# Macro FCCircularText

# **Description**

This macro makes use of the <u>S</u> <u>Draft ShapeString</u> tool to create a text line placed in different circular orientations, including circumferential and helical in the fashion of a <u>Trajan's Column (htt p://en.wikipedia.org/wiki/Trajan%27s\_Column)</u>. It can also be used to create a clock face with Arabic numerals *1*, *2*, *3*, etc., or Roman numerals *I*, *II*, *III*, etc. This latter usage was inspired by the Forum thread <u>Macro to Create Clock Face (http://forum.freecadweb.org/viewtopic.php?f=22&t=501</u> 3&hilit=Clock) by FC community member, cblt2l.

Temporary code for external macro link. Do not use this code. This code is used exclusively by Addon Manager.



Example of the macro displaying text in a 360 degree orientation

# **Usage**

Launch the macro folder **FcString** for created characters and a file **FcClock** for created clocks.

All the characters are and remain independent. When creating extrusions nothing is deleted. If Compound is created with Run Comp it is copied out of the folder.

The options are shaded by default and are active in all functions if they are checked  $\square$ :

- ☐ Extrude Char.
- □ Placement.
- ☐ SP. inclination.

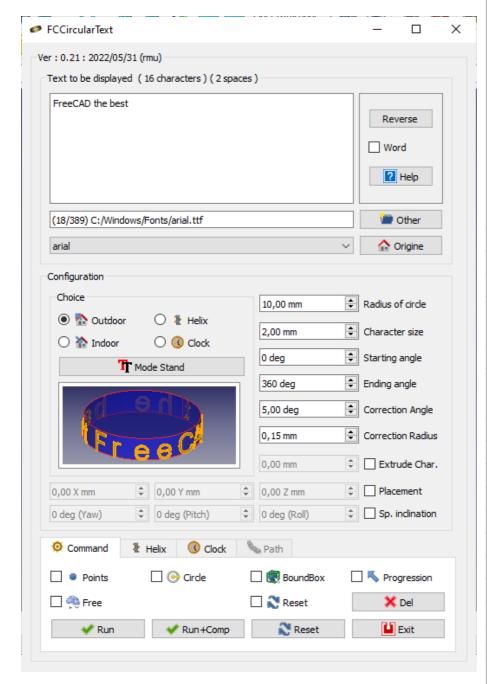
Except for one Clock Service Placement box  $\mathbf{Z}$  is [Fold ud] activated and moves the text in the direction  $\mathbf{Z}$  to place the text on the support surface.

## **Notes**

 This macro will gray-out (deactivate) options that are not relevant for a selected function.

## **Interface**

#### Overview





#### Description

Latest macro version supports a HiDPI layout (QGridLayout) and runs only on versions 0.18 or higher (requires PySide2/Qt5)

For backward compatible version of the macro see FCCircularText (https://gist.gith ubusercontent.com/mario52a/a25e802498 bae6959335/raw/db47f78f2b20a35137ac2 13b8d1a62d30f525dcb/Macro\_FCCircular Text.FCMacro) and install manually.

This macro makes use of the <u>Draft ShapeString</u> tool to create a text line placed in different circular orientations, including circumferential and helical (in the fashion of a Trajan Column). It can also be used to create a clock face with Arabic numerals 1, 2, 3, etc., or Roman numerals 1, II, III, etc.

Macro version: 0.22 Last modified: 2022/06/06 FreeCAD version: 0.19

Download: ToolBar Icon (https://www.freec adweb.org/wiki/images/c/c1/FCCircularText

Buttom.png) Author: Mario52

#### Author

#### Mario52

#### Download

ToolBar Icon (https://www.freecadweb.org/wiki/images/c/c1/FCCircularTextButtom.png)

#### Links

Macros recipes
How to install macros
How to customize toolbars

#### **Macro Version**

0.22

### Date last modified

#### 2022/06/06

## FreeCAD Version(s)

0.19

#### **Default shortcut**

None

#### See also

None

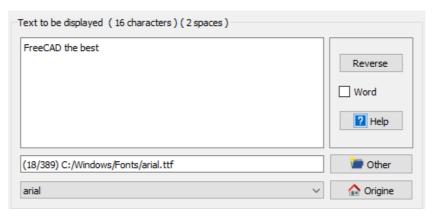
# Indholdsfortegnelse

### Description

Usage



## **First section**



- TextEdit window that lets you copy the text to display (click on the Reset allows to know the number of the input string that is displayed in the window title)
- The Reverse button reverses the text
- ☐ Word checked, this option consider the text as word, the text is cut on space and write the text word by word (instead character by character in normal use)
- The Help button displays the wiki page in the FreeCAD browser
- LineEdit: display the path and name of file font
- Other button for search the font in other directory in case all directory is not discovery automatically
- ComboView to choose the font
- Origin return to origin system font path ex: "C:/Windows/Fonts/"
  - Default ARIAL.TTF

