**What is osVAC / osVAC Neo ?**osVAC ist a universal connector system to connect for example electrical hand tools with a vacuum cleaner.

**History**osVAC was created by three students at "Hobbyhimmel". For details see:
 <https://ossso.de/osvac>

**Differences between osVAC and osVAC Neo**- osVAC only offers 32mm diameter for male and female adapters.
- osVAC does not provide Fusion360-based CAD-files.

- osVAC doesn't provide a additional seal ring

Is osVAC Neo compatible with existing osVAC adapters?

yes :-)

**Fusion 360 Installation**
Install Fusion 360.
Install the addin:
<https://apps.autodesk.com/FUSION/de/Detail/Index?id=2114937992453312456&appLang=en&os=Win64>
Documentation:
<https://parametrictext.readthedocs.io/en/stable/>
The addin automatically updates the printing of the adapters.

**Adapters and Connectors**A connector has two adapters and maybe a transition konus (e.g. from 32mm to 45mm).

**Open the files**Open the latest version of the file "osVACneoClientHoseAdapters vXX.f3z" and upload the contained files.

Choose "Upload", then select the file from your computer. This will import 4 designs to your account.

- osVACneoClientEmpty

- osVACneoClientHoseAdapters

- osVACneoClientPipesConesFlanges...

- osVAC neoMaster

**Basic settings**You can make one connector at a time.

First you need to decide, what the inner diameter of your male and female adapters should be. Hobbyhimmel only published 32mm. This is a good size for most vacuum cleaners. The most common hose is 32mm, too.

But for most electrical hand tools (sanders, etc.) adapters of 32mm are pretty big. Therefore I recommend to go to 25mm.

To choose these basic settings, open the file "*Maste osVAC neoMasterr*", go to *Modify / Change Parameters* and select *FemaleDiameterInner*. Set it to your value. Repeat for *MaleDiameterInner.*If you want to use a hose adapter, also choose the inner diameter of your hose by setting *HoseDiameterInner* to your value.

If you change a parameter, F360 needs a few seconds to calculate the changes. All adapters will automatically be changed to the new diameters.



Click OK to close window.

Note: After closing the parameter window, it will take some time for graphics to update the printing on the adapters. Be patient.

Note: when the Plugin parametrictext isn't installed this will produce errors as without Fusion360 isn't able to use a parameter/variable inside a text box, which is used for putting up the description on the adapters.

Save the file.

**Export STL-Data**

After setting the basic parameters inside the master template you can then choose what to print. If you want to print the female adapter for the hose with the slip ring go to the design "*osVACneoClientHoseAdapters*". If you see a yellow sign telling you that the source model is outdated refresh it accordingly. (this imports the changes from the master template to the current design)

Check which part you need and then right click on the component you would like to print. Export the mesh:



Choose stl binary as format (3mf is more modern, but somehow has some artefacts in it ???).

Safe the stl file to your disk and open your Slicer.

Note: If you have a hiqh quality printer, the supportStructure isn't needed. Just hide the "SupportStructure" inside the collection and export the stl afterwards.

**Slicer**

you can either use Prusa Slicer or Cura. Depending on your 3d printer nozzle you might want to choose a different gap size for the slip ring in the female hose adapter



Half the size of your nozzle is a good starting point. (e.g. 0.4 nozzle --> set the gap to 0.2mm)

**PrusaSlicer specific settings:**

- use the 0,2mm quality profile with a 0,4mm nozzle

- with PLA use 3 top and 3 bottom layers for more stabilty

PLA and PETG are both working fine.

**3D-Printing**

Print it in the direction it exports. The hose part is on the plate and above is the female adapter.



**Manual Work after Print**

Unfortunately a bit of rework needs to be done. To make the slip ring work inside the female adapter you need to cut the small supports the printer generates while printing. After cutting (max. 1mm) into the adapter use two pliers and rotate the upper and lower part against each other. It should work quite easy (after the cutting), maybe try with your hands first. If it doesnt work try to saw a small slit in the direction the slip ring is placed inside the adapter:



**How to add your own adapter**