Learn to use (5) 3skeng compatible components (ver.2.1)

This document contains all scene texts of the SketchUp file in case you have problems to fit the text on your screen.

Scene "Explanation"

Important for MAC-users:

Clicking on and making changes in the 3skeng client give it focus!

So please click on the SketchUp window once you are done to give SketchUp back focus.

This will enable input of measurements with the keyboard.

Scene "3skeng compatible components"

How-to use this file:

Click on the next scene to start or use the PgUP and PgDN keys

to advance to the previous or next scene.

Follow the description step-by-step ("*" requires action from you) and feel free to align the predefined view to fit your screen resolution and preference.

When successfully finished, go to the next scene and repeat until the last scene. It may be helpful to click on this scene for reference.

In the end, your design should look similar as shown below.

Scene "1-Create Component"

1) Use SketchUp tools to draw the geometry of your component.

   We already prepared the simple outline of a future heat exchanger.

2) * Select the whole geometry the SketchUp way.

   Tip: Make a triple-click on a random surface to select all at once.

3) Right-click on the highlighted selection.

   You can select "Make Group" to create a group (not recommended).

   * Select "Make Component..." to create a component.

4) Name the component by filling out the "Definition" field.

   * Use the name "Manufacturer ABC - Model 123 (Heat Exchanger)"

Scene "2-Add references for start"

Now you have to add reference points for the future connections.

1) Enter the edit mode of the heat exchanger

   by double-click on the component

   or right-click on the component and selecting "edit component".

2) There are many ways to add reference points.

   In this example, please use the SketchUp "Offset" tool.

   * Use the "Offset" tool with a distance of "100mm".

Scene "3-Add 3skeng interfaces (1)"

Now you add the first 3skeng interface.

1) Enter the edit mode of the heat exchanger.

2) Click on the "Pipe Tool" in the 3skeng toolbar.

3) In 3skeng (client) window:

   * Make sure that the switch is on the side "Detail".

4) Select material and standard in "library" register:

   * "Plastic Piping" => "PVC-C Pipe (mm) PN16 (SDR 13.6), gray".

5) Hover over the front surface and click to select the start point:

   * top right reference corner of the offset rectangle

     (only the vertical axis (on face) is available).

6) Select type of pipeline segment:

   * Click "Generate straight pipelines".

7) Move along the line to select the diameter of the straight pipe

   * select "Pipe d40mm".

8) Move along the ruler to select the length of the pipe segment

   or enter the value with the keyboard:

   * select "75mm" with either method.

Scene "4-Add 3skeng interfaces (2)"

Now you complete the first 3skeng interface.

1) Enter the edit mode of the heat exchanger.

2) If not still active, click on the "Pipe Tool".

3) * Hover over the centerline at the end of the straight piece

   and click (you may need to zoom-in closer to the pipe).

   Make sure that the end of the pipe is highlighted,

   and not the Tee or connector symbol!

   Select type of pipeline segment:

   * Click "Select a pipe connector".

4) Select type of fitting in 3skeng (client) window:

   * "PVC-C Loose Flange Assembly (mm), gray".

5) For this size and type of connector, only one is available:

   * select "Loose Flange Assembly DN32-d40mm PVC-C PN16".

6) Now, using the SketchUp selection and move tools,

   select the pipe and flange and copy them to the other

   reference points.

Scene "5-Connect to heat exchanger"

Now you connect to the 3skeng interface(s) of the heat exchanger.

1) Leave the edit mode of the heat exchanger by

   clicking outside of the component boundaries

   or right-click on white-space while still inside of the

   component bounding box and pick "Close Component"

   or pressing the [ESC] key.

2) Click on the "Pipe Tool".

3) Hover over the end of the flange and click.

4) Select type of pipeline segment:

   * Click "Generate straight pipelines".

5) The Auto-Pipe mode now allows you:

   a) Change pipe type in "library" register (if available).

      The best matching pipe is always preselected:

      "PVC-C Pipe (mm) PN16 (SDR9-SDR 13.6), gray".

   b) Select the matching changeover element to pipe:

      Select (either the bottom left or right square)

      "Loose Flange Assembly DN32-d40mm PVC-C PN16".

   * Click after a) change (here not available) and

      b) selection of changeover element.

   * Select "100mm" for pipe length.

6) Select and copy the flange and pipe to the other three interface

   by using the "Connect tool" (in the 3skeng toolbar).

Scene "PIN outside visible"

Good-to-know:

(Free) connector PIN's (e.g. flange) added inside components/groups

(like in this file) are automatically set to "PIN outside visible"

and can be "seen" and used by 3skeng from the outside.

For all other 3skeng elements you have to manually set PIN's

to be visible from the outside.

The STARTING position of all 3skeng elements is defined as PIN 0.

To see the difference between PIN's of the same piece of pipe:

1) Click on the "Pipe Tool" in the 3skeng toolbar.

2) Hover over the ends of the pipe pieces (not their centerlines).

Top pipe: PIN 0 (gold-colored square) is set to "PIN outside visible"

Bottom pipe: PIN 1 (gold-colored square) is set to "PIN outside visible".

To set/change the setting of 3skeng element PIN's:

3) Enter the component (or group in other cases).

4) Left-click on a 3skeng element.

5) Go to "PIN outside visible" in the context menu.

6) Click the Pins to activate (highlighted green) and deactivate.

Feel free to change the settings of the sample pipe pieces

to see the difference.

Press "Space" to exit "PIN outside visible".

Press "Esc" to exit the component/group.

Scene "Selection with 3skeng compatible Components"

Element selection with 3skeng elements and 3skeng compatible components:

1) Right-click on the 3skeng Pipe element the arrow is pointing to.

2) Go to menue "3s Select" and click on "to next branch".

3skeng selects all elements up to the next tee.

3) Right-click on the 3skeng Pipe element the arrow is pointing to.

4) Go to menue "3s Select" and click on "all connected".

3skeng selects all elements up to the 3skeng compatible components.

5) Right-click on the component the arrow is pointing to.

6) Go to menue "3s Select" and click on "all connected".

3skeng selects all elements connected to the 3skeng compatible component.

7) Right-click on the component the arrow is pointing to.

8) Go to menue "3s Select" and click on "select all same Components".

9) Go to menue "3s Select" and click on "all connected".

3skeng selects all elements connected to the 3skeng compatible components.