

Building instructions Filter penetration test setup

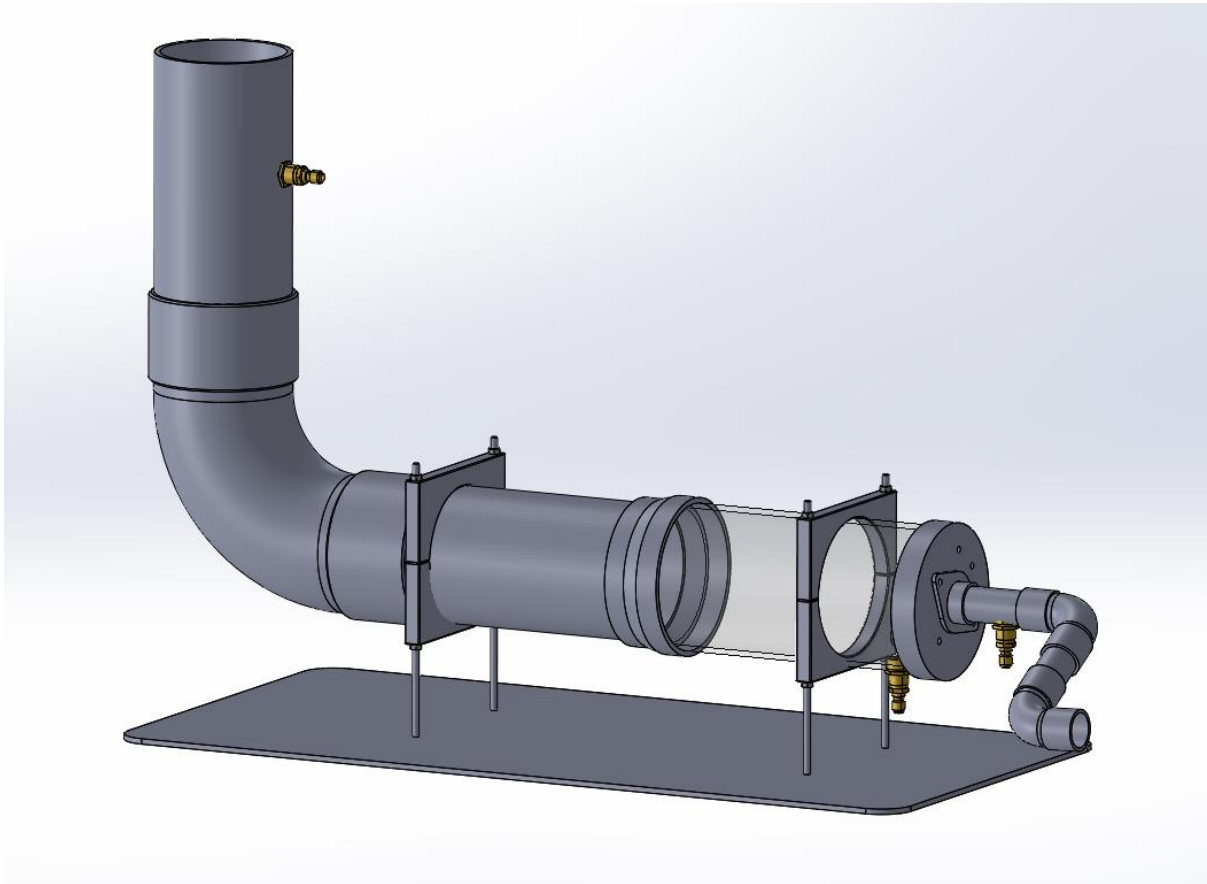


Figure 1: Overview of filter material penetration test setup

Specification of standard parts used

Particle counter (not shown in figure)

Portacount pro+ 8038 <http://www.procaresafety.nl/product/tsi-portacount-pro-8038/>

Particle generator (not shown in figure)

ATM 226 <https://www.topas-gmbh.de/en/produkte/atm-226/>

Air speed control setup (not shown in figure)

As described in Building manual - breathing resistance setup

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List of required components:

