1 Tools you will need

An experienced worker should need about **one hour** of time, to do the procedure. The following tools are required:

- Torx size:10
- Torx size:20
- hexagon socket screw key in size 2,5
- Phillips screwdriver: PH2
- Pump Rebuild Kit

2 Extracting the pump from airpointer®

Before you can clean the pump, you have to extract it from the airpointer® . You can find detailed instructions in airpointer's manual chapter (10.4.7).

3 Maintenance of the pump

The maintenance of the double piston pump is completely analogous to the single piston model. You just need two "Pump Rebuild Kits" and repeat the following procedure for each piston.

3.1 Unplug the hoses from the pump

You might want to consider changing the hoses as well, depending on the degree of pollution in the hoses.

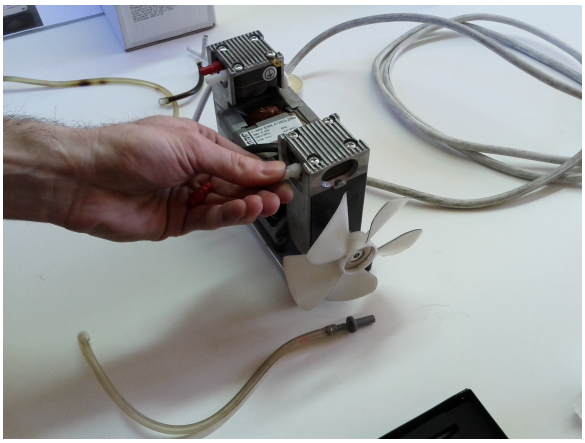

Figure 3.1: Remove the hoses and the connectors

Carefully unplug the red and white plugs from the pump as shown in figure 3.1. Please be advised, that these might break if you apply too much force.
For specifications of new hoses see chapter 4.