#### Options available

After the first use, you must modify the following parameters:

## User parameter:BaseApp/Preferences/Macros/FCMmacros/FCCircularText

#### switchModeTextList

- 0 = normal text mode (and black) cuts the switchFontComBox
- 1 = allows switchFontComBox 1

#### switchFontComBox

- 0 = (and switchModeTextList= 1) text mode (in color) in ComboBox list, faster
- 1 = (and switchModeTextList= 1) fontFamily slower but more beautiful ComboBoxst!

## setSystemFonts

- 0 = matplotlib.font\_manager.findSystemFonts("C:/", "ttf")
- do all the fonts (in all folders and sub-folders of the DD) time !!
- 1 = fontman.findSystemFonts(self.pathFont)
- do all the fonts in the directory (and in all the sub-folders)

## seTtextAlignement

- 0 = AlignLeft (default)
- 1 = AlignCenter
- 2 = AlignRight

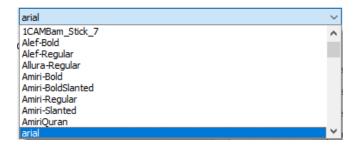
## setFontByDefault

Font by Default

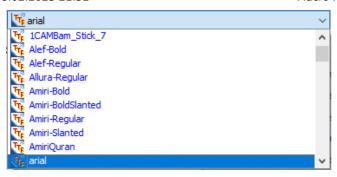
## switchResetFALSE

- 0 = reset (default)
- 1 = no reset (not recommended) some switches can remain open or close unexpectedly!

## **Example**



- 1. switchModeTextList= false
- 2. switchFontComBox = false
- 3. setSystemFonts = false
- 4. seTtextAlignement = 0



- 1. switchModeTextList= true
- 2. switchFontComBox = false
- 3. setSystemFonts = false
- 4. seTtextAlignement = 0



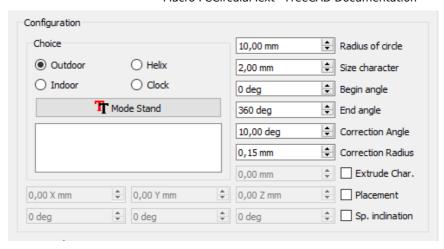
- 1. switchModeTextList= true
- 2. switchFontComBox = false
- 3. setSystemFonts = false
- 4. seTtextAlignement = 1 (0=Left, 1=Centered, 2=Right)



- 1. switchModeTextList= true
- 2. switchFontComBox = true
- 3. setSystemFonts = false
- 4. seTtextAlignement = 1

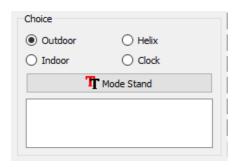
## **Second Section**

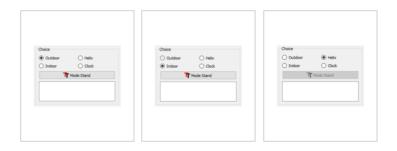
Configuring characters in FCCircularText



#### First zone

## Your choice:

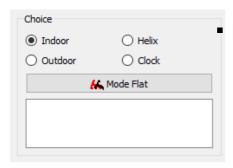




## Outdoor Indoor Helix



## **Clock**



Mode Stand or Mode Flat : The text will be placed standing or flat (same as clock) options **Outdoor** and **Indoor** are reversed.





Stand Outdoor Mode Flat Outdoor The The text will be written text will be placed flat. up.



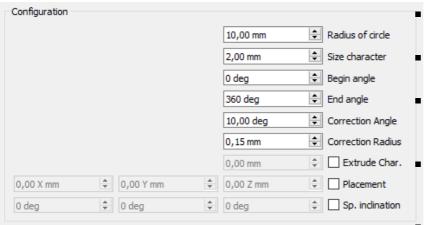


text will be placed flat.

Mode Flat Indoor The Mode Stand Indoor The text will stand registered (same as clock).

#### Second area

This section allows you to configure the overall behavior of characters in all the choices available but with some variation. If the command is not used in the option chosen, it will be graved out.