Nr:	Type of component:	Quantity:
1	Base plate	1
2	M6 threads 200mm	4
3	M6 nuts	12
4	125 mm clamps	2
5	134 mm clamps	2
6	PVC pipe 125x5 mm 280mm	2
7	PVC 90° bend 125 mm	1
8	Flange 125 mm to 134 mm	1
9	Plexiglass pipe 134x5 mm 300 mm	1
10	Mask clamp assembly	1
11	Air hose connection	3
12	PVC pipe 32x3.5 mm 100 mm	3
13	PVC 90° bend 32 mm	2
14	Silicone sealant	1
15	PVC tape	1

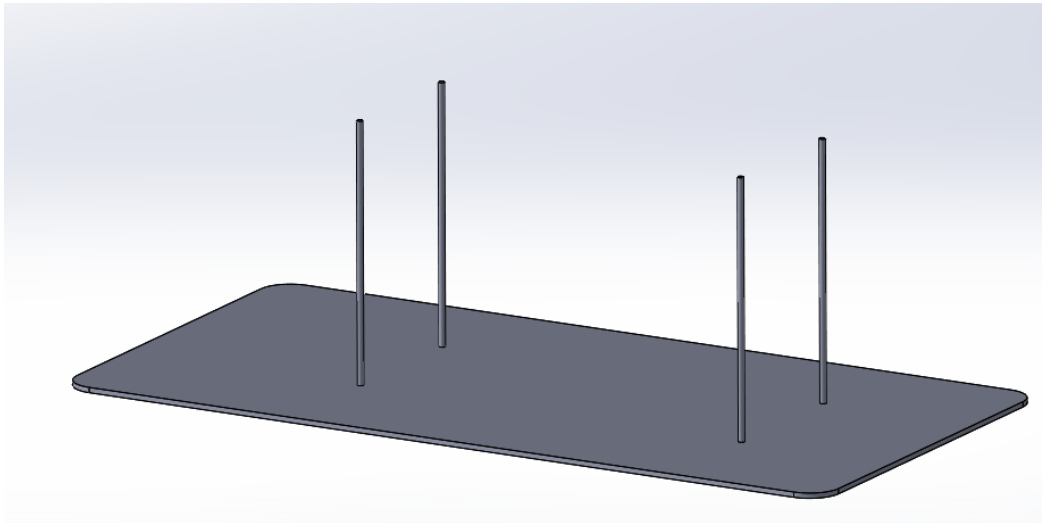
Building steps

1.

Make base plate 800 x 400 mm out of suitable material (aluminium, wood, plastic)

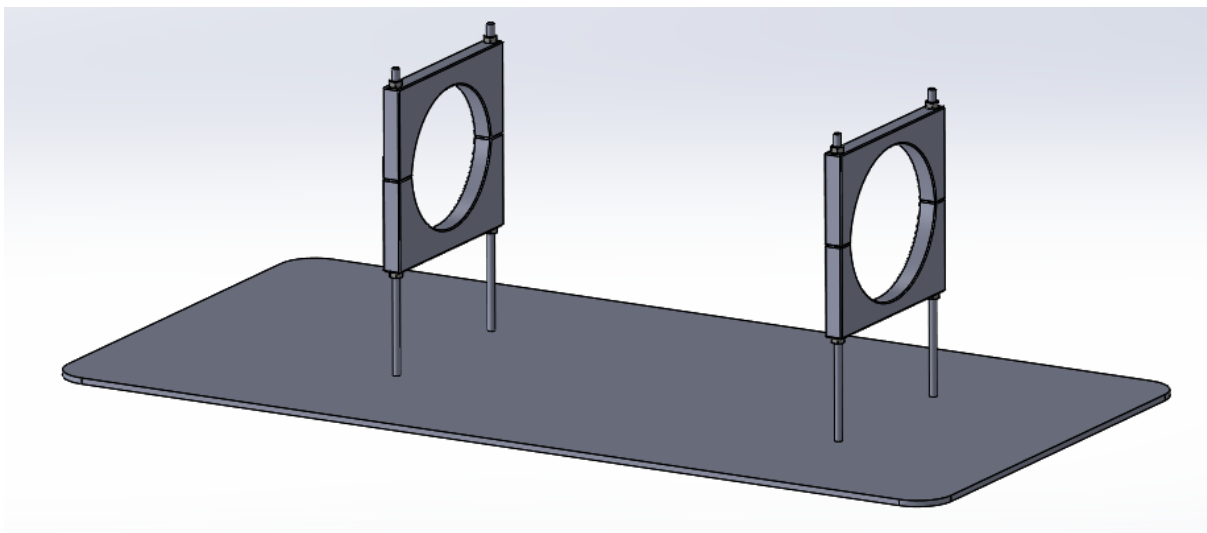
2.

