



SHOPVAC (50mm) CAMLOCK CONNECTORS WITH MAGNETIC CATCH



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[VIEW IN BROWSER](#)

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Summary

A really simple, super quick-change vacuum connection system - use existing adaptors or design your own!

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Standard 50mm (2inch) vacuum cuffs tend to work loose in use on many tools and are rather bulky, so I was looking for a simple locking system that would be easily adapted to any tool, so that anyone with rudimentary cad skills could customise adaptors for their own tools, while using the standard CAMLOCK part.

Wierdly I've made an Adapter piece to suit my earlier [VACUUM ADAPTERS](#) which I've been happily using for some time and they work perfectly except that when using multiple tools it becomes a bit of a chore to remove them, unscrew from the hose, screw on the new fitting and go again.

I've printed all the examples here in PLA (Prusament Galaxy Silver or Orange) with a 0.4mm nozzle at 0.2mm QUALITY mode, but I've also printed a set in 0.3mm draft mode. Adding a few perimeters will probably add some robustness, but I haven't found that necessary thus far.

OTHER HOSE SIZES

I have made a series of adapters to fit other standard hose sizes for more information download an adapter [HERE](#) or see the link below.

THE CAMLOCK HOSE FITTING (Female Part)

The **HOSE FITTING** is obviously printed in two parts and requires a 30mm M3 machine screw (or 25mm if you can get it) to assemble. It is designed to screw onto most standard 50mm shopvac style hoses, and prints easily with no supports required. (See Magnet note below)

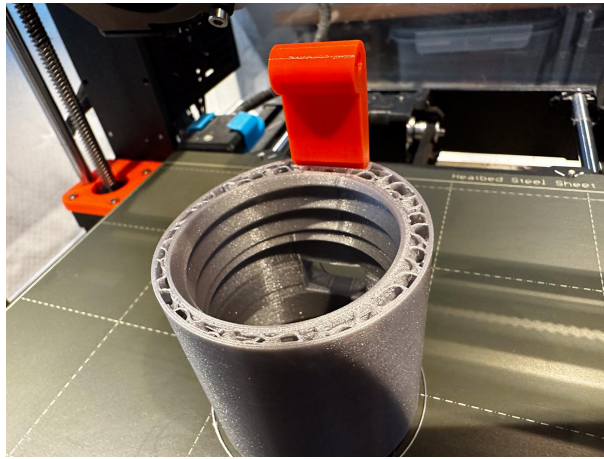
The CAM LEVER doesn't require support either. It has been designed with a 0.1mm tolerance to the adapter recess which doesn't sound like much but in practice means that in prolonged use combined with a vibrating machine it has the potential to undo itself. Inserting a couple of small (10mm x 2mm or 1.5mm) magnets into the parts will not only prevent that, but will provide a satisfying click to confirm all is in place.

Inserting the Magnets (this is harder to describe than it is to do!!)

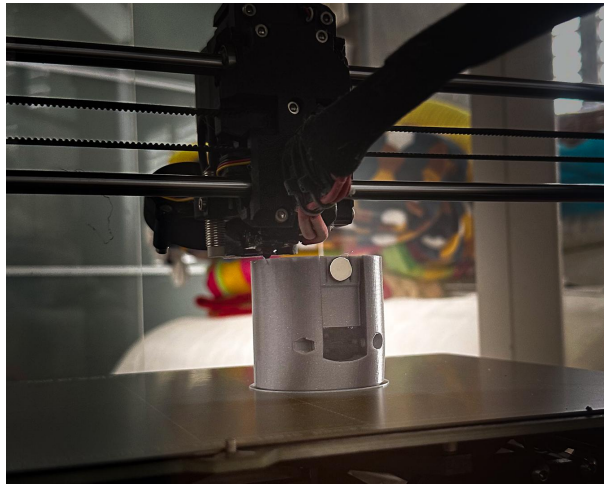
The magnets sit embedded in square pockets - open the .3mf files attached in Prusa Slicer if you need to work out where they are exactly or just adjust those print files to suit your machine and filament.



I've allowed for 10mmx2mm nominal magnets. I suggest that you print the CAM LEVER first so that you can easily check the orientation of the magnet when inserting it into the HOSE FITTING.



The pockets for the magnets are square and have one single perimeter wall to contain them. There is a chance in this configuration that they will jump out and attach themselves to the magnetic part of the extruder. To prevent that I simply hold them in place with a spare magnet located on the outside of the print.



If you mess up the placing of the magnets, never fear! Because they are embedded with a single wall thickness, it is easy to cut out the recess with a sharp knife and superglue them in place. I've been using the one in the picture for a few weeks and apart from not looking as pretty with the cam open, there's absolutely no difference in performance.



I **think** I have allowed enough room to print this model with a .6mm nozzle but if you are going to try that

THE ADAPTERS (Male Part) - DOWNLOAD OR MAKE YOUR OWN!

The adapters are designed to fit snugly into the camlock fitting. They are designed as a snug fit (0.1mm tolerance) so don't be afraid to “work” them in for the first time. Depending on how well your printer is tuned, it might be wise to print the test one in the same filament that you used for the HOSE FITTING to ensure tolerances are the same.

