

PomPi[®]

Pompous Piping

Release candidate version

© Dezmo 2016

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First thing first

This plugin was created and only tested in Windows environment and may not function on a MAC. Any feedback of MAC users is welcome!

Tested: SKETCHUP 2014 on Windows 7, SKETCHUP 2015&2016 on Windows 10. I'm using millimeter unit, I don't care the others... (but since inch is native SketchUp unit, it is implemented and it should work).

This plugin is using some bits from others. If you want to (and can), please check it in the program code files, and give thanks / credits / donation to them!

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THIS SOFTWARE IS PROVIDED "AS IS" AND WITHOUT ANY WARRANTIES. I am not responsible for any damages caused. Use it on your risk.

However, if you like, feel free to buy me a cup of coffee ...

The plugin is in [Release Candidate] stage (as well as this document) meaning it is almost ready, but please don't ask for any deadline to fully finalize...

Finally, I would like to ask you please do not disturb me with your e-mails. Please go to sketchUcation plugins forum (<http://sketchucation.com/forums/viewtopic.php?f=323&t=65233>)

Main features

- Two-tree clicks to create and orient simple pipe, bend, reducer, flange, union or T.
- Convert all selected edges to bends and pipes.
 - Similar to Pipe Along Path, but “fillet” the connection points by elbow
Not limited to one path.
 - To align connected end segments, pipe elements will be twisted automatically
- Easy to predefine and load your own dimension's library (CSV file)
- You can create your standards (ANSI, ASME, ISO EN, JIS...or) whatever you want and determine the dimensions of pipe and fittings with only a click.
- Handle millimeter and inch
- Similar pipe elements will be same existing component but other instance.
- Easy to define cross section (profile) as circle, triangle, square, pentagon, hexagon (up to 96 side polygon or circle). You can rotate it too.
- Simple, self-explaining user interface.
- Free!

Install & uninstall

Install the provided *Dezmo_pompi2016_xxxx_xxxx.rbz* file as usual. (The method is not subject of this document.)

Menu: SketchUp Main Menu>> Extension (or Plugin)>> PomPi © by Dezmo



Toolbar enabling: SketchUp Main Menu>> View>> Toolbars>> PomPi 2016.

For uninstalling follow your usual method too. However, if you want to completely clean up you have to delete the following registry keys:

[HKEY_CURRENT_USER\SOFTWARE\SketchUp\SketchUp 2015\WebDialog_PomPi_Warning]

[HKEY_CURRENT_USER\SOFTWARE\SketchUp\SketchUp 2015\WebDialog_Dezmo_PomPi_2016_0_v]

[HKEY_CURRENT_USER\SOFTWARE\SketchUp\SketchUp 2015\Pompi_2016b0_dialog_data]

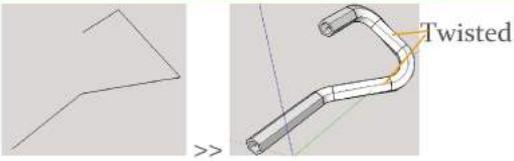
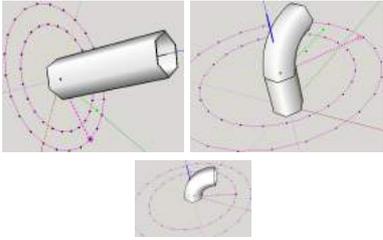
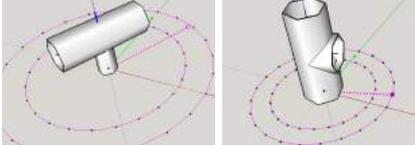
Only in beta versions: [HKEY_CURRENT_USER\SOFTWARE\SketchUp\SketchUp 2015\WebDialog_Dezmo_PomPi_2016_0]

Substitute "SketchUp 2015" with your current version of SketchUp.

Functions

You can create infinite variety of simplified pipe elements as component like:

HTML dialog buttons:

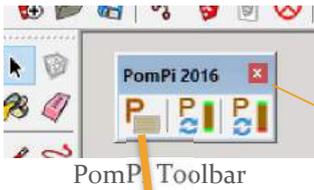
Symbol	Description	Example
	Convert selected edges (lines) to pipes and bends. Some pipe elements will be twisted to align both end segments. (Please check page 8 for note!)	
	Create single Pipe (like native line tool)	
	Create Pipe + Bend (90°) together (for length note the two red bullets for length)	
	Create single Bend (or elbow or curved pipe)	
	Create single Equal T, Reduced Equal T	
	Create single Short T, Reduced Short T	
	Create single Reducer concentric	
	Create single Reducer eccentric	
	Create single Union (stainless steel coupling for food/milk industry)	
	Create single Flange	
	Create single "fake" union (aka a cylinder with a bigger cylinder in the middle)	
	Create single "fake" flange (aka disk)	

Data/dimensions are predefined by CSV file or manually entered via HTML UI.