- 10.0 mm **→ Radius of circle** : Radius of the circle. (Default 10)
- 2.0 mm **Size character** : Character height. (Default 2)
- 0 deg 😝 **Begin angle** : Starting angle of the first character in the circle. (Default 0°)
- 360 deg **► End angle** : Angle end of the last character of the text. (Default 360)
- 10.0 deg  **Correction angle** :

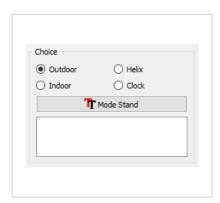
Character correction angle to make it tangent to the circle. (Default 10 °)

0.15 mm (Correction radius : Fixed the radius of the circle characters (optional). (Default 0.15)

- **Extrude Char**: Checkbox extrusion characters. (Inactive Default)
- ☐ Placement : Text placement in the 3D view. (Inactive Default)
- **Sp. inclination**: Inclination of characters in three axes X, Y and Z (example to cover such a cone). (Inactive Default)

## Outdoor

Default mode. The text is written on the outside of the circumference of the circle.



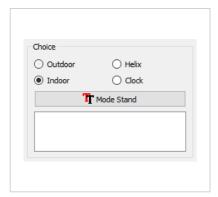




## **Outdoor**

#### Indoor

The text is written on the inner side of the circumference of the circle



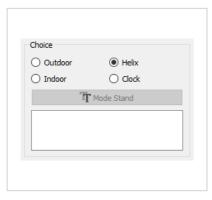




## Indoor

### Helix

The text is entered on the outer circumference of a helix.

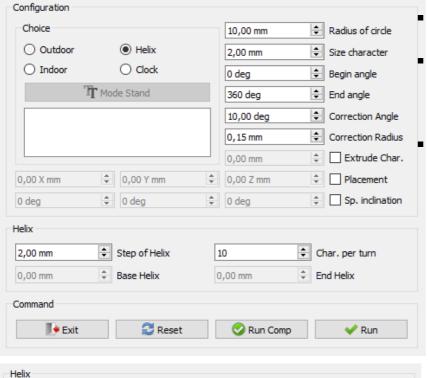






#### Helix

■ The helix area is hidden by default. The window is visible if the radio button <a> Helix</a> is checked



- All characters configuration options are available.
- Step of helix which corresponds to the pitch of the helix turns and displays 2 (character height) by default.
- Char. per turn activates and displays 10 by default, which corresponds to 10 characters per helical turn.

- If **Step of helix** (helix pitch) is zero, Spinboxes **Base Helix** and **End Helix** are activated.
- Base Helix provides the basis for

starting the helix (even Placement Z). If 'Placement Z' is different from zero, the starting point is added to Z Placement

• End Helix End of the helix pitch of the helix will be calculated relative to the height and the number of characters per helical turn.

Char. per turn

nd Helix

## Clock

0,00 mm

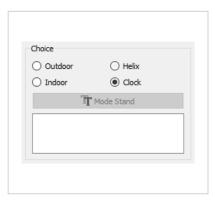
0,00 mm

The figures are part of a circle with Arabic numerals or Romans.

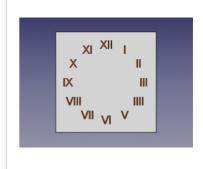
0,00 mm

Step of Helix

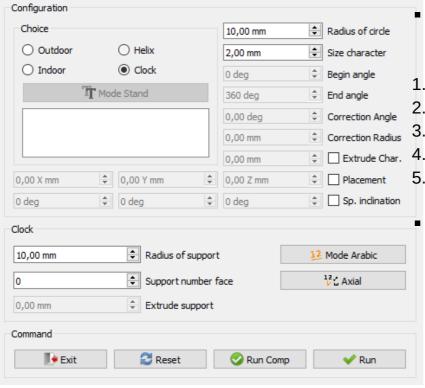
Base Helix







Clock Axial Redress



- When the selection is made, the following functions get dark and are usable:
- 1. Begin angle.
- 2. End angle.
- 3. Correction angle.
- 4. Correction radius.
- 5. The buttom Mode Stand or Mode Flat .
  - The area **Clock** is activated.

- Radius of support : If a value is given, support will be created (default 0).
  - If **Support number face** is different from zero a support is created. (If **Extrude support** =

zero then a face is created).

Clock

0

10,00 mm

0.00 mm

■ 1 = A circle is created (circle appears).

Radius of support

Extrude support

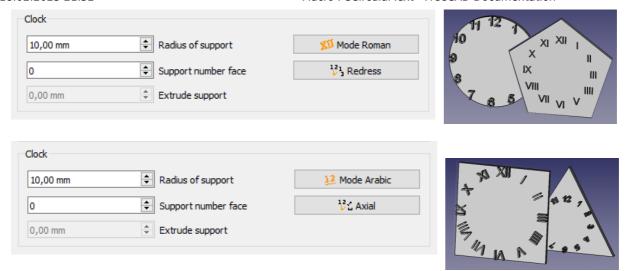
Support number face

2 = A rectangle is created (length = (Radius of media \* 1.5) width = Radius of support) (Rectangle appears).

