

## Structure: Assembly

Now that all of the primary components of the structure are complete it is time to put them together. In this section, you will assemble all the components of the structure to form the final frame of the GuitarBot.

### Bill of Materials:

Name	Number
Pair of Legs	1
Pair of Arms	1
Strumming Assembly	1
15" 80/20® Bar	1
17" 80/2®0 Bar	1
M6 12mm BHSCS	20
L Brackets	12
M6 Split Washer	20
10 Series M6 Nut	20
6-32 Socket Head Screw ½"	8
¼"Washer ½" OD	4
¼" Washer 1" OD	4
Single 80/20® Mount	4
6-32 Nylon Nuts	4

Tools
Hex Keys

## Step 1:

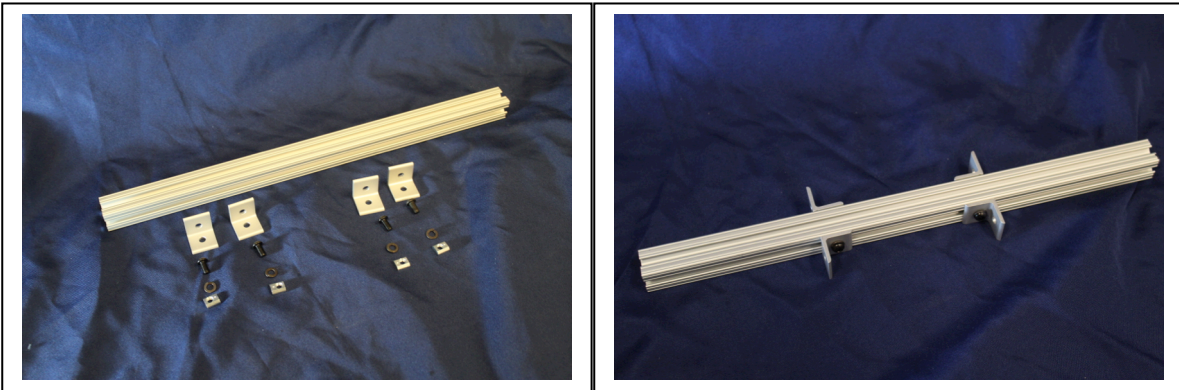


Need:

- 1x Pair of Legs
- 1x 15" 80/20® Bar
- 4x M6 12mm BHSCS
- 2x L Brackets
- 4x M6 Split Washer
- 4x 10 Series M6 Nut

Attach an L bracket to either end of the 15" bar so that the other side is parallel to the end. Measure and mark 2' up on each leg. Slide the 15" bar in between the legs until the top of the L brackets meet the 2' mark, then lock them in place.

## Step 2:

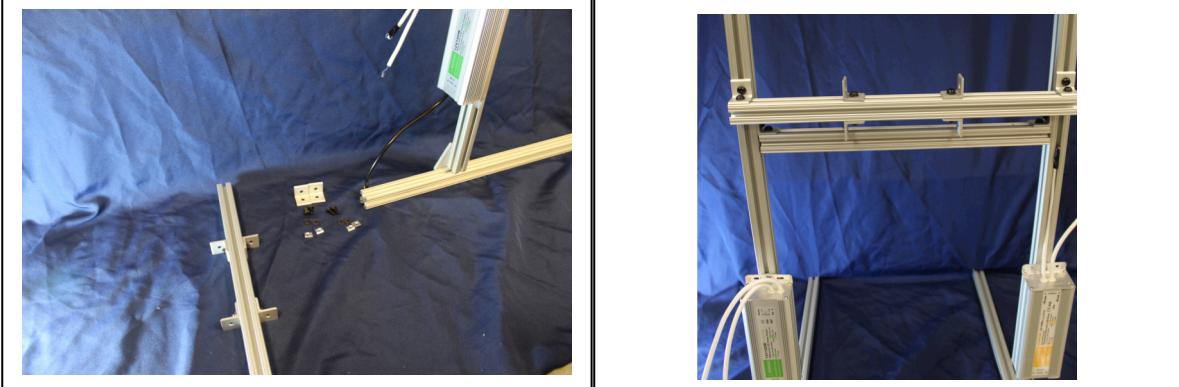


Need:

- 1x 17" 80/20® Bar
- 4x M6 12mm BHSCS
- 4x L Brackets
- 4x M6 Split Washer
- 4x 10 Series M6 Nut

Take the 17" bar and attach two L brackets to any side. Then, attach two L brackets to the opposite side of the same shaft. Their location doesn't matter as they'll be moved to accommodate the PCB later.

