometry. If you zoom-in and see the geometry, it is equivalent to scaling up the geometry, which violates the chord-error specs you have given. That is why the geometry looks ugly/non-smooth. For example, if you see a machine surface through a lens, it WILL look like a Rough terrain! Not to get confused. If you want to check the accuracy of the line/arc fit, output the same text as a spline, super-impose over the polyline approximation and measure the chord-error to satisfy yourself.

The pictures below show an imperfect looking geometry after zooming and the same geometry at its real size. The imperfections visible in the zoomed in picture are not visible when viewed at real size.

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