12 Mode Arabic

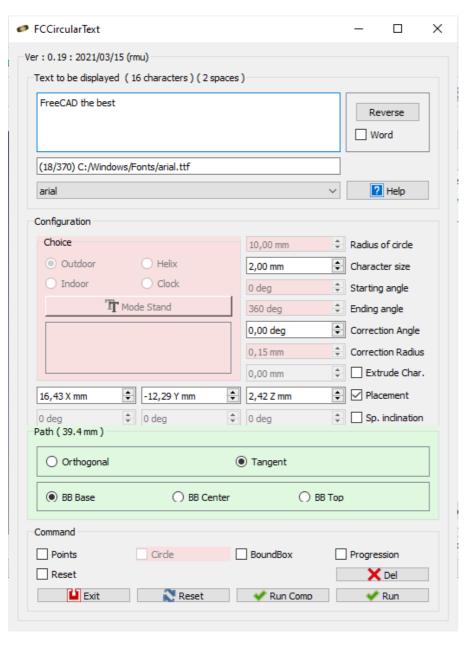
<sup>12</sup>를 Axial

- 3 = A triangle is created (circumscribed) (Triangle appears).
- 4 = A square is created (Radius of support) (Square appears).
- 5 = A polygon with the number of faces displayed (circumscribed) (Polygon appears).
- Extrude support is activated and an extrusion dimension can be given.



- If Support number face is equal to zero there is no support.
- Mode Roman: The writing will be in Roman figures I II III IIII V VI VII VIII IX X XI XII
- Axial : The figures will be written axially.

#### Path section



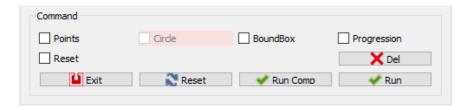
The title section change and display the length of the wire selected.

If you select one wire, arc, circle, line and edge the section Path is coloured in green and the unused command coloured in red

- 1. Orthogonal the character is Orthogonal to the view
- 2. Tangent the character is Tangent to point path on wire
- 1. O BB Base the point base of the character is to point path on the wire
- 2. O BB Center the bounBox center of the character is to point path on the wire
- 3. BB Top the top boundBox of the character is to point path on the wire

the last Radio Button used is saved in the parameter of FreeCAD

## **Command section**



- Exit : Leaves the macro.
- Reset : Reset all values and displays the number of characters displayed in the window.
- Run Comp : Launches the macro and creates a Compount object of all characters.
- Run : Launches the macro

#### Parameters available

Certain parameter are available in the parameters of FreeCAD see: **Menu**  $\rightarrow$  **Tools**  $\rightarrow$  **Edit parameters...** 

- User parameter: BaseApp/Preferences/Macros/FCMmacros/FCCircularText
- switchModeTextList:
  - false normal text mode (and black) turns off switchFontComBox
  - true allow switchFontComBox 1 (default)
  - switchFontComBox:
    - false (and switchModeTextList = 1) text mode (in color) in Faster ComboBox list (default)
    - true (and switchModeTextList = 1) font Family in ComboBox list slower but more beautiful!
  - setSystemFonts:
    - false matplotlib.font\_manager.findSystemFonts ("C: /", "ttf") do all fonts (in all folders and subfolders of the HD) time !!
    - true fontman.findSystemFonts (self.pathFont)
       make all the fonts in the directory (and in all the subfolders) (default)

- seTtextAlignement: 0 = AlignLeft (default) 1 = AlignCenter 2 = AlignRight
- setFontByDefault : Font by Default (the last used)
- switchResetFALSE: false reset (default), true no reset (not recommended) some switches can stay open or close unexpectedly!
- setPathOrthogonal: true false
- setPathTangent: true false
- setPositionBase: true false
- setPositionCenter:true false
- setPositionTop: true false
- switchVersionSearch: true false
- Version : FCCircularText version

Launch the macro folder **FcString** for created characters and a file **FcClock** for created clocks.

