

Leering Skeleton Motorized Prop

Included:

- OSB 7/16 18"x24"
- OSB 19/32 18"x24"
- OSB Brace
- 2x4x5-7/8" - qty 5
- 2x4x24"
- 2x4x7"
- 1/2" PVC – 8"
- 1/2" PVC – 9"
- 1/2" PVC – 2.5"
- 1/2" PVC – 17"
- 1/2" PVC – 31"
- 1/2" PVC T Union
- 1/2" PVC 45-degree elbow
- 1/2" PVC cap
- 1/4 x 2.5" Bolt
- 1/4 x 1.5" Bolt
- 1/4 Flat Washers – qty 8
- 1/4 lock nut – qty 2
- #10 flat washer – qty 2
- 3" screws – qty 12
- 1-1/4" screws – qty 6
- 1" screws – qty 6
- #8 x 3/4" wood screws – qty 6
- 7" Aluminum flat bar
- 3/4" two hole straps – qty 2
- Motor Strap
- Wiper Motor
- Power Supply with voltage control
- 1" Foam 7" x 24" – qty 2
- 1" Foam 7" x 20"
- 1" Foam 18"x24"
- Power Supply Connector Pigtail

Not Included:

- Skeleton
- Tombstone
- Lantern, or prop for skeleton to hold
- Metal Rod for Arm Support

Tools Needed:

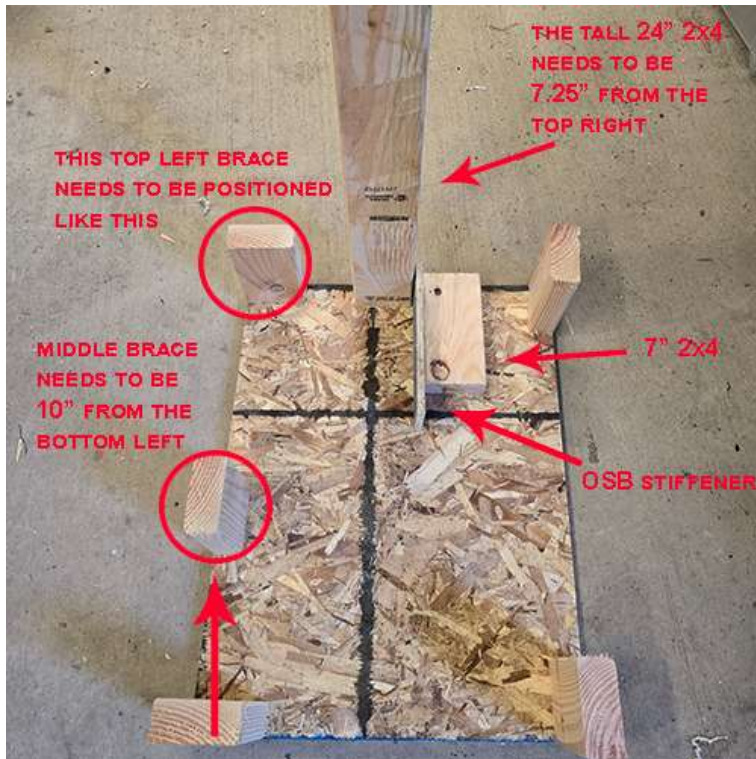
- Drill with Phillips screw bit
- 5/32" drill bit
- 7/16" Wrench
- Socket w/ 7/16" ratchet
- 36" Bar Clamps
- Measuring tape
- Open end adjustable wrench
- Small screwdriver

Instructions

Step 1:

Parts Needed for this step:

- OSB 19/32 18"x24"
- 2x4x5-7/8" - qty 5
- 2x4x24"
- 2x4x7"
- OSB Brace
- 3" screws – qty 12
- 1-1/4" screws – qty 6



The OSB 19/32 18"x24" is the base of your leaning skeleton. You will drill holes through it for each of your 2x4's. The 5 qty 2x4x5-7/8" will go in the corners, with one of them being in the middle on the left side. The circled corner piece in the top left needs to be positioned like that so the PVC doesn't hit it as it moves around. The middle 2x4x5-7/8" should be about 10" from the bottom left.

The 2x4x24" will be on the top end. It needs to be 7.25" from the top right. Measure where that will be on your base so you can drill the holes.

The OSB Brace is 3"x9". This

brace will go in between the 24" 2x4 and the 2x4x7" that lies flat on the base OSB.