Attach M6 threads to base plate in specified locations (see CAD-files)



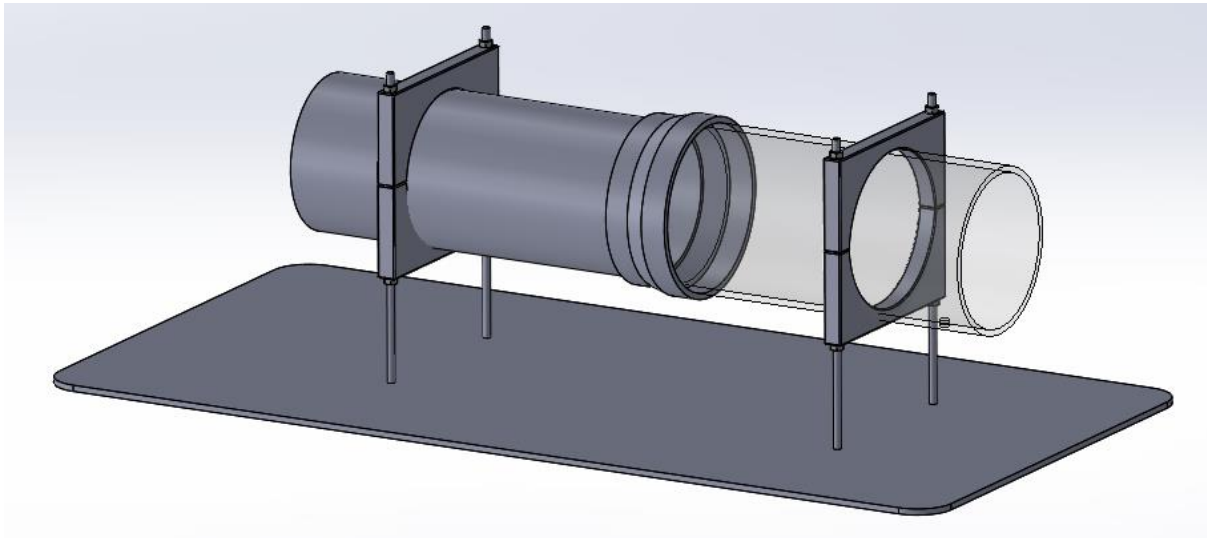
3.

Attach 125 and 134 mm clamps using the M6 nuts at specified height (see CAD-files)