3.2 Disassembling of the first piston

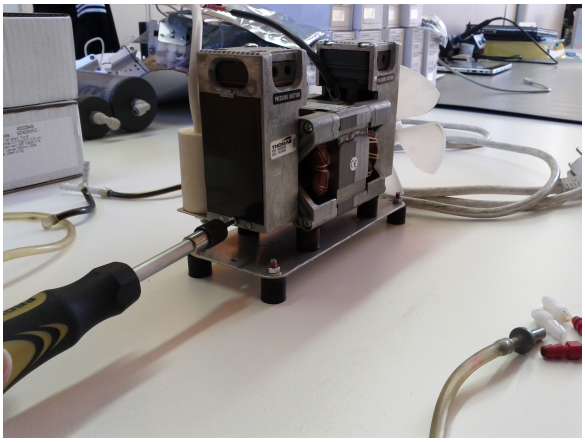

Figure 3.2: Remove the side cover

1. Remove the side cover

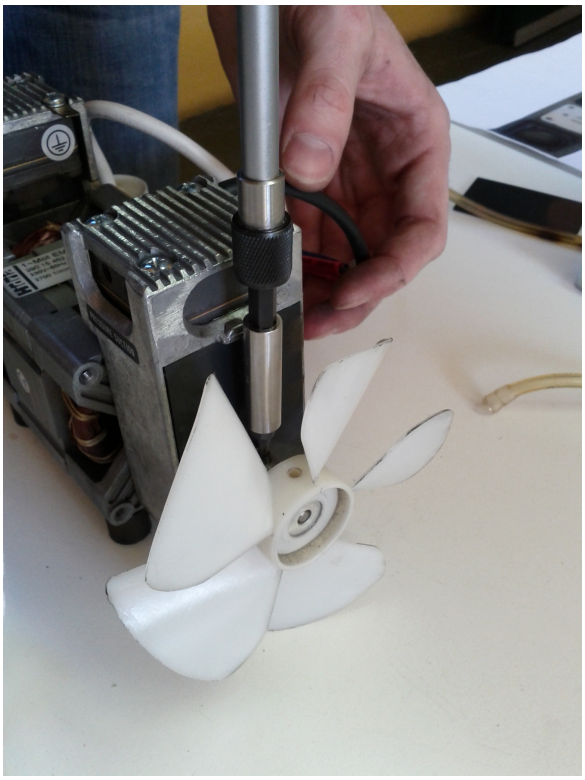

Figure 3.3: Remove the cooling fan

2. Remove the cooling fan

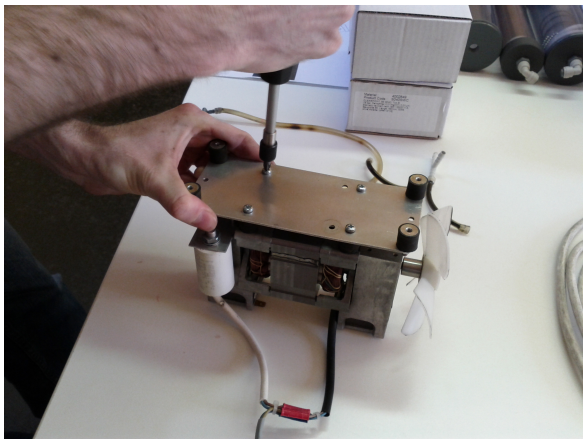

Figure 3.4: Remove the bottom plate

3. For easy access to the pistons remove the bottom plate by loosen the 4 screws with the TX10.

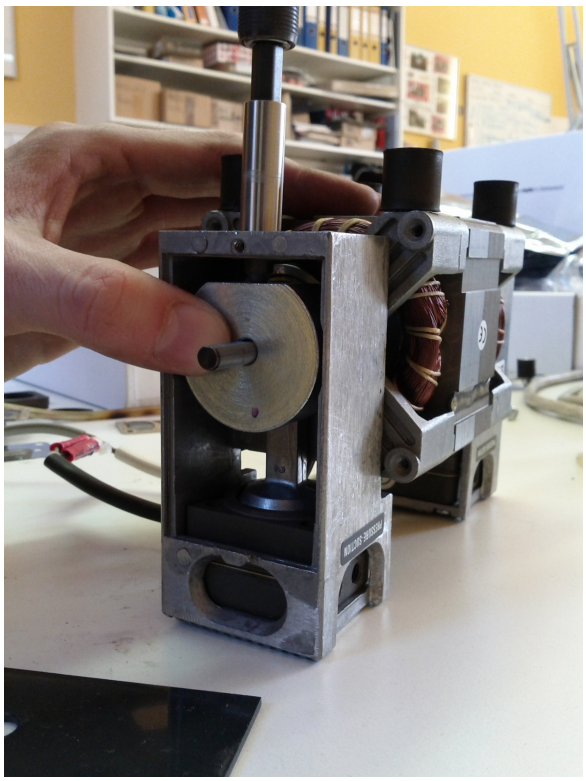

Figure 3.5: Extract the weight

4. Flip the pump and unscrew the weight with the 2,5 hexagon socket

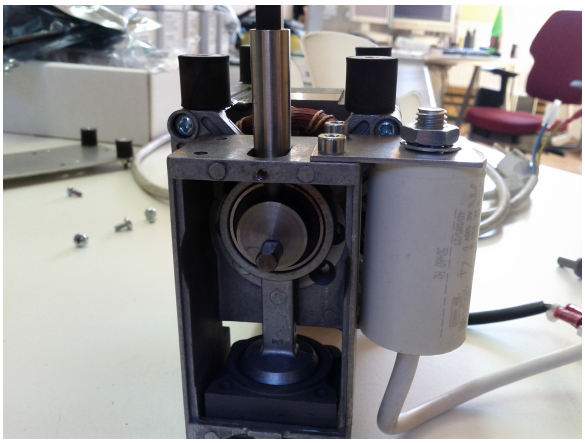

Figure 3.6: Loosen the con rod

5. While the pump is flipped, this is a good time to loosen the con rod. Do not pull out the rod yet.

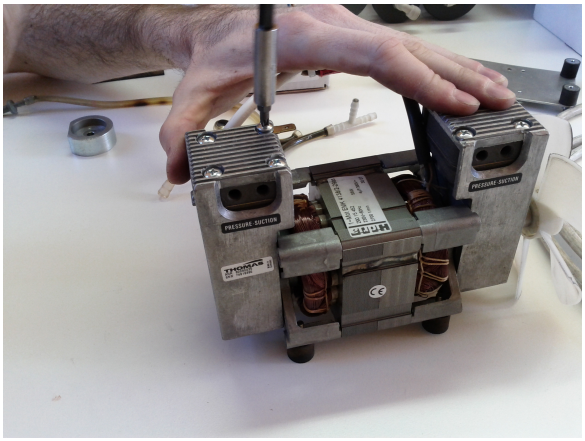

Figure 3.7: Unscrew 4 screws holding the head

