

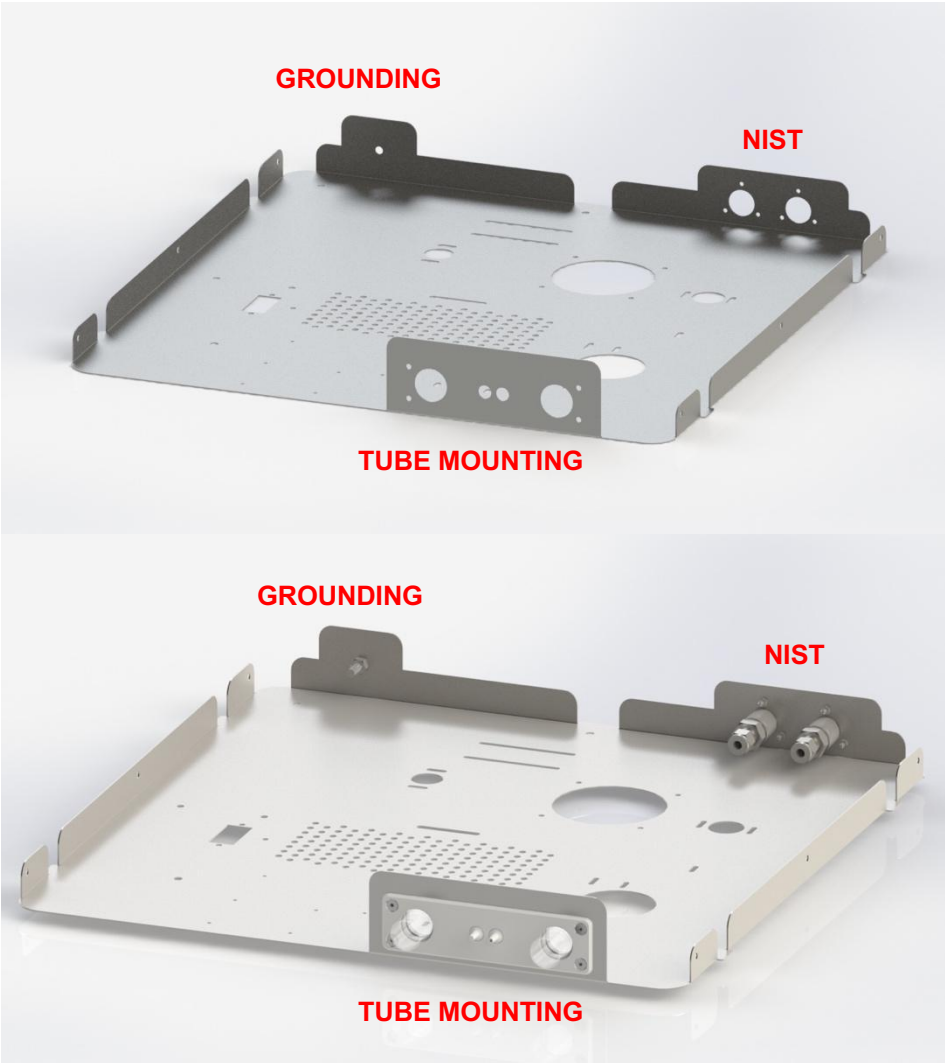
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TITLE: SUB-ASSEMBLY #8 – BOTTOM PLATE		

Revision	Date	Modifications	Author
V1.0	15-04-2020	Setup first version (images and elaboration)	Jeroen Roest / Bart Spel
V1.1	16-04-2020	Overview materials	Jeroen Roest/ Bart Spel
V1.2	23-04-2020	Translation from Dutch to English	Larissa Nagtegaal
V1.3	27-04-2020	Final check + translation images	Josephine Dumas

This subassembly describes the assembly of the components of the metal bottom plate. Later on, multiple components need to be added. This will be discussed in further instructions.

The overview list and visualizations after assembly are divided into three parts: NIST-connectors, grounding and tube mounting. The cover on the side of the tube mounting was adjusted in a later stadium, so this might not comply with the images. However, it does not chage the method of assembly.

The combination of the three parts of this subassembly is visualized below. The first image shows the empty bottom plate, the second image shows the bottom plate after assembly.