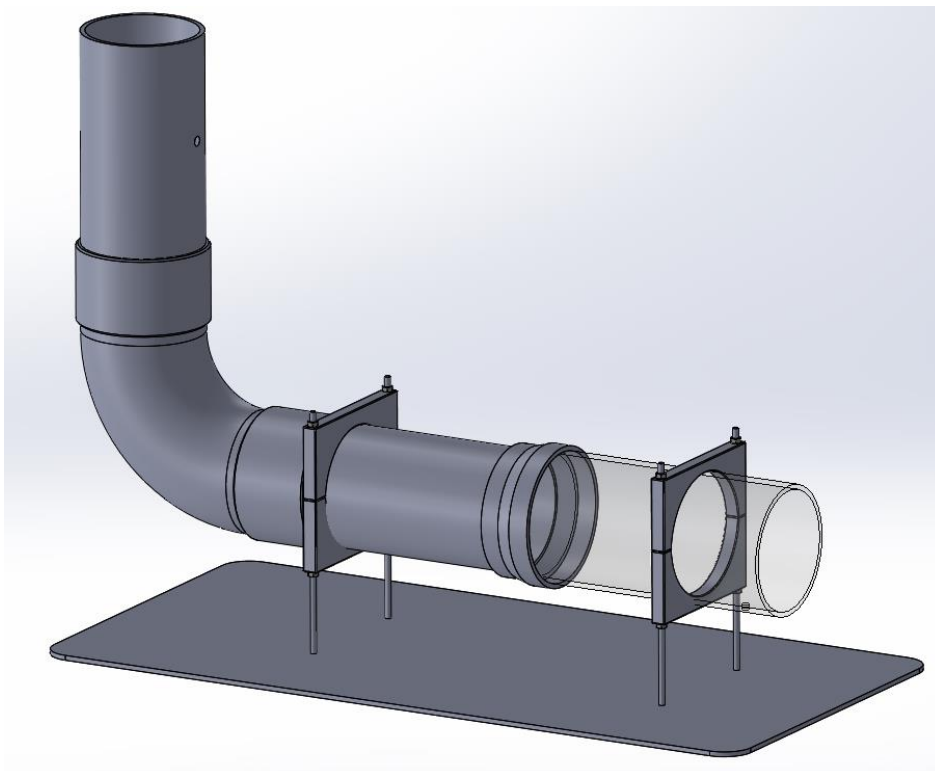


4. Attach 125 mm PVC pipe, flange, and 134 mm Plexiglass tube to clamps

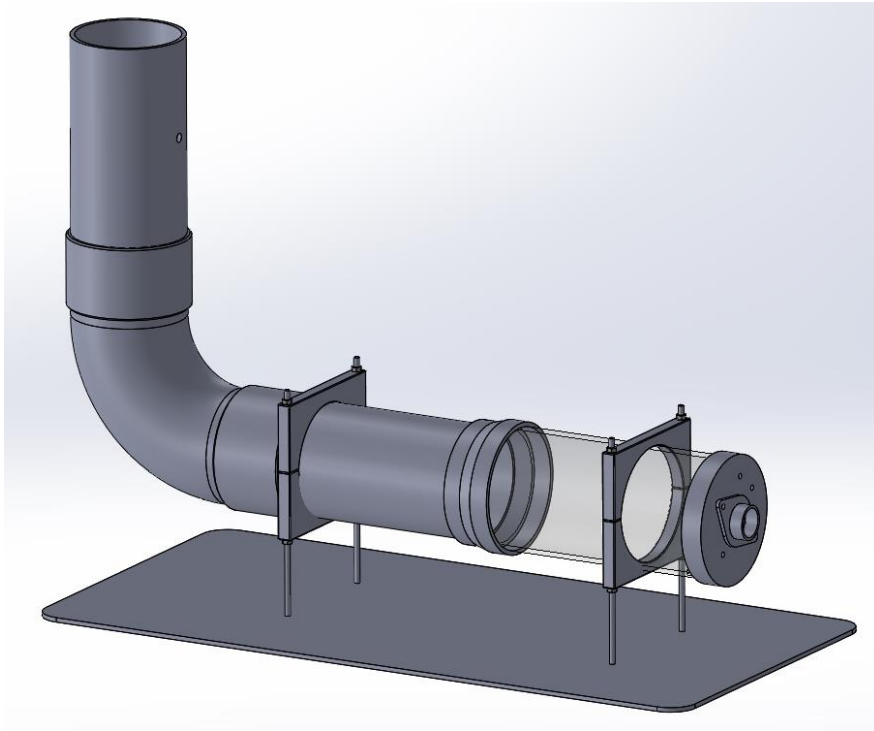
Use PVC-tape to guarantee airtight seal between flange and tubes



