

Customizable U-Hook

A Parametric 3D file
by Serge Payen, 2016





Customizable U-HOOK : How to use this file ?

Solution 1 : Open it with OpenScad software (it's free and open-source - <http://www.openscad.org/downloads.html>)

Allmost everything happen in the "editor" (left column).
Scroll it down to the "SETTINGS" chapter.

The screenshot shows the OpenScad software interface. The left pane is the 'Editeur' (Editor) showing a script with several parameters. The right pane is the 3D view showing a yellow U-hook model. The bottom pane is the 'Console' window showing the output of the compilation process.

Editor (Left Column):

```
// Choose to have a second hook ( 1 ) or not ( 0 )
second_hook= 1 ; // [ 1 , 0 ]

/* [MAIN HOOK SIZE] */

// Intern diameter of hook's main U shape
hook_size=40;

// Hook's "thickness"
thickness=25; // [10:250]

/* [SECOND HOOK] */

// Lenght of second hook
second_hook_lenght=30; // [15:185]
```

3D View (Right Column):

This is the viewing area, to see the object you are customizing. Use left click (orbite) and right click (pan) to navigate.

Console (Bottom):

! Important !
To see result after changing a value :
Press F5 key to compile
(It's like a preview)
When you're done, press F6 to render
(You need to render before to export).

This is the console window, giving back some informations.

Console output:

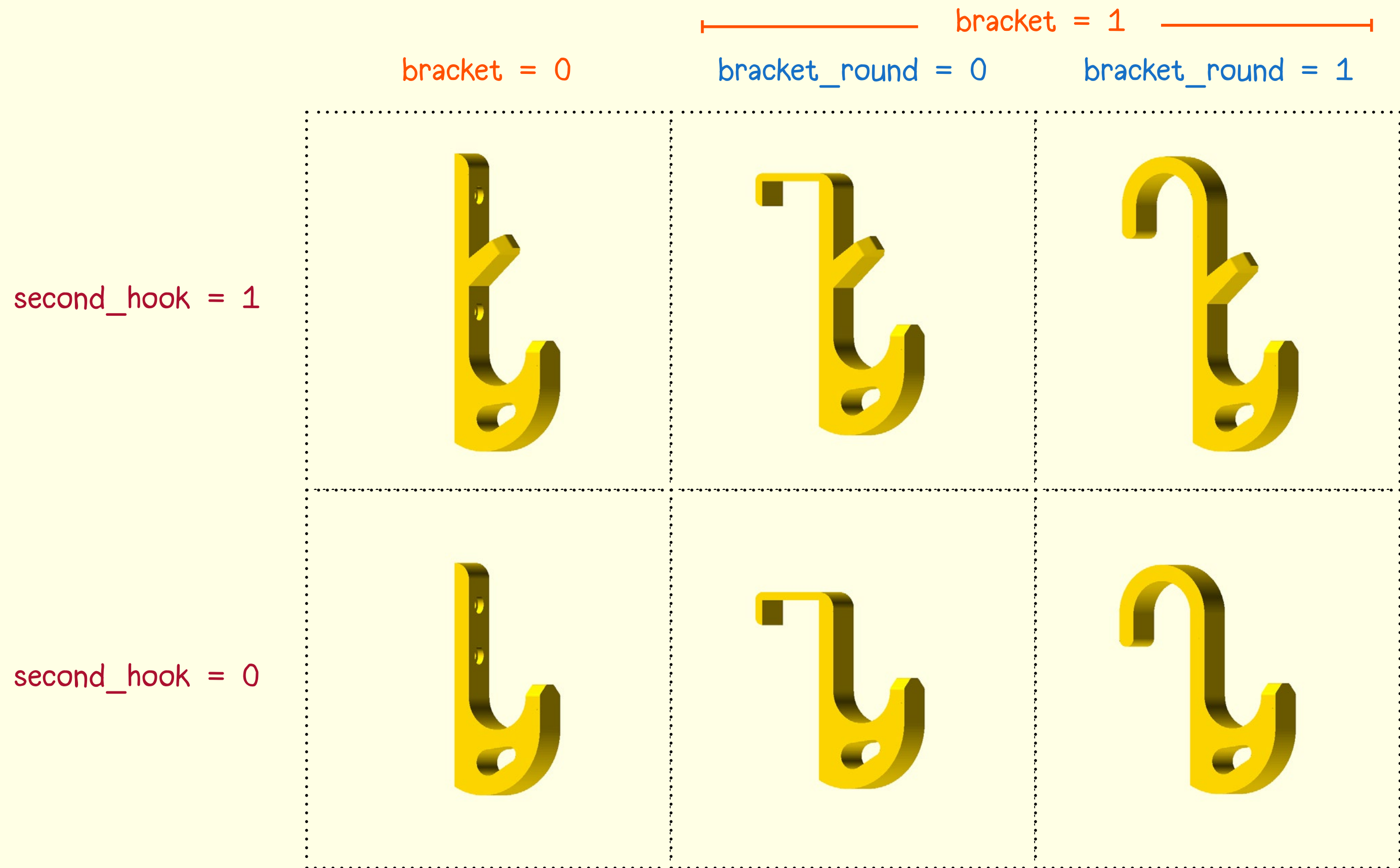
```
Compiling design (CSG Tree generation)...
ECHO: TOTAL_SIZE_ON_X_AXIS = 60
ECHO: TOTAL_SIZE_ON_Y_AXIS = 186
ECHO: TOTAL_SIZE_ON_Z_AXIS = 25
ECHO: MAIN_HOOK_INTERN_DIAMETER = 40
ECHO: SCREW_HOLES_DIAMETER = 4
ECHO: SCREW_HEAD_DIAMETER = 7
```