# **Script**

The button icon:

- in .PNG



- in .SVG



(See Customize\_Toolbars for more)

### **Script**

## Macro\_Circular\_Text.FCMacro

or download the script:

- on github Macro\_FCCircularText.FCMacro (https://gist.github.com/mario52a/a25e802498bae6959 335) ver 0.21 2022/05/31

- at the forum Extrude from curved surface of cylinder (http://forum.freecadweb.org/viewtopic.php?f =3&t=7384&p=87642#p87642)

# **Example**



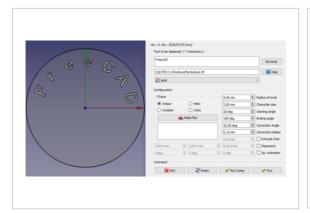


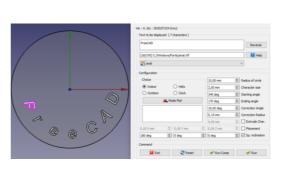
Text beginning at 180 degrees Text set in an inner curve. (**Begin angle**) end at 360 degrees (**End angle**) external curve.



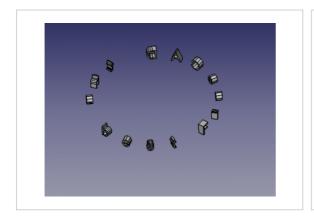


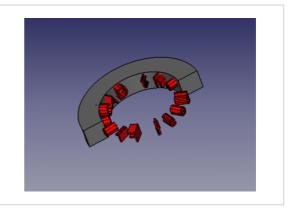
Text circular on internal and external Circular text on a flat onbjet. curve.





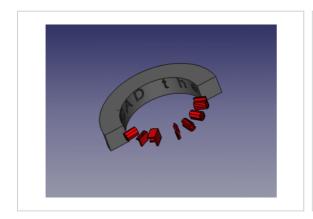
Configuration Superior.(click to Configuration Inferior.(click to elarge) elarge)

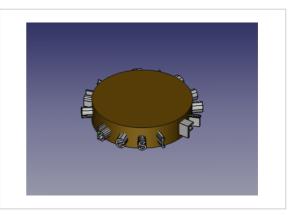




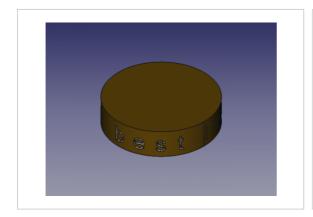
External curve.

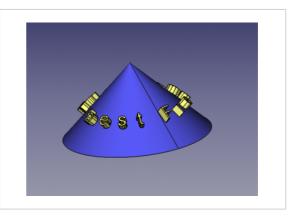
Internal curve.





Internal curve extrusion material External curve. designated and subtraction.

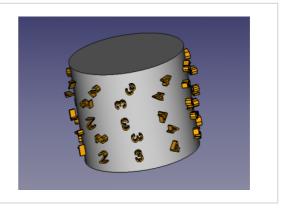




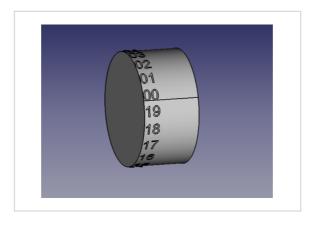
Internal curve with subtraction.

Extrusion on a cone with Sp. Inclination 45° axis Z.



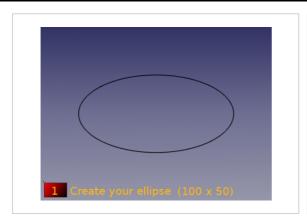


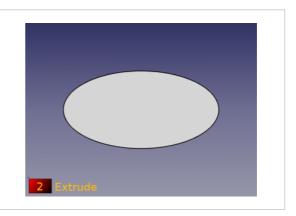
Ring Internal curve with subtraction. Pivot character 0°, 90°, ....



☑ Word The text is cutting on space character

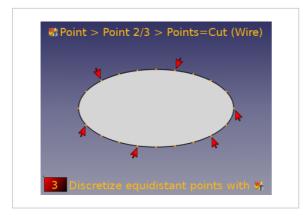
# **Example onto Ellipse**

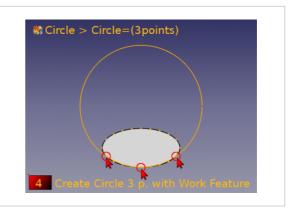




Create your ellipse hers 100x50.

Exrtude it 50 mm.

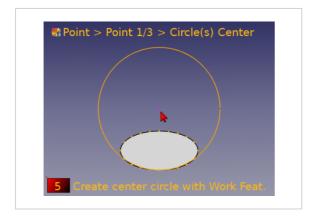


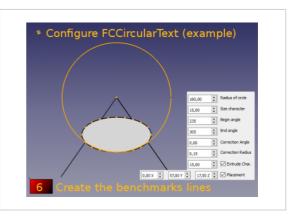


Discretize the perimeter and create Create the circle to 3 points with the points with the macro Features.