### Step 3:

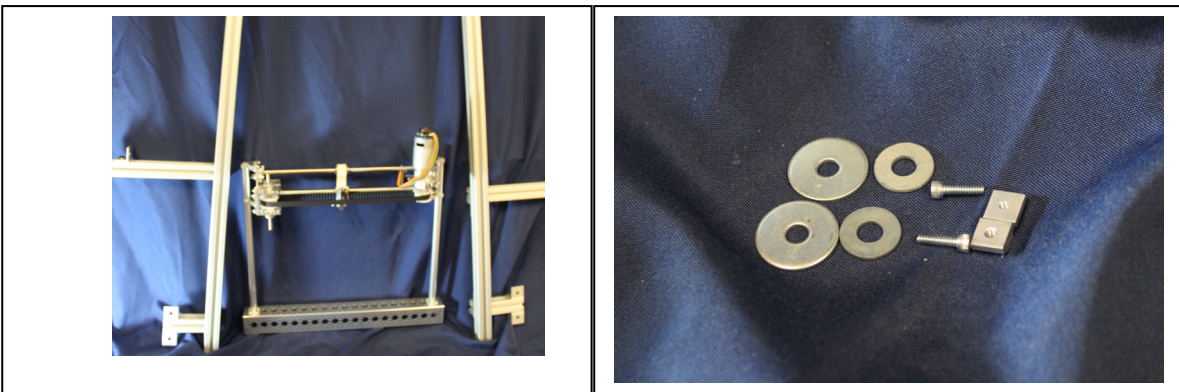


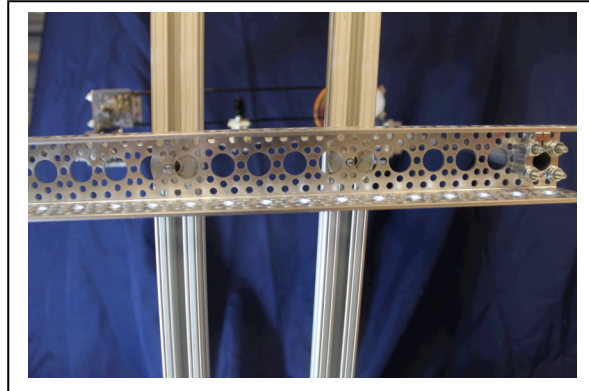
Need:

- 4x M6 12mm BHSCS
- 2x L Brackets
- 4x M6 Split Washer
- 4x 10 Series M6 Nut

Attach an L bracket to either end of the 17" shaft on one of the sides with two L brackets. Align them so that they are parallel to each other and one of the sides of the shaft. Then attach the shaft to the legs so that the bottom of the shaft comes to the 2' mark.

### Step 4:





Need:

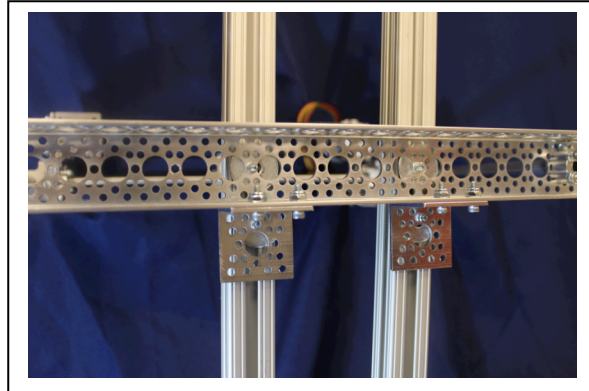
- 1x Set of Arms Assembly
- 1x Strumming Assembly
- 2x 6-32 Socket Head Screw 1/2"
- 2x 1/4"Washer 1/2" OD
- 2x 1/4" Washer 1" OD
- 2x Single 80/20® Mount

Lay each arm so it is leaning up as in the first image. Measure and mark 16" from the bottom on each leg. Then, take the strumming assembly and place the first screw in the centered 6-32 hole that is 5 inches from the motor side; place a bolt through it, then both washers and the mount. Measure another 5" over and repeat. Then slide the strumming assembly down until it is centered on the 16" mark of both arms.

### Step 5:





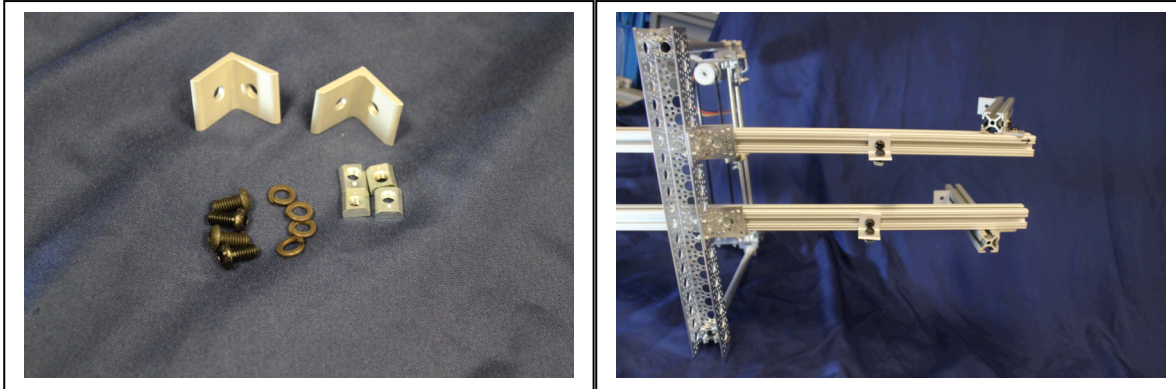


Need:

- 6x 6-32 Socket Head Screw 1/2"
- 2x 1/4" Washer 1/2" OD
- 2x 1/4" Washer 1" OD
- 2x Single 80/20® Mount
- 4x 6-32 Nylon Nuts

Take one of each washer, an L bracket, a screw, and a mount. Create two assemblies seen in the second picture; bolt, L bracket, 1" washer, 1/2" washer, mount. Slide one along each arm and secure to the aluminum channel of the strumming assembly using two screws and washers each.

### Step 6:

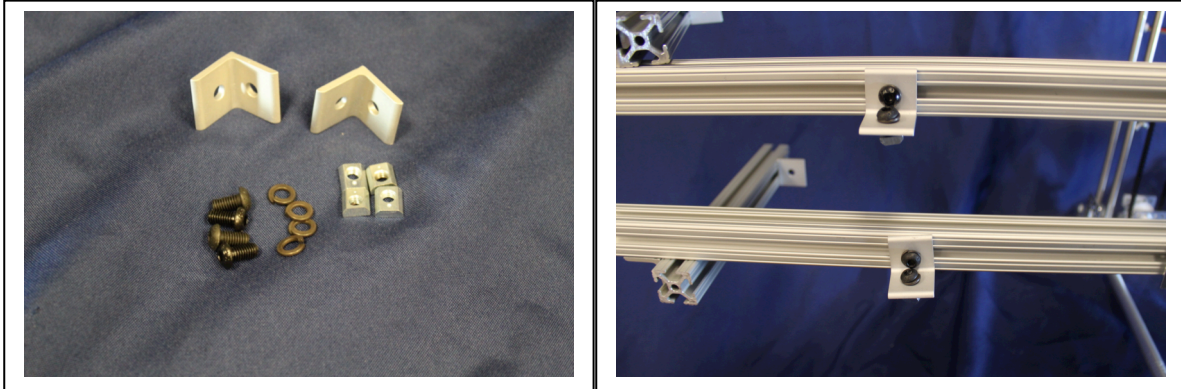


Need:

- 4x M6 12mm BHSCS
- 2x L Brackets
- 4x M6 Split Washer
- 4x 10 Series M6 Nut

Assembly each of the L brackets as you have been and slide them onto the 'bottom' of the arms. Any location is okay as it is only temporary.

## Step 7:

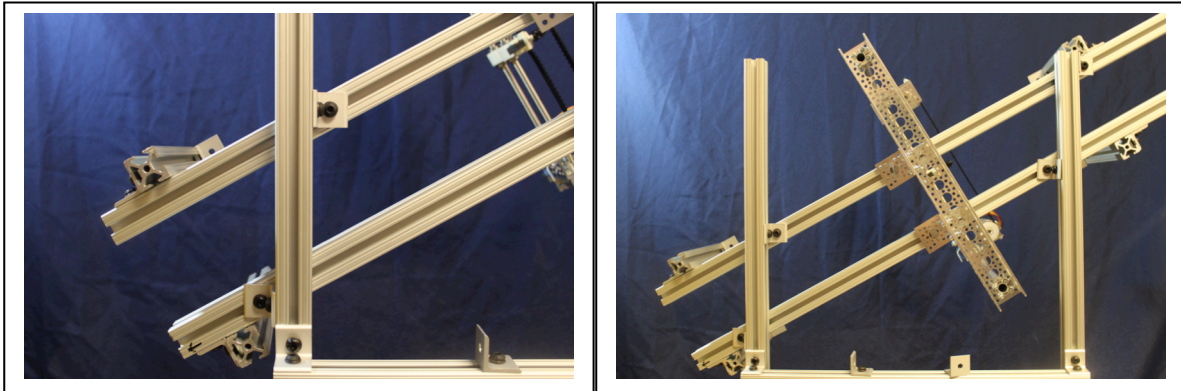


Need:

- 4x M6 12mm BHSCS
- 2x L Brackets
- 4x M6 Split Washer
- 4x 10 Series M6 Nut.

Assembly each of the L brackets as you have been and slide them onto the 'top' of the arms. Any location is okay as it is only temporary.

## Step 8:



This is where the L brackets from the last two steps come into play. With the power supplies facing you, slide the four brackets on the back of the arms so that the top bracket is on the right and the bottom L bracket is on the left of the leg. Move these brackets until you are comfortable with the angle of the guitar.

**You're all done!**