Finally, at your screen's top, go to File / Export / Export as STL => choose a filename and click "Export"
Then send this STL file to your 3D printer !

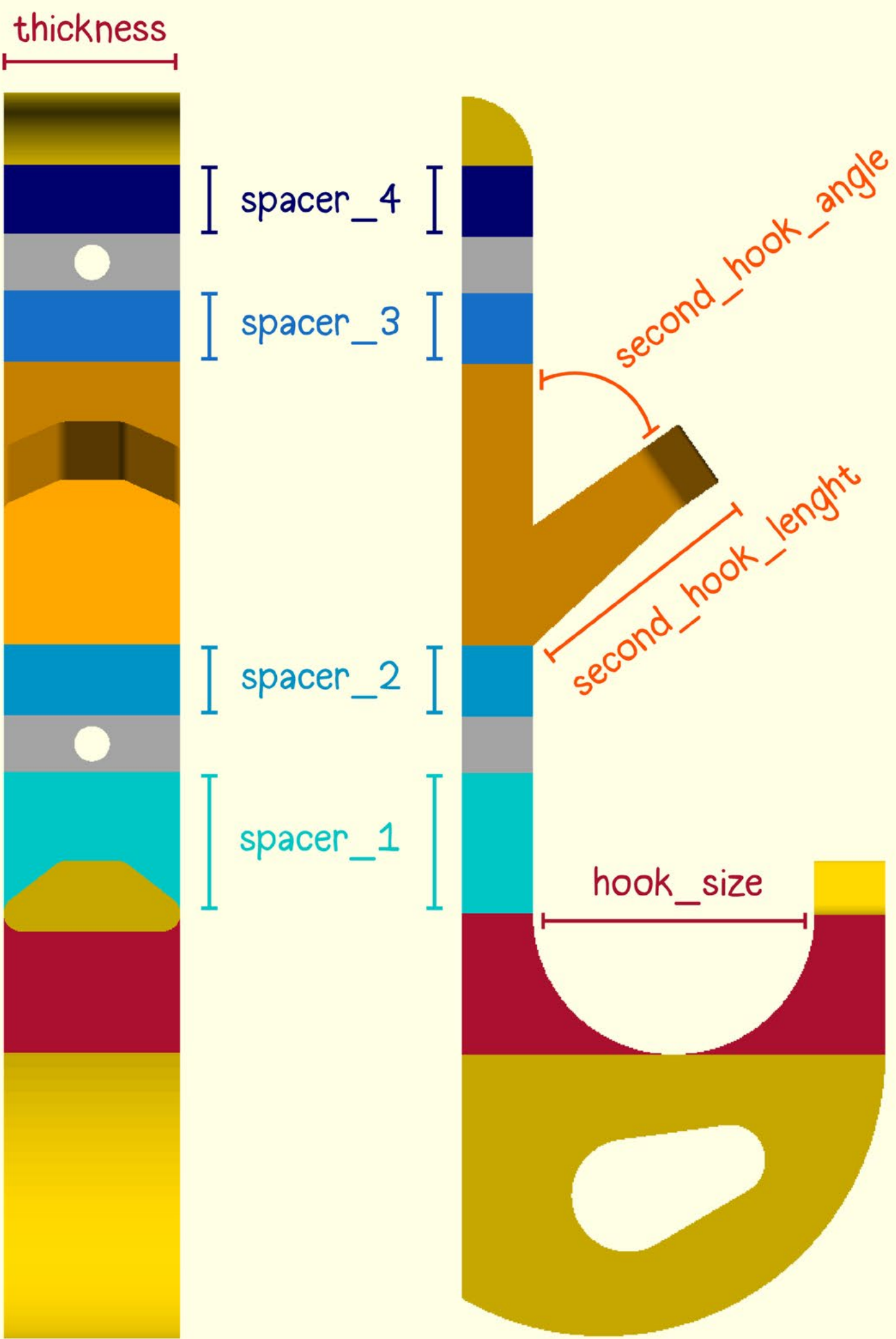