6. Put the pump back in an upright position and unscrew the piston's head by loosen the 4 screws on the top.

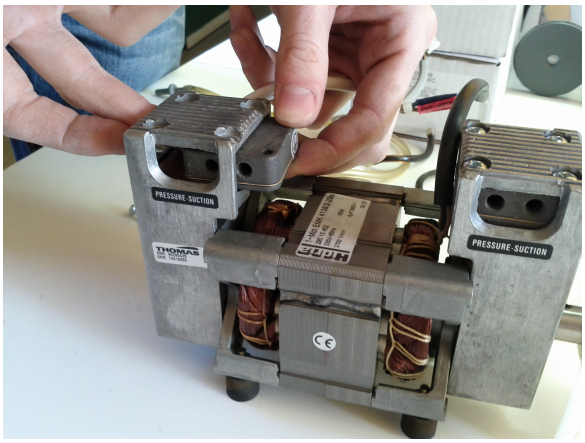

Figure 3.8: Extract the head

7. Pull out the piston's head sideways.

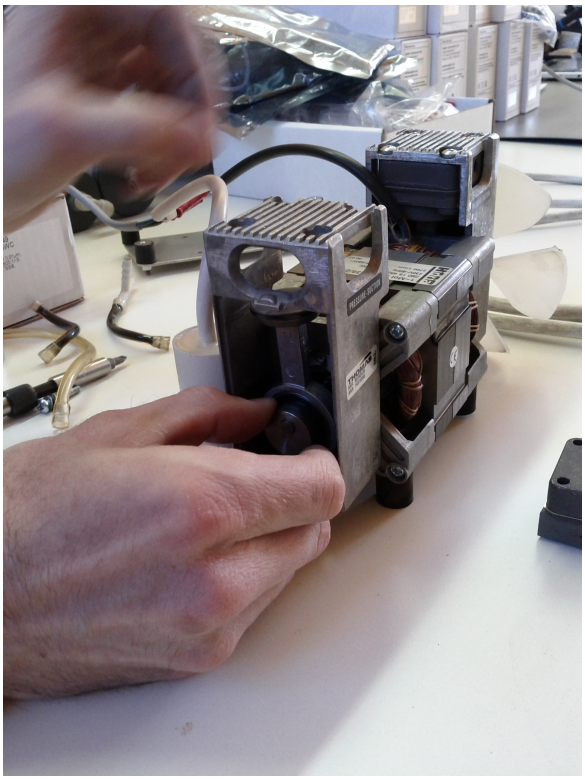

Figure 3.9: Pull out the con rod

8. Pull out the con rod.
9. Check the bearing of the con rod.

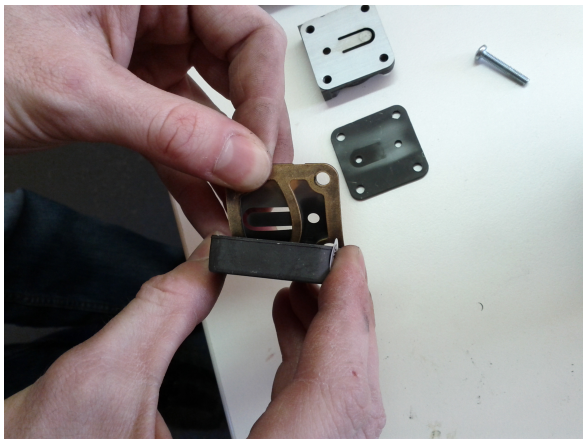

Figure 3.10: Disassemble the head of the piston

10. Clean the top part of the head. The narrow plate made of cardboard and the two steel plates may be thrown away.

Figure 3.11: Disassemble the con rod

11. Unscrew the screw between plate and con rod. Note that this screw can be very tight.

3.3 Reassemble the first piston

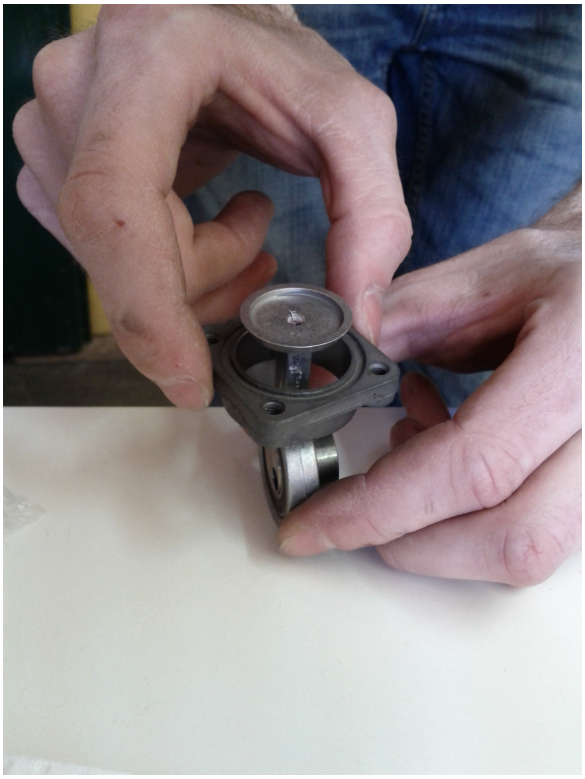

Figure 3.12: Reconstruct the con rod - part 1