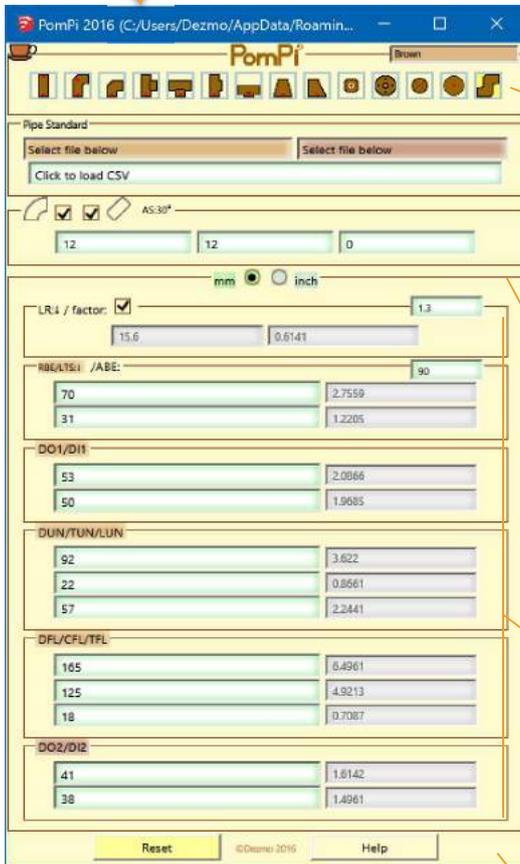
Toolbar buttons (Modifier tools):

	Z-axis Rotate single PomPi component	However, it is designed for rotate PomPi elements, eventually you can use it for any single component or group.
	Z-axis Twist PomPi pipe	It is works only on PomPi pipe component, to twist/align the pipe segment to adjacent pipe. Twisting angle is limited to $\pm AS/2$.

User interface

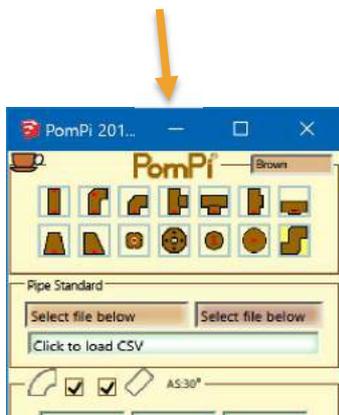


You may have to resize and move the HTML UI window during first use to fit your work environment...
 Hover over your mouse to get self-explanations of different UI elements.



User Interface
 You can resize it for your taste

- **Toolbar buttons**
 The Modifier tools are alive if single component is selected (for rotate), or if PomPi pipe selected (for twist)
- **HTML dialog toolbar buttons & UI style**
 Click the one of the button to get the function
 Click on Coffee cup to send donation
 Hover over PomPi to stop animation
- **CSV file and dimension selection**
 Last used file will load next time
- **Segments behavior**
 Element values in this frame are stored and will load next time.
- **Dimension selection**
 It is automatically selected if the CSV file loaded and CSV file is according to requirement's, see below...
- **Dimensions manual entering fields**
 You can manually override the dimensions
 If you select dimension from above 'Dimension selection' this will be overwritten.
 There are some automatic corrections on input fields, e.g. comma replaced by period, bigger inside diameter will be corrected to 'o'....
- **Reset / Copyright (version) / Help (open this manual)**



Always look for VCB for useful information's:



User input handling, input limitations

I wanted to give as much freedom as possible to type what you want to the different fields and create lots of variety of elements. But of course the obvious mistakes have to be eliminated to avoid most of the crashes and SU BugSpatch...

So still, please be carefully what you are typing in! If you type creasy numbers, you can expect creasy result... Very small dimensions (<1-2mm) will most probably be causing crash or will give unexpected result!

The following compromise rules will apply.

The wrong input will be replaced immediately or when you hover your mouse on the relevant toolbar item. When you hover your mouse on the actually used HTML toolbar item and the values are “technically” good (or at least in most case will not cause crash) those will be highlighted by green (or yellow) border. The wrong fields are mostly highlighted by yellow or red border. If there are red borders, the operation will be blocked.

- The decimal point is automatically replaced: "," -> "."
- The letters (not numbers) replaced by default values (or zero)
- If outside diameter is bigger than inside diameter the outside diameter will be replaced by zero. (Only the outer mesh will be drawn)
- Bend radius should be smaller than outside diameter/1.95 ($DO_1 < 1.95 * RBE$)
- Sort T length must be at least $1.05 * DO_1 / 2$. (Automatically replaced)
-
- Please discover yourself the other rules... ;-)

Segment behavior fields, the reducer factor, the last loaded CSV file and the last selected style stored in the registry and will be “remembered and loaded” next time when you are opening PomPi UI.