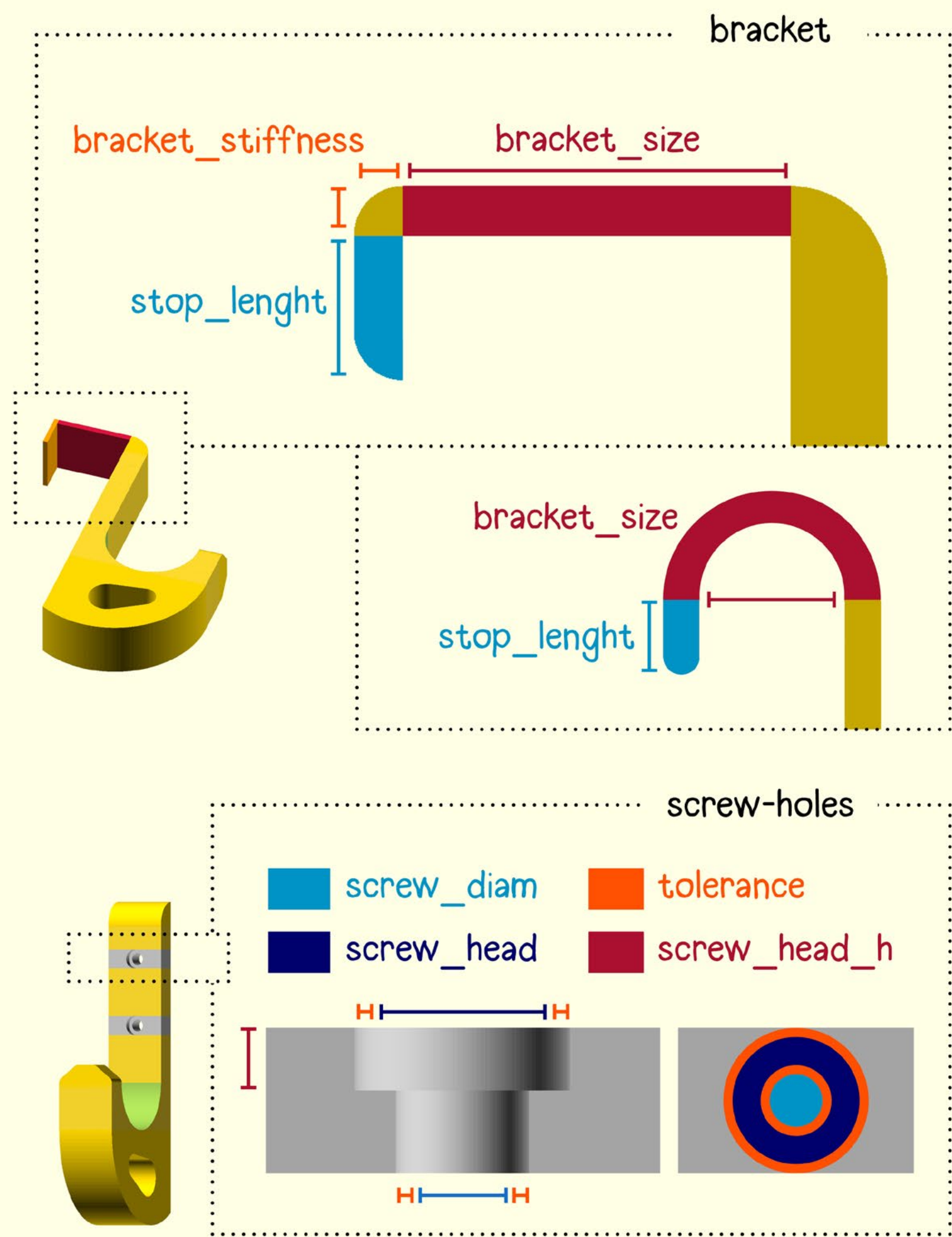
Solution 2 : If you're a Thingiverse user (and have a Thingiverse account), you can use the "Customizer".
Go to object's page and click on the fat button "Open in Customizer".