1. Reassemble the con rod with the spare parts of your "Pump Rebuild Kit". Start by putting the new bottom part over the con rod, see figure 3.12.

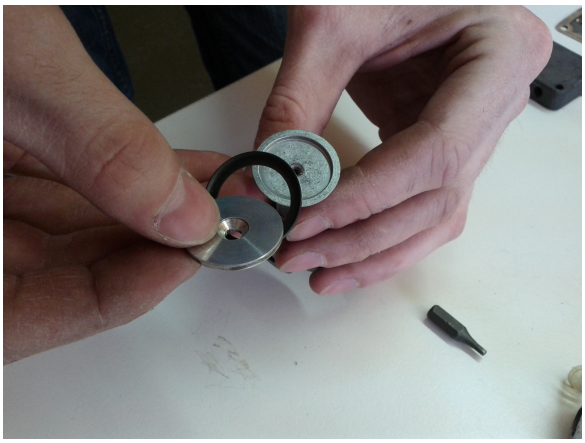

Figure 3.13: Reconstruct the con rod - part 2

2. Put the new sealing ring and the new plate (in this order) onto the con rod as shown in figure 3.13. Keep in mind to place the plate centrical.

Figure 3.14: Fasten the screw of the con rod

3. Fixate the reassembled con rod. Remember to screw it very tightly, as this is a moving part

Figure 3.15: Put on the second sealing ring

4. Bring the second sealing ring in place.

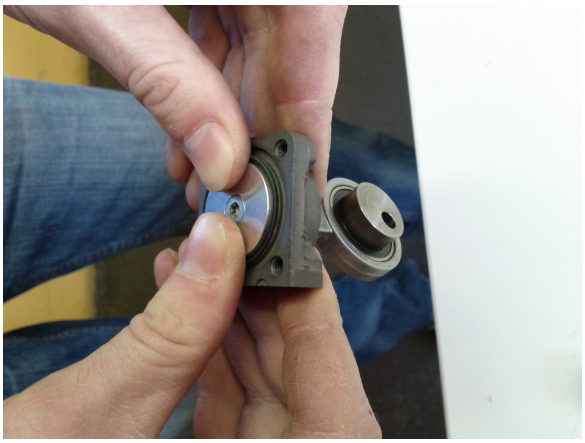

Figure 3.16: Push the plate down

5. Gently push the rod halfway through the bottom part of the head, as shown in figure 3.16. If you push it to wide, you will have to unscrew the con rod and redo every step until now.