PomPi component names

Component names (Definition Names) are determined by dimensions and other properties from UI or measured length/angle.

The Component Definition Description will be: “PomPi” + ‘current date & time’ (Creation time)

If there is same definition name of component already exist PomPi will place an instance of it.

You can see the preliminary name of component(s) when you hover your mouse on HTML toolbar.

CSV file rules

The CSV file is comma (,) separated file contains the pipe element dimensions. The decimal point is period (.).

```

DIN_11865_Box_1, DO1, DI1, LTS, RBE, DUN, TUN, LUN, DFL, CFL, TFL
OD1, 25.4, 22.2, 15, 37, 63, 21, 45, 95, 65, 14
OD1.5, 38.1, 34.9, 22, 52, 78, 21, 53, 150, 110, 16
OD2, 50.8, 47.6, 30, 75, 92, 22, 57, 165, 125, 18
OD2.5, 63.5, 60.3, 37, 90, 112, 22, 65, 185, 145, 18
OD3, 76.2, 73, 44, 95, 119, 25, 65, 185, 145, 18
OD4, 101.6, 97.6, 59, 153, 148, 31, 89, 220, 180, 20
    
```

Standard

Nominal diameter name for selection

Data (dimensions)

Names (dos not really matter, but commas should be there)

There are 3 example file in your install directory (default loaded 'mm_DIN_DN.csv'):

mm_DIN_DN.csv, mm_DIN_OD.csv, in_DIN_OD.csv

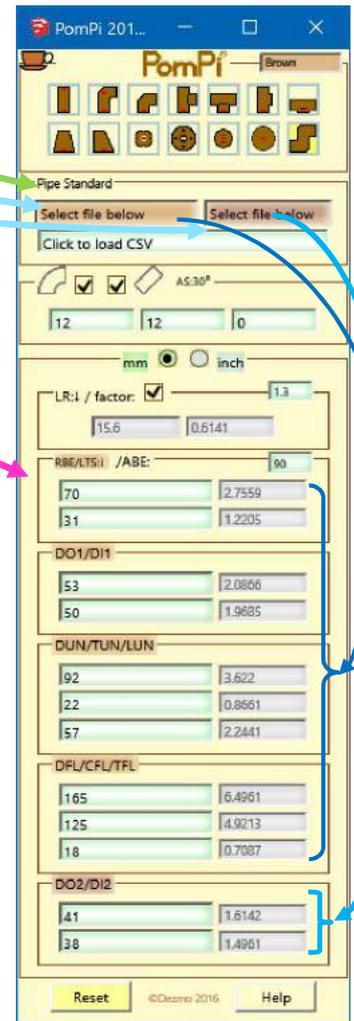
(usually in: c:\Users\your_user_name\AppData\Roaming\SketchUp\SketchUp 2015\SketchUp\Plugins\Dezmo_pompi2016\)

The file name must start with 'mm' or 'in', this will determine PomPi to select the right dimension during loading CSV file.

Note: If your file is containing dimensions in inch and you were selected mm for dimension than inch will be pushed to mm filed, please take that into consideration... There is a warning about it!

Since the main feature of this plugin to use the CSV file, the last used CSV file will be loaded next time when you open the UI, even you have been used Reset button to unload it. (if last used CSV has been deleted the default 'mm_DIN_DN.csv' will be used. If that one is also missing, you are in a trouble...)

BTW: The HTML windows name contains the actual PomPi installation directory location... it will help you to locate the example CSV files.



CSV rules

Note & Examples

I'm strongly advise to close your Component browser, Outliner and Ruby console if you want to convert lots of edges to pipes and bends!

You can try to play with the dimensions, angles and segment behaviors to get interesting results, however be careful...because in some combination of inputs you will get nothing or error.



To play with bend angle and segment or reducer diameters.... is also interesting. For example, although there is not much sense, but you can draw more than 360° angle bend. 😊

Known issues, to-do

- Fine tune UI (Ugly icons...)
- The faces disturb the Pompi_Auto_tool, currently erased... (I think this will not change.)
- User input & Error handling is not that bad, but maybe still can be improved...
- In some case (probably because of SketchUp precision, or because of my mistake...) e.g. the bend which should be same one get 15.99° and the other is 16.0°, so finally they are not same.
- Nearly similar for the twisting, in addition: if TWangle=AS/2 the ± determined “randomly” ...
- Pompi_Auto_tool need to be more deeply tested.
- Z-axis Twist may not function properly if you modified the pipe manually or with other tool.
- Test on MAC wanted!
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- Other small glitches (I'm just lazy or forget to write it down...)
- You know other?

Dimensions explained