Tab Point > Point 2/3 > Points=Cut (Wire)

Work macro Work Features. Tab Circle Circle=(3 Points)

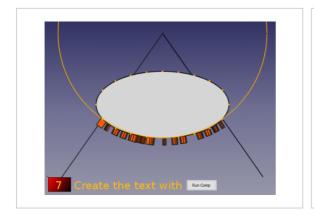




Create point center circle with the Create the benchmark lines and macro Work Features.

Tab Point > Point 1/3 > Circle(s) center.

configure FCCircularText.





Create the text with Run Comp.

Select Ellipse Extrude, Shape and press the Part Cut button.

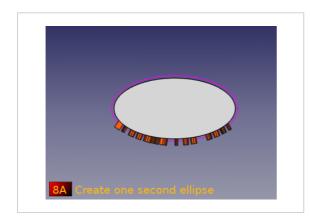


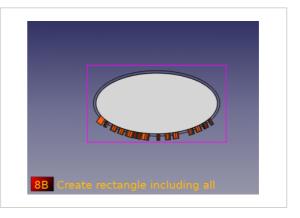


Delete the circle, points and lines.

Ellipses.

## Mode relief:

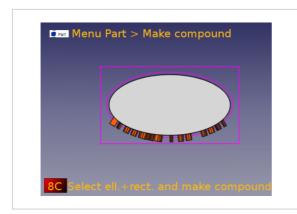


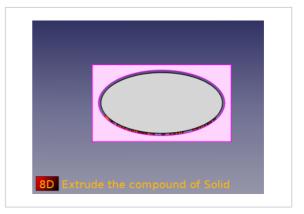


Create an ellipse.

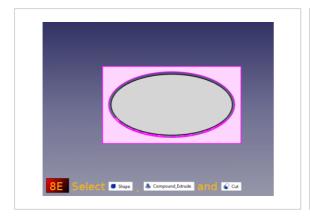


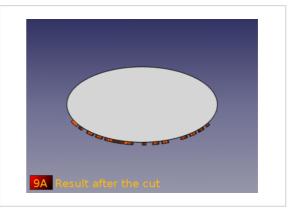
Create a rectangle include all object.





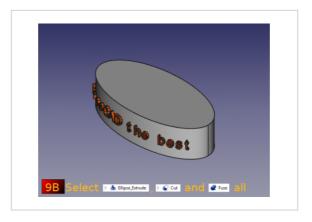
Select the rectangle, the ellipse and Extrude the compound of Solid. make compound Activate the Part module, then Menu Part > Make compound.





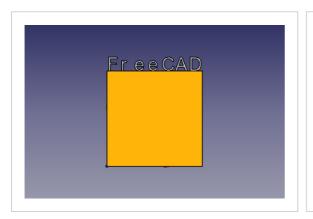
Select Shape (text) , the compound The text is cut in the shape of the and Cut.

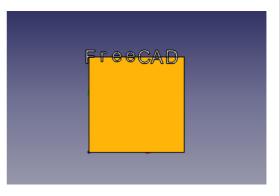
ellipse.



Select the Ellipse extruded, the Cut (text) and fuse.

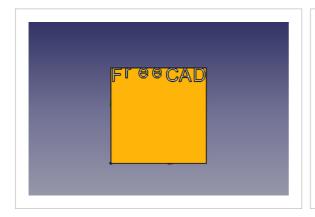
# **Example section path**

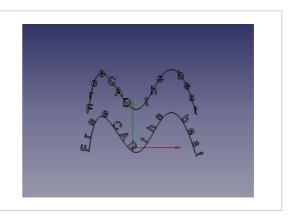




Text on BoundBox Base (normal)

Text on BoundBox Center character





Text on BoundBox Top character

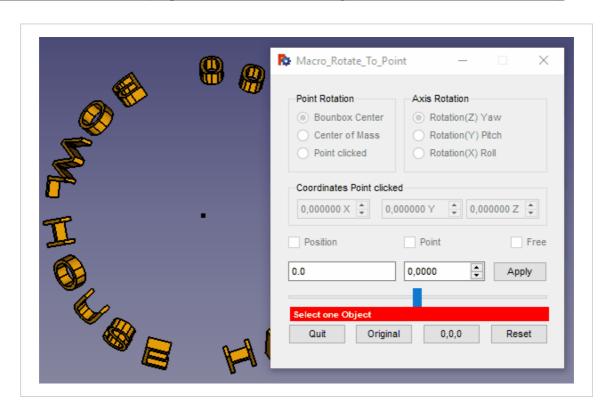
Text on selected line:

- 1: Orthogonal
- 2: Tangent

## Limitations

*Note* it is possible that an error may occur between versions. Please post the issue on the forum and wait for the updated fix or rollback to a previous version of the macro. Thank you)

It is possible that two characters may overlap. If this happens, here's a workaround is available using the Rotate-To-Point Macro (https://www.freecadweb.org/wiki/Macro\_Rotate\_To\_Point).