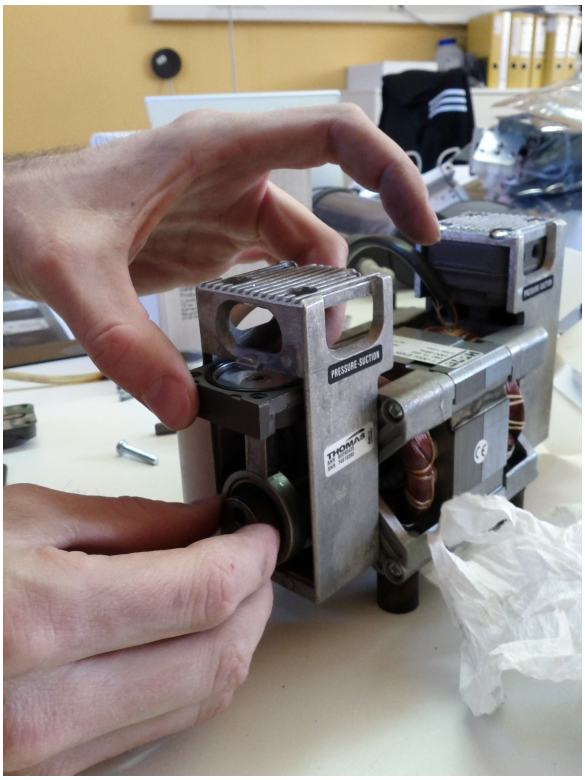

Figure 3.17: Insert the con rod

6. Re-insert the con rod. Make sure the shaft's flattening is pointing up.

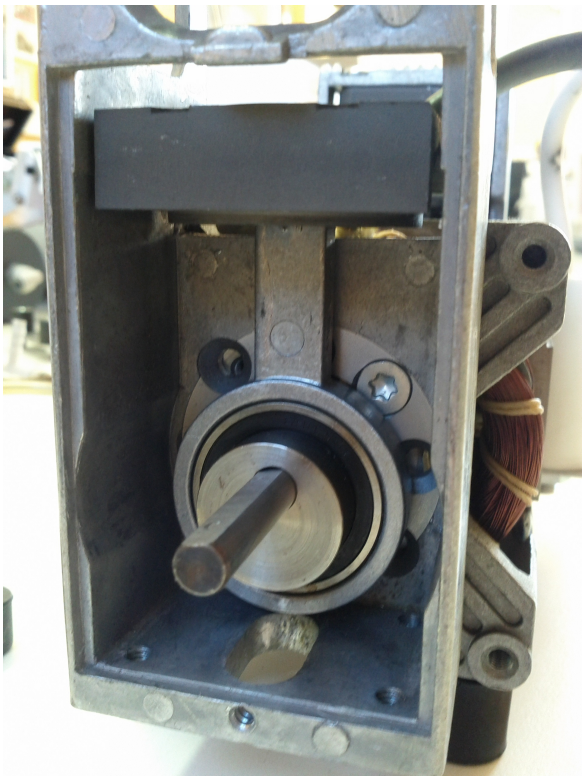

Figure 3.18: Flattening of the shaft must point up

7. Fasten the con rod with the Torx size 20. This can only be done, if the shaft's flattening is positioned as in figure 3.18.

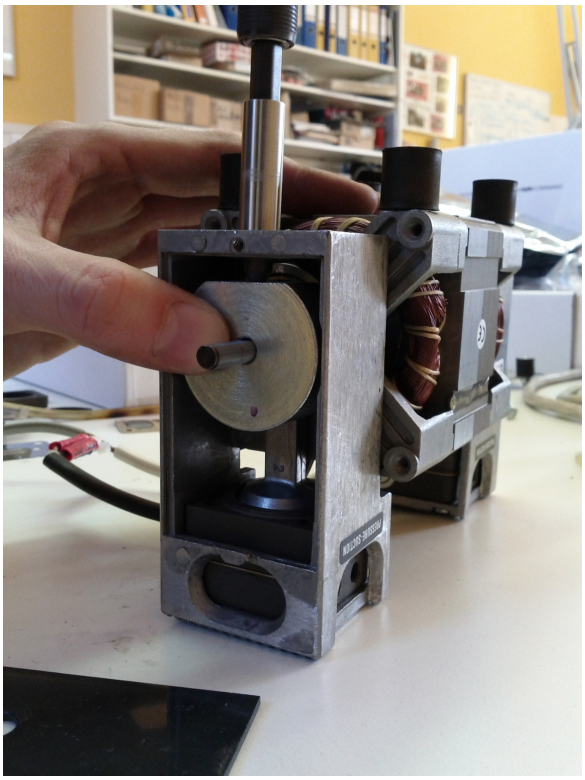

Figure 3.19: Fasten the weight

8. Put the weight back into its place. Similar to the shaft, the weight's flattening needs to be pointing up, as you can see in figure 3.19.