Customizable U-HOOK : Choose Shape

Choose global shape with parameters « bracket », « bracket_round » and « second_hook ».
Each can take the value « 1 » (same as “YES”) or « 0 » (same as “NO”).



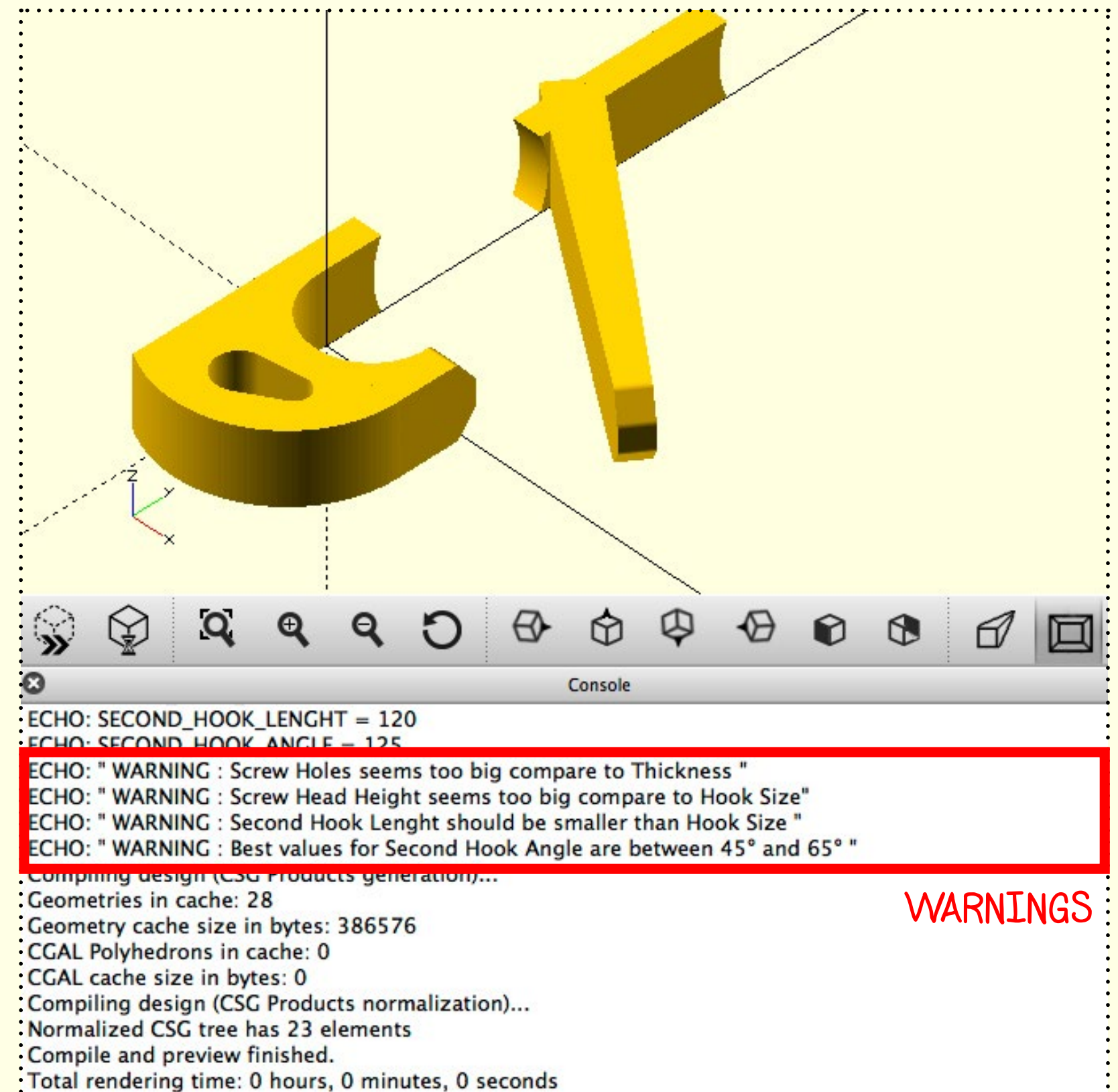
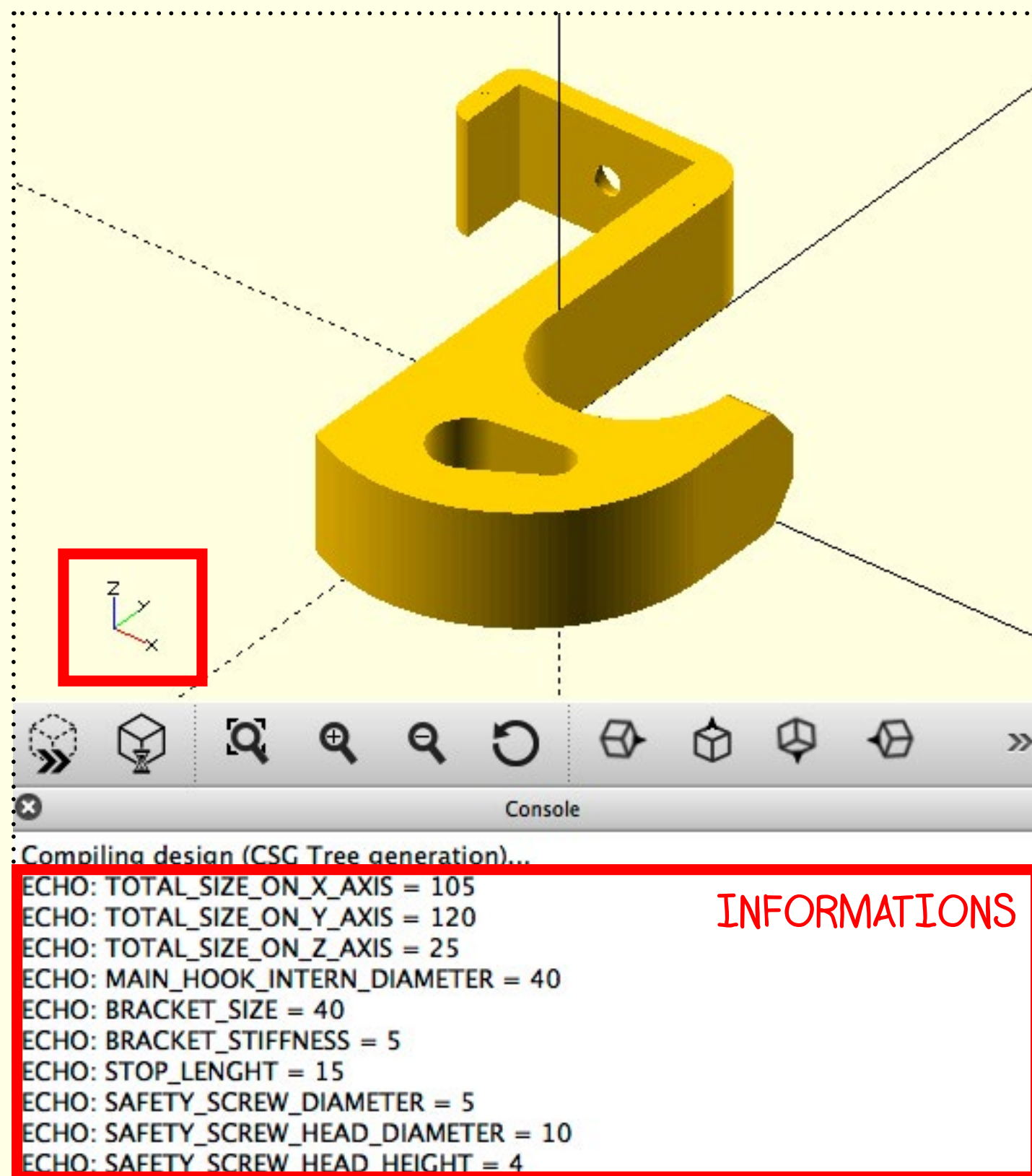
Customizable U-HOOK : Choose Size