Character overlap issue and the workaround

(not fully developed)

Planned:

Writing on a path circular text of position object selected.

# **Change log**

- ver 0.22 2022/06/06: adding QScrollArea cause: <u>Unable to run FCCircularText</u>
   [Problem with screen size] (https://forum.freecadweb.org/viewtopic.php?f=3&t=69206)
- ver 0.21 2022/05/31 : adding button search other path fontmanuelly, and button return font origin of system
- ver 0.20 2021/04/05: adding icone in macro, Tab for diminish the heigth of the macro, remove all dimensions of widgets now fully compatible with the stylesheet, revisite the search version for compatibility and other little change.

- ver 1.19 2021/03/15: adding button Delette the last object created and the code
   FreeCAD.ActiveDocument.openTransaction("FCCTc") for Undo/Redo system
- Adding CheckBox Reset for switched/activated (requested by users) the natural reset after all push button Run and Run comp. This use checkBox is not advised, is you constade one malfunction pusch the Reset button or quit FCCircularText and restart.
- ver 0.18 2021/01/19: correction bug see FCCircularText Macro issues (https://forum.fre ecadweb.org/viewtopic.php?f=22&t=54524&p=468687#p468687)
- ver 0.17b 2020/09/28: correction little bug (pl instead plm in path section) and arrange the window (dimension) Clock, Helix, Path
- ver 0.17 2020/09/26 : adding create circular text on wire (curve, arc, spline, line ...)
   selected, mode word

ver 16d 2020/09/15 : see the MasterCATZ commented Sep 14, 2020 message (https://gist.github.com/mario52a/a25e802498bae6959335)

delette the FC 0.18 test section:

- ver 0.16c 2020/07/24: modify text proposed by Kunda1 Please review FCVerticalText Macro (https://forum.freecadweb.org/viewtopic.php?f=22&t=48902#p418776)
- ver 0.16b 2020/07/24 : correct \_\_title\_\_ to \_\_Title\_\_ in 0.18 FC test (see <u>Please review</u> FCVerticalText Macro (https://forum.freecadweb.org/viewtopic.php?f=22&t=48902))
- ver 0.16 2020/06/07 : little bug in Linux with the path, impost PolicePath = "/usr/share/fonts/" (stay on path /xx/xx/xx/xx/xx/xx/ on entry)
- ver 0.15 2020/06/01 : For PySide2 Qt5 adding matplotlib fonts in comboView, config on parameter
- ver 0.14-4 2020/04/25 : corrected for "DisplayMode = u"Flat Lines" :
- ver 0.14-3 2020/04/25 : adapted for :

```
OS: Windows 10 (10.0)
Word size of OS: 64-bit
Word size of FreeCAD: 64-bit
Version: 0.19.20655 (Git)
Build type: Release
Branch: master
Hash: e8e67e8c5ebbc9f9ed9ea67aba5b891969595ece
Python version: 3.6.8
Qt version: 5.12.1
Coin version: 4.0.0a
OCC version: 7.3.0
```

 ver 0.14-2 2019/07/22 replace chr(176) (give error <FC 0.18) and replace with the wmayer code, see Fehler in Version 0.19 pre ?? (https://forum.freecadweb.org/viewtopi

## c.php?f=13&t=36380&p=308476#p308357)

```
carDegrees = b' \xc2\xb0'.decode("utf-8") #thanks wmayer https://forum.freecadweb.org/viewtopic.php?

f=13&t=36380&p=308476#p308357

self.DS_InclinaisonX.setSuffix(carDegrees)
self.DS_InclinaisonY.setSuffix(carDegrees)
self.DS_InclinaisonZ.setSuffix(carDegrees)
```

- ver 0.14-1 2019/06/11 replace "°" to chr(176)
- ver 0.14 2019/04/27 compatible for Python 3.6.6 and Qt 5.6.2 (cause: unicode())

```
latest testing:

#0S: Windows 10

#Word size of OS: 64-bit

#Word size of FreeCAD: 64-bit

#Version: 0.19.16523 (Git)

#Build type: Release

#Branch: master

#Hash: 9b3ec233c8b2le0df66fada487cd10f471d60cac

#Python version: 3.6.6

#Ot version: 5.6.2

#Coin version: 7.3.0
```