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NIST-fittings

Part	Supplier	Quantity
1: G 1/4" to 1/4" tube fitting	Swagelok	2
2: G1/4" gasket	Swagelok	2
3: Nut M3	-	6
4: NIST fitting AIR	Heemskerk	1
5: Bolt M3x 12mm + ring M3	-	6
6: NIST fitting O2	Heemskerk	1

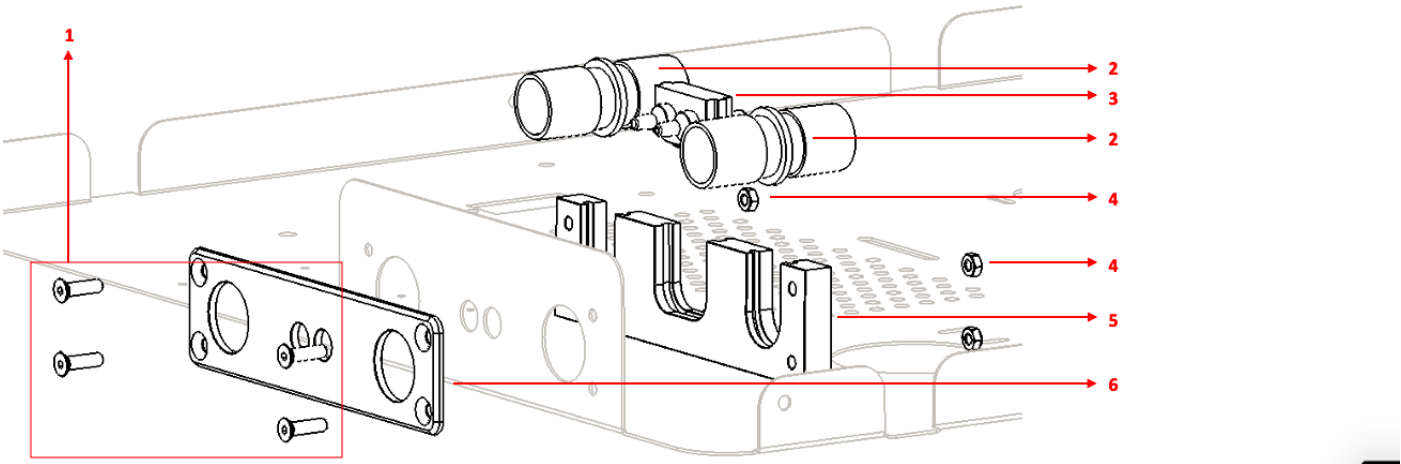
Grounding

Part	Supplier	Quantity
1: Grounding pin M6	Medical IT	1
2: Ring M6 (yellow/green)	Medical IT	1
3: Tooth lock washer M6	Medical IT	1
4: Nut M6	Medical IT	1

Tube mounting

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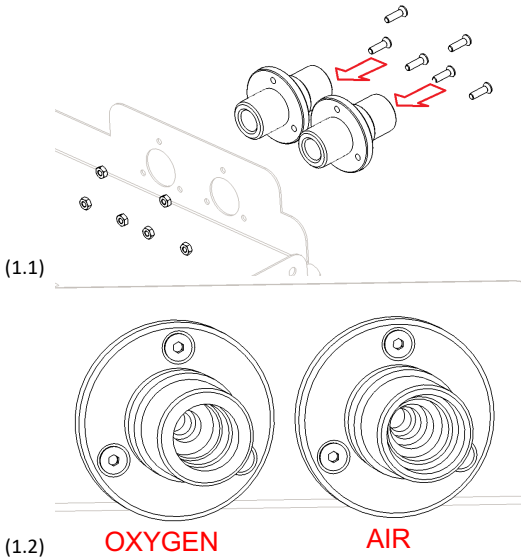
Part	Supplier	Quantity
1: M4x16 mm countersunk screw (plastic)	-	4
2: 22mm-22mm connector	Merkala	2
3: 3D print Pressure tubes	Shell	1
4: Bolt M4 (plastic) + ring M4 (plastic)	-	4
5: 3D print Tube doublemount	MTB3D	1
6: 3D print Cover	MTB3D	1



On the rear side of the bottom plate, cutouts for the NIST fittings are visible (see figure 1.1).

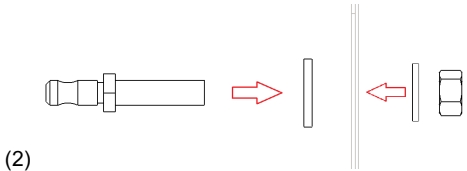
- The cutout closest to the corner is meant for the NIST-fitting O2.
- The NIST-fitting O2 can be recognized by its thick outer ring (see figure 1.2).
- The cutout closest to the inside is meant for the NIST-fitting AIR.
- The NIST-fitting AIR can be recognized by its thin outer ring (see figure 1.2).
- The NIST-fittings need to be guided through the aforementioned cutouts (the unthreaded side). They need to be attached with three M3x12mm bolts. In between, a M3 ring needs to be added. M3 nuts need to be used to tighten the connection.