Customizable U-HOOK : Console window, informations & warnings

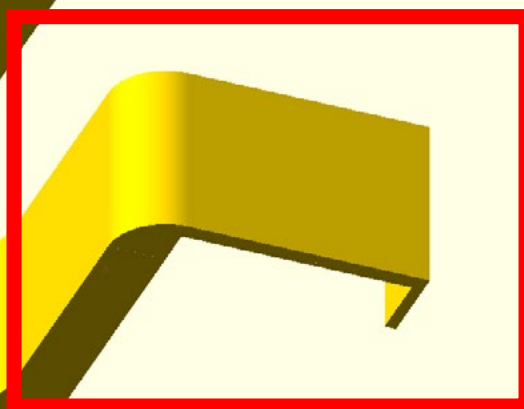
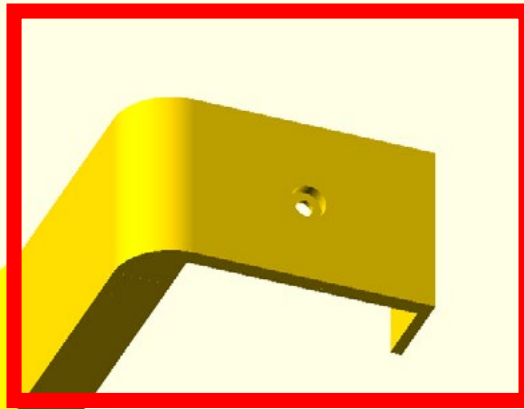
After each compilation (F5 Key), you will find many informations about global size and each element specific size inside the console window (text area below viewing area).

If some values are illogic, or could degrade hook's efficiency, there will be also warnings and advises about values you should adjust.