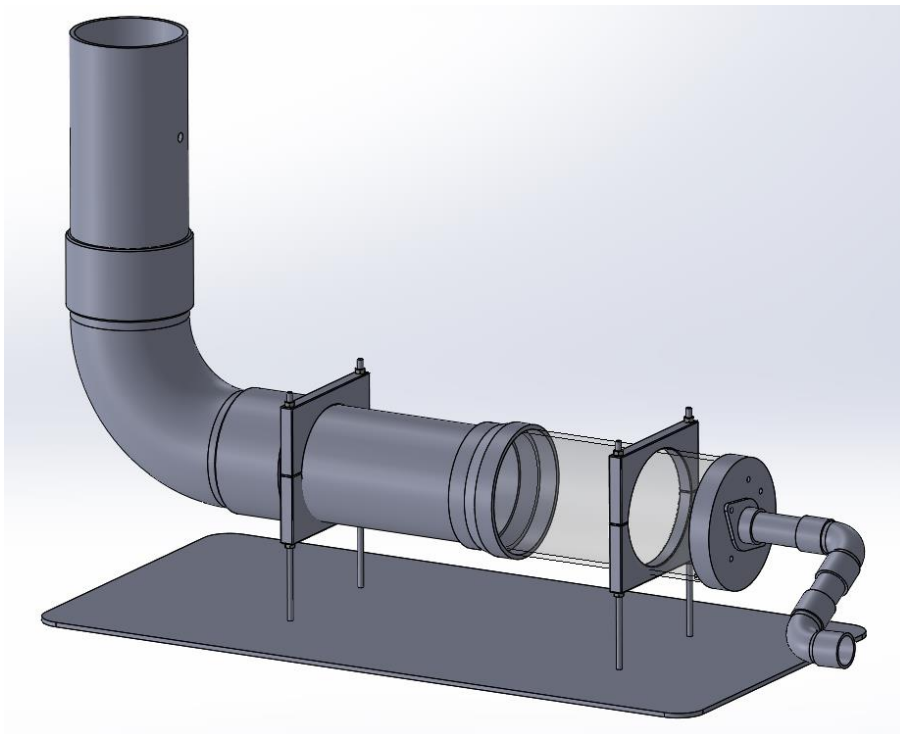
5. Connect PVC 90° bend and second PVC 125 mm pipe, rubber seal is present in PVC bend so PVC tape not needed



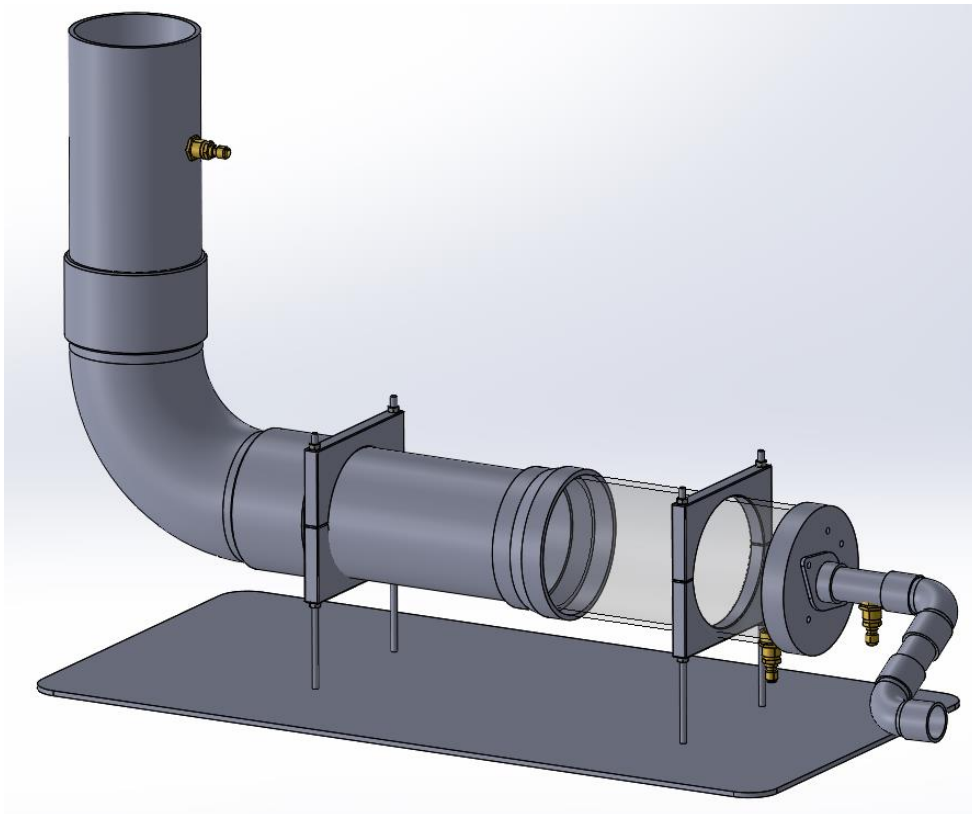
6. Connect mask clamp assembly (see CAD-files) to plexiglass tube, use PVC tape to guarantee airtight seal