1.



- Next to the NIST fittings, the cutout for the grounding pin can be found (see figure 2).
- The grounding pin needs to be guided through this cutout (from the outside to the inside, threaded side inside).

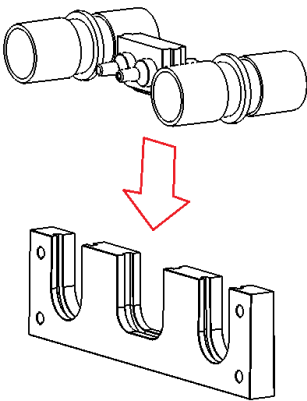
2.



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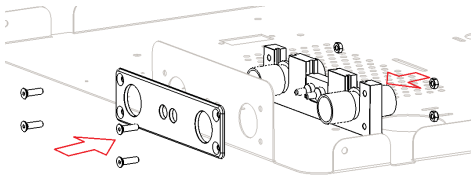
A yellow/green-marked ring needs to be placed on the outside. On the inside, a tooth lock washer (M6) needs to be added first. A M6 nut is placed on top of that (see figure 2).

3.
- The 3D print Pressure tube should be positioned in the middle opening of the 3D print Tube doublemount. The connection might be a little tight, you must use some force (see figure 3).
 - The 22mm-2mm connector needs to be positioned in the 3D print Tube doublemount (see figure 3).



(3)

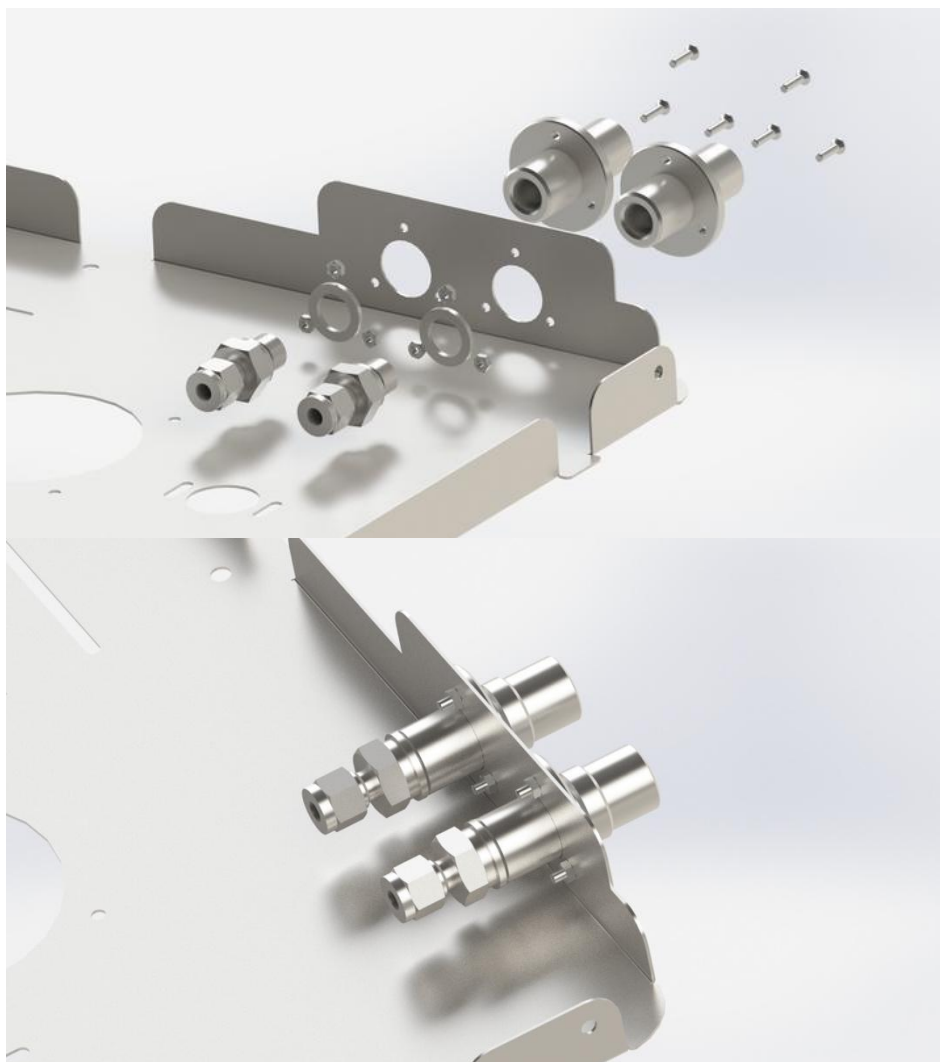
4.
- This assembled part, from step 3, must be positioned in the cutout on the front of the bottom plate (on the inside, see figure 4).
 - On the outside, the 3D print Cover must be attached. Align this with the openings in the bottom plate and the openings of the assembled 3D component on the inside. Attach with four M4x16mm **plastic** bolts (from the outside to the inside). Add plastic M4 rings and nuts on the inside (see figure 4).



