ARMS_partB_Assembly

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Abstract

During this step, you will be assembling the ARMS units from the individual parts. The unit is a stack of alternating open layers and closed layers. The closed layers contain a cross-shaped structure dividing the ARMS in four compartments, providing 'cave-like' spaces for organisms. The very first space, at the bottom of the ARMS **should always be a closed layer** and the top layer will be open.

Another important feature is that the first plate should lay flat on the base plate. No space should be created between the first plate and the base plate in order to avoid creating an extra space for colonization.

Citation: Laetitia Plaisance ARMS_partB_Assembly. **protocols.io**
dx.doi.org/10.17504/protocols.io.qisduee
Published: 29 May 2018

Guidelines

The numbering of the ARMS plates starts with the bottom plate, directly in contact with the base plate. This bottom plate is plate #1. The upper plate is plate #9.

The very first space, at the bottom of the ARMS **should always be a closed layer** and the top layer will always be open.

The first plate should lay flat on the base plate. No space should be created between the first plate and the base plate in order to avoid creating an extra space for colonization.

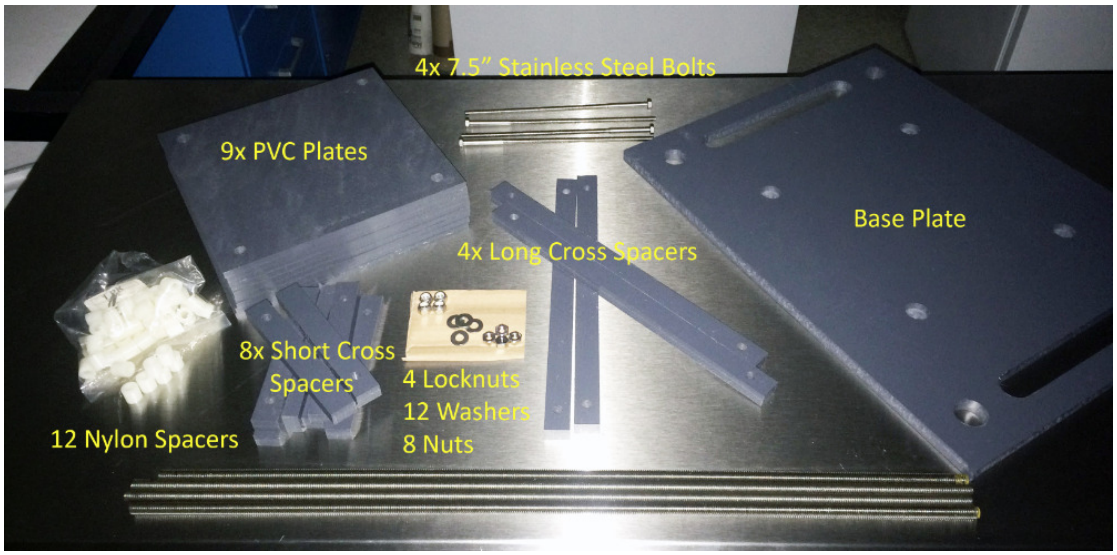
Protocol

Assemble all the necessary material

Step 1.

- 1 x PVC base plate (45cm x 35cm x 1.27cm)
- 9 x PVC layer plates (22.5cm x 22.5cm x 0.63cm)
- 4 x PVC long cross spacers (30cm x 2cm x 1.27cm)
- 8 x PVC short cross spacers (14cm x 2cm x 1.27cm)
- 4 x 7½ or 8-inch stainless steel bolts – minimum 2” thread length
- 16 x ½-inch long Nylon spacers
- 12 x ¼-inch stainless steel washers

- 4 x ¼-inch stainless steel nuts
- 4 x ¼-inch stainless steel nylon insert locknuts
- 2 x 7/16-inch wrenches (11mm)
- Silicon grease (we use Aqualube/Aquashield™)



Link to assembly video and file with exploded view

Step 2.

A four minute video of the full ARMS assembly is available here:

https://www.youtube.com/watch?v=_L_FuKQVXnY&t=141s

Files below include a two page **Assembly Protocol** with exploded view, **ARMS schematic** which includes the blueprints of the PVC parts.

Assembly Procedure

Step 3.

Place a washer on each of the stainless steel bolts and run the four bolts with washers through the four corners of a singlelayer plate. Invert the plate so the bolt heads and washers are underneath and the bolts are sticking up through.

Assembly Procedure

Step 4.

Slide a nylon spacer onto each bolt and add a second layer plate. This creates an open layer (this will become the top layer when you invert the entire stack onto the base plate later)*.

Assembly Procedure

Step 5.

Slide a long cross spacer onto two bolts in opposite corners. Place two short cross spacers on each of the two remaining bolts (one each) in a way that they make contact with the long spacer at right angles. Add a third layer plate to create a closed layer.

Assembly Procedure

Step 6.

Repeat steps 2 and 3 to alternate between open and closed layers until there are four of each.