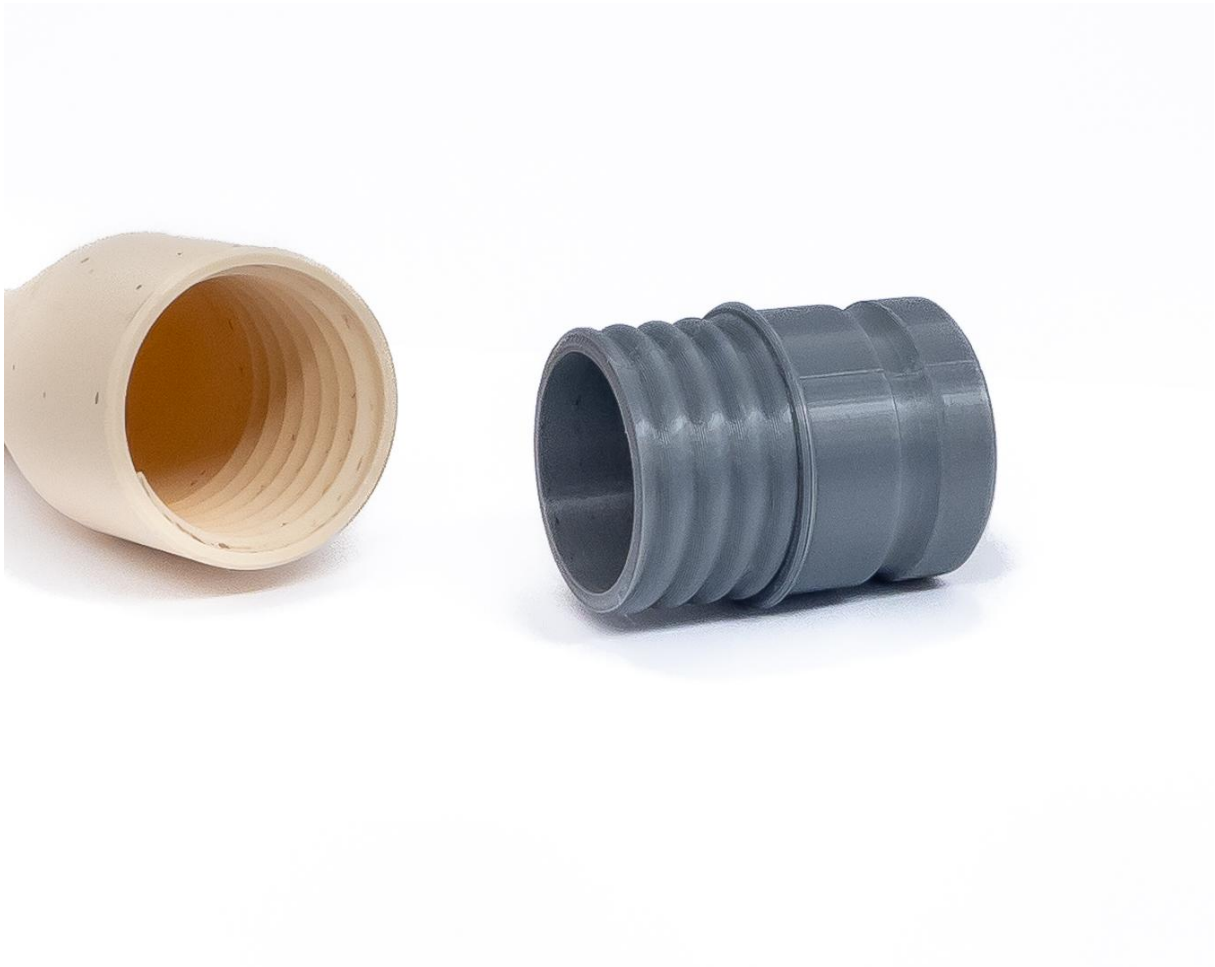
Download the “GENERIC MALE” STEP file, the PDF drawing (updated 4May thanks to the feedback of [@tr0y_297260](#)) with the necessary dimensions and complete instructions to make your own adapter (includes a link to the Onshape Source File) or use one of these ready made: (I'll add more as required or to request).

Here are links to the adapters I've made so far:-

OTHER HOSE SIZES



CAMLOCK ADAPTER - To use this connector with hoses ranging from 35mm to 75mm.



ACCESSORY ADAPTER - This is threaded the same as a standard hose to screw it into any of the adapters I've previously uploaded. I have been using a couple of these until I got around to making replacement ones.



VACUUM CUFF ADAPTER - 2"(50mm) to 40mm (ID)



VACUUM CUFF ADAPTER (50mm to 45mm)OD)



CAMLOCK ADAPTER 50mm HOSE to 25mm TOOL



CAMLOCK ADAPTER FOR 40MM ID TUBE

Model files



3MF

2 files



hose-fitting.3mf

☐ With pauses for insertion of magnets - refer notes



cam-lever.3mf

☐ With pauses for insertion of magnets - refer notes



STL

2 files



hose-fitting.stl



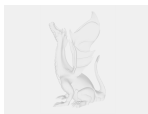
camlock-v2-cam-lever-4.stl



generic-male-camlock-male-connection.step

☐ Use this file to ADD your own custom connection to the basic fitting .

Other files



camlock-fittings-source-file.pdf

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