Customizable U-HOOK : Extra Settings

safety_screw = 1

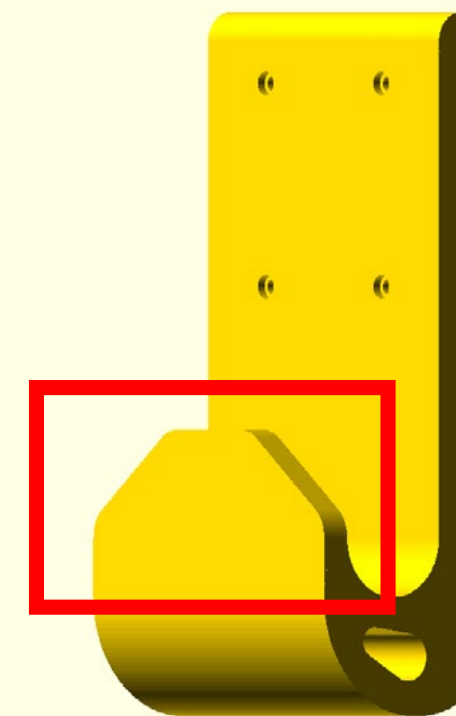


safety_screw = 0

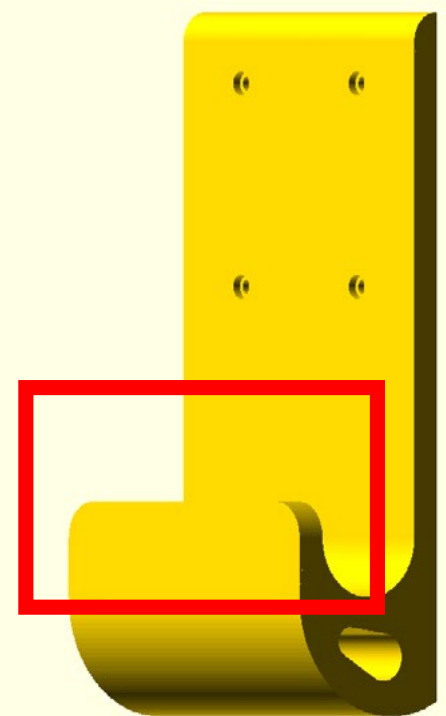
If you choosed the hook with rectangular “bracket”, it may be good to have a safety screw to lock hook into place.
If you need it, type “safety_screw=1” in “extra settings”.
It will use the screw parameters defined in “screw-holes” part.

If you input a big “thickness” value,
the file will generate 4 screw-holes,
so you can make a VERY fat hook.

To remove the triangle extremity,
input “extremity=0” in extra settings.

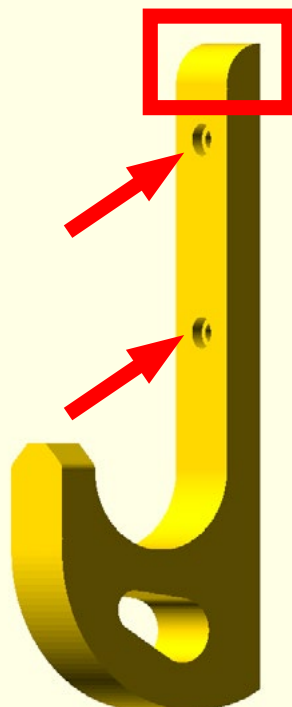


extremity = 1

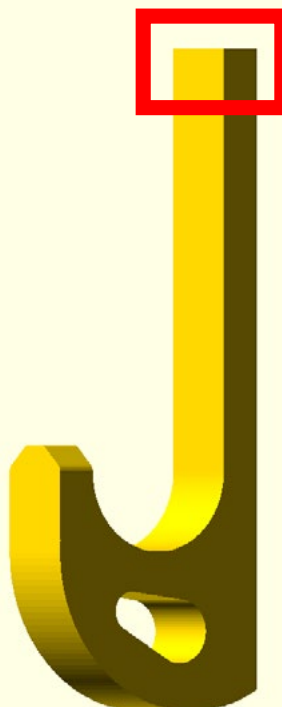


extremity = 0

screw_holes = 1
rounded_top = 1



screw_holes = 1
rounded_top = 0



But maybe you want to mash-up a hook with another 3D object.
For better integration you may need the hook’s shape with no screw-holes,
and maybe a flat top :
Input “screw_holes=0” and/or “rounded_top=0” in extra settings.