Assembly Procedure

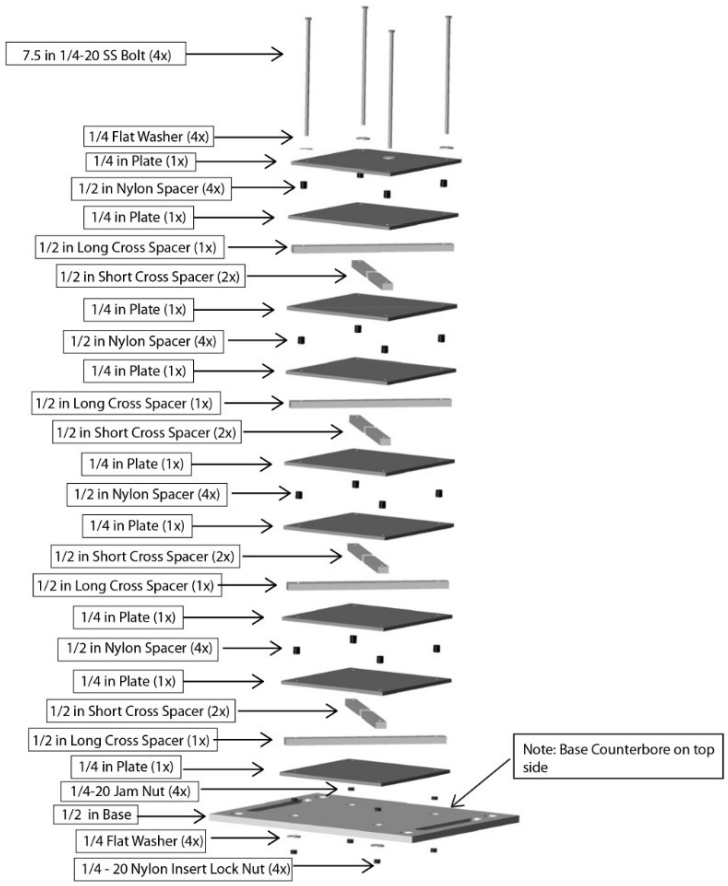
Step 7.

Once the fourth closed layer is complete, put silicon grease to the threads of the bolts and add a washer and a nut to each bolt; tighten securely.

Assembly Procedure

Step 8.

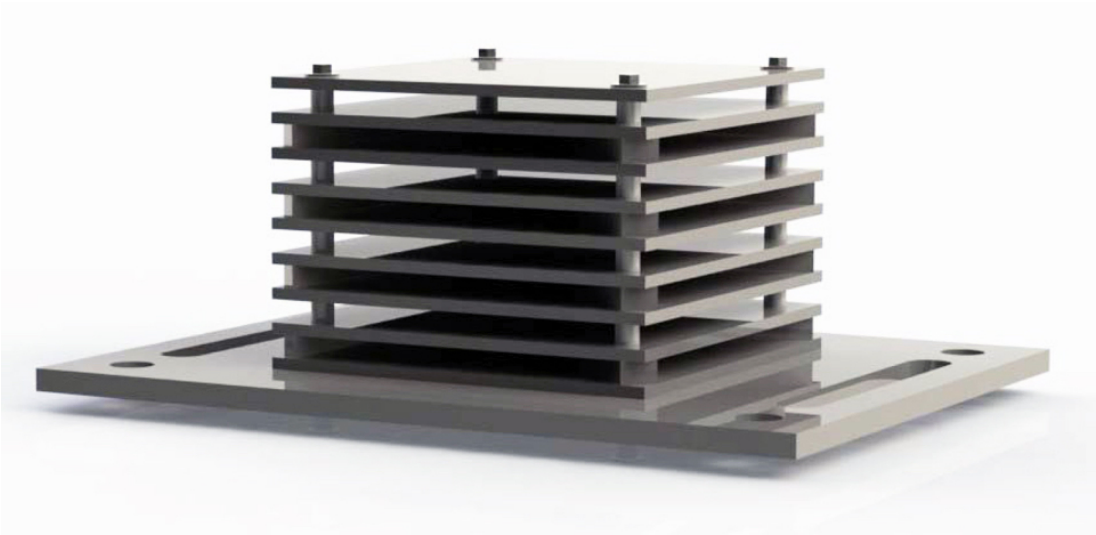
Place the base plate on the bolts with the counter-sunk side down. Coat the tips of the bolts in silicon grease again if needed. Add a washer and the locknut and tighten securely using the two wrenches - one to hold the bolt and the other to tighten the nut.



Assembly Procedure

Step 9.

Invert the ARMS structure so the base plate is on the bottom. It is now fully assembled.



NOTES

Laetitia Plaisance 16 May 2018

The layer directly above the base plate should always be a closed layer. Make sure there is no space between the base plate and the first ARMS plate. The plate directly in contact with the base plate is the plate #1.