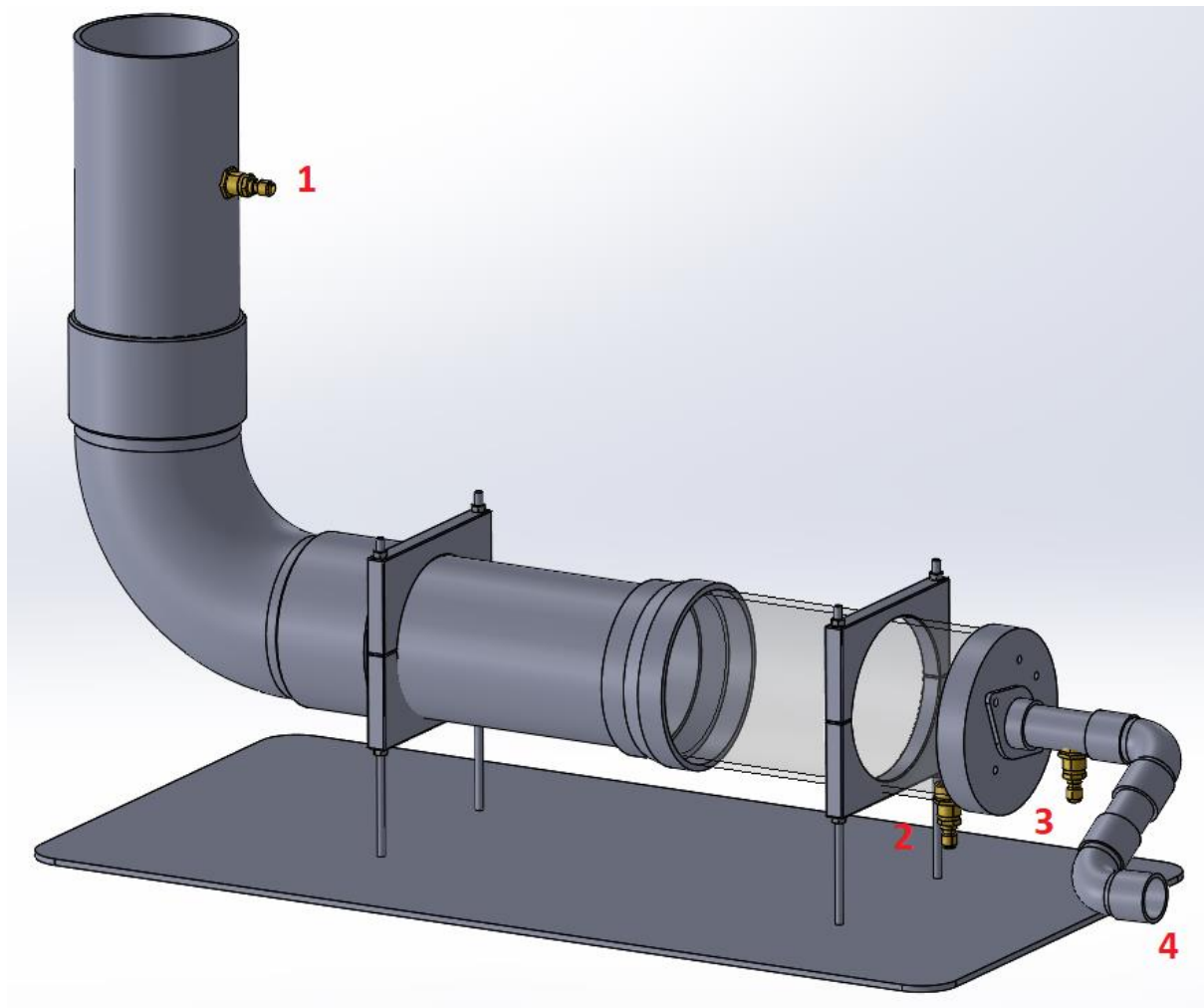
7. Connect 32mm PVC tubing to mask clamp assembly



8. Attach Air hose connectors to plexiglass tube, and to PVC 125 mm tubes. Use silicone sealant to guarantee airtight seal



Connecting to peripherals



1. Connect to output of particle generator
2. Connect to ambient air tube of particle counter
3. Connect to test tube of particle counter
4. Connect to air speed control setup