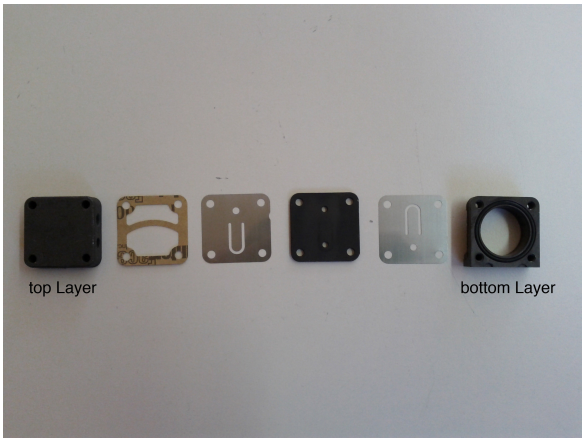

Figure 3.20: The components of the piston-head

9. To assemble the head, it is important to keep the correct order and orientation of the parts. Figure 3.20 shows all components. Think about stacking the components (layers) in figure 3.20 from right (bottom) to left (head). Keep in mind that the straight edge of the bottom must be aligned to the center of the pump, while the rounded corners point toward the outer edge of the pump.

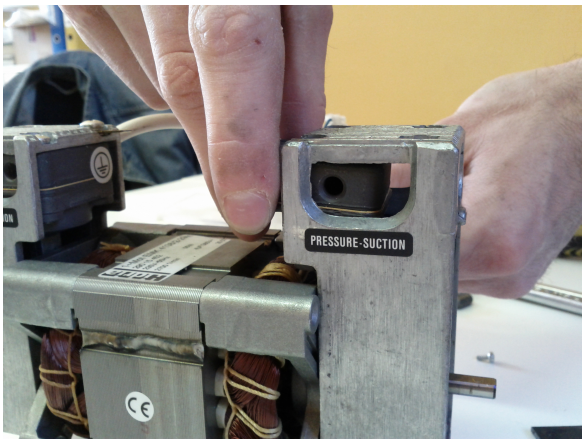

Figure 3.21: Reinsert the head

10. Put the head back into the pump. If you assembled it correctly, the in- and outlets face in the same direction. When the pump is back in the airpointer® it should be possible to attach the hoses on the right side of the pump.

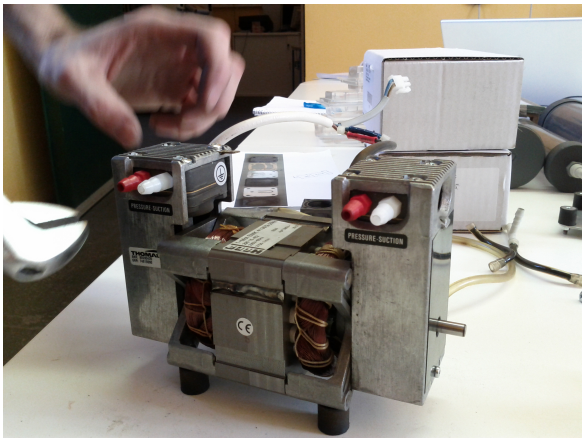

Figure 3.22: Install the red and white plugs

11. Reconnect the plastic plugs to the pump. Figure 3.22 shows the correct color assignment (Red: outlet, White: inlet). Please note that these plugs might break if they are applied with too much force.

4 Change hoses

In case you want to change hoses of the pump, we provide a list of material you will need. We suggest to use $\frac{1}{4}$-inch Tygon® hose.
Material you will need:

- 2 pieces of hose of approximately 10cm length, for the output connectors. Connect those to the T-piece, see figure 4.1
- 2 pieces of hose of approximately 40cm length, for the input connectors. Connect them to the grey pin wrench.

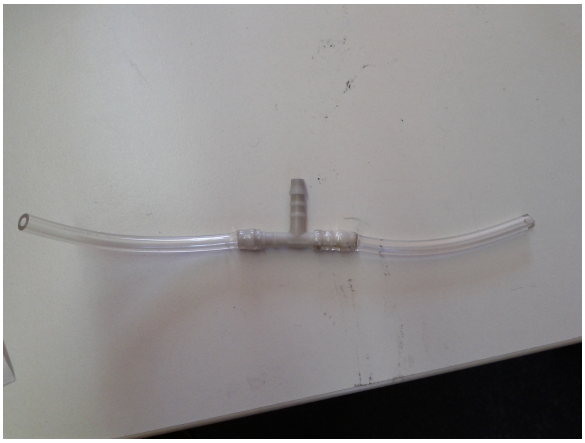

Figure 4.1: Output hoses connected to T-piece