- ver 0.13 30/01/2018 add feature Pivot for rotate the character on himself
- ver 0.13 09/08/2016 replace the button "New font" to "fontComboBox" cause, with Windows 10 the window Font stay empty the files are hidden
- ver 0.12 03/07/2016 optimize the code for accept the decimal number in determination angle

## replace the line

```
for angleTr in range(debut,rotation,((rotation-debut)/nombre)):
```

to

ver 0.10 17/05/2015 adding lines 1365, 1366 only created more clock face ?? ()

```
supp.MakeFace = True
   App.activeDocument().recompute()
```

ver 0.9 11/05/2015 thank you NormandC for testing

## replace

```
self.DS_InclinaisonX.setSuffix(" X°")
self.DS_InclinaisonY.setSuffix(" Y°")
self.DS_InclinaisonZ.setSuffix(" Z°")
```

to

```
self.DS_InclinaisonX.setSuffix(unicode(" X°"))
    self.DS_InclinaisonY.setSuffix(unicode(" Y°"))
    self.DS_InclinaisonZ.setSuffix(unicode(" Z°"))
```

 ver 0.8 10/05/2015 replace "String=texte[ii2]" to "String=unicode(texte[ii2])" line 1290. cause "TypeError: Property 'FontFile': type must be str or unicode, not QString"

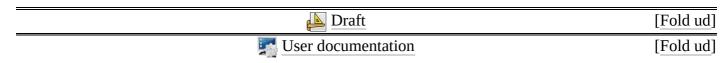
```
# ver 0.8 \ 10/05/2015 /_ # testing with 0S :
# 0S: Ubuntu 14.04.1 LTS
                                        # 0S: Ubuntu 14.04.2 LTS
# Platform: 32-bit
                                        # Word size of OS: 32-bit
# Version: 0.14.2935 (Git)
                                        # Word size of FreeCAD: 32-bit
# Branch: master
                                        # Version: 0.16.4928 (Git)
# Hash: eab159b6ee675012bf79de838c206a311e911d85 # Branch: master
                                        # Hash: d8f63bcfd10301f3d1e141cced4370f0782238d0
# Python version: 2.7.6
                                        # Pvthon version: 2.7.6
# Ot version: 4.8.6
# Coin version: 4.0.0a
                                       # Ot version: 4.8.6
# SoQt version: 1.6.0a
                                        # Coin version: 4.0.0a
# OCC version: 6.7.0
                                        # OCC version: 6.8.0.oce-0.17
# OS: Windows Vista
                                        # OS: Windows Vista
# Word size of OS: 32-bit
                                        # Word size of OS: 32-bit
# Word size of FreeCAD: 32-bit
                                        # Word size of FreeCAD: 32-bit
# Version: 0.15.4527 (Git)
                                       # Version: 0.15.4671 (Git)
# Branch: master
                                        # Branch: releases/FreeCAD-0-15
# Hash: 0da2e4c45a9a259c26abd54c2a35393e1c15696f # Hash: 244b3aef360841646cbfe80a1b225c8b39c8380c
                                       # Pvthon version: 2.7.8
# Pvthon version: 2.7.8
# Qt version: 4.8.6
                                        # Qt version: 4.8.6
# Coin version: 4.0.0a
                                        # Coin version: 4.0.0a
# OCC version: 6.7.1
                                        # OCC version: 6.8.0.oce-0.17
```

- ver 0.7 02/02/2015 suppression 2 str
   App.Console.PrintMessage(str(PolicePath)+"\n") to
   App.Console.PrintMessage((PolicePath)+"\n") that caused an error with the characters above 128 in the police path.
- ver 0.6 23/11/2014 corrected "texte = unicode(self.textEdit.toPlainText())" now accept "'éèà@..."
- ver 0.5 19/11/2014 Gui
- ver 0.4 10/10/2014 add variable "rotation" in the loop (for i in range(0,rotation, (rotation/nombre)): # 360 a parametrer)
- ver 0.4 27/08/2014 correction error of de radius (exterieur=0, debout=1)
- ver 0.3 26/08/2014 add creation text of flat curve
- ver 0.2 26/08/2014 add creation text of internal curve
- ver 0.1

(2537)

#### Links

To comment on the Extrude from curved surface of cylinder (http://forum.freecadweb.org/viewtopic.php?f=3&t=7384)



Hentet fra "http://wiki.freecad.org/index.php?title=Macro\_FCCircularText&oldid=1148923"

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