(4)

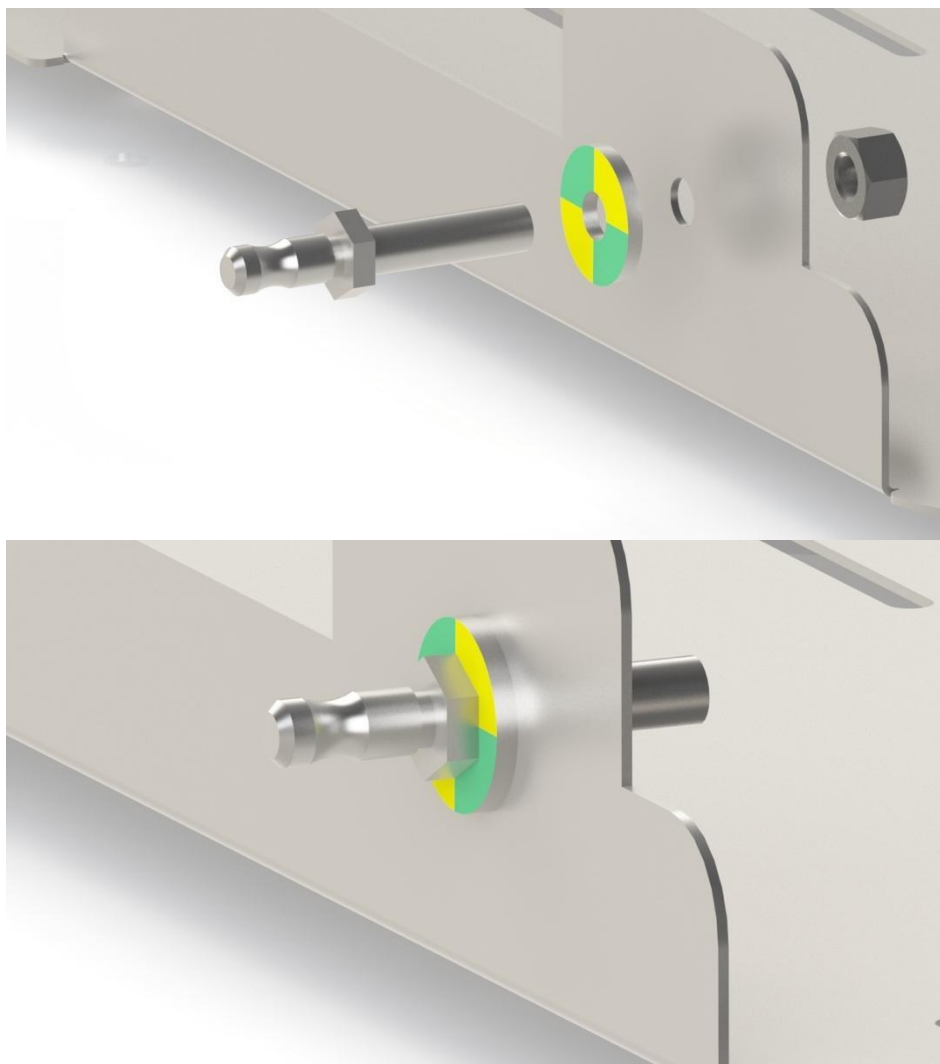
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In the figure below, the correct assembly of the NIST fittings can be seen.



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In the figure below, the correct assembly of the grounding can be seen.



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In the figure below, the correct assembly of the tube mounting can be seen.