Start with all the 2x4x5-7/8" braces in the corners and in the middle. Balance the OSB base on top of all of 2x4x5-7/8". Using the 5/32 drill bit, drill 2 holes where each brace is going to be. Use the gold 3" screws and secure each of the braces to the base.

While the base is upside down, drill the holes for the 2x4x24" and where the 2x4x7" will be.

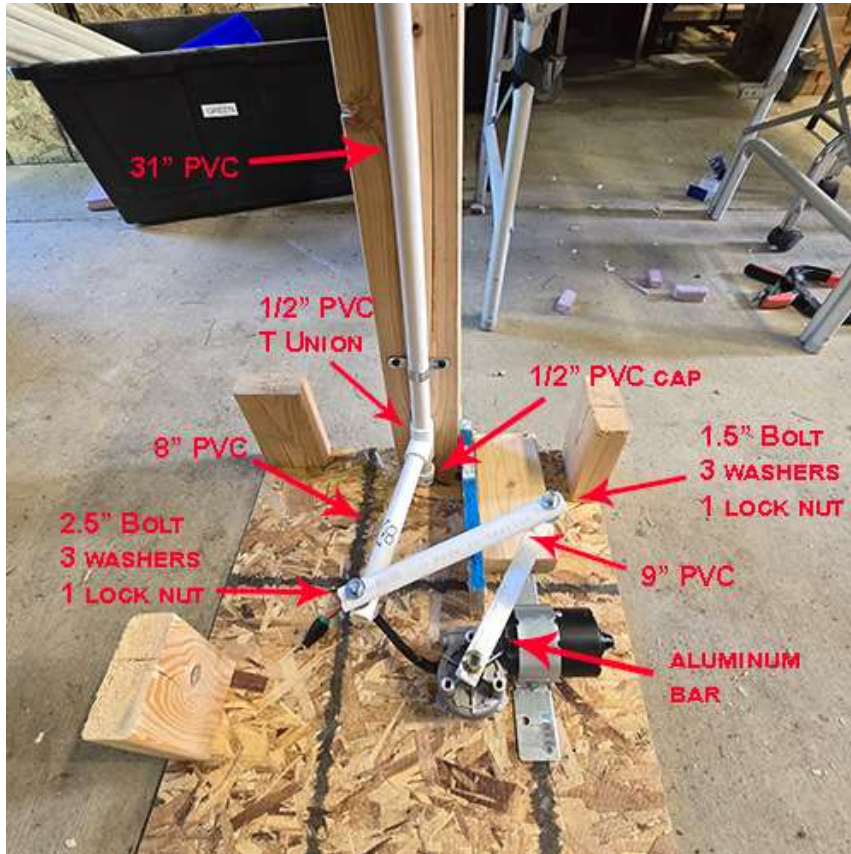
Using the gold 3" screws secure the 24" 2x4 to the base. Flip everything over and place the OSB stiffener next to the 24" 2x4. Using the 2 of the 1 1/4" screws secure the OSB stiffener to the 24" 2x4. Place the 7" 2x4 and using 2 more of the 1 1/4" screws, secure the OSB stiffener to the 7" 2x4. Flip the whole base over again and using 2 more of the 1 1/4" screws, secure the 7" 2x4 to the base.

Step 2:

Parts Needed for this step:

- ½" PVC – 8"
- ½" PVC – 9"
- ½" PVC – 2.5"
- ½" PVC – 17"
- ½" PVC – 31"
- ½" PVC T Union
- ½" PVC 45-degree elbow
- ½" PVC cap
- ¼ x 2.5" Bolt
- ¼ x 1.5" Bolt
- ¼ Flat Washers – qty 6
- ¼ lock nut
- #10 small flat washer – qty 4
- 1" screws – qty 4
- 7" Aluminum flat bar
- ¾" two hole straps – qty 2

Using the 31" PVC, 2.5" PVC assemble the upright in the following order: ½" cap on the bottom, 2.5" PVC, ½" T union, 31" PVC. Now we will secure the PVC to the 24" upright 2x4. Use the black 1" screws to secure the ¾" two hole straps, but place a #10 small washer for each screw between the ¾" strap and the 2x4 to provide a small spacer for the PVC to rotate easier.



Assemble the PVC pieces that connect to the motor with the 8" PVC inserting into the ½" T union and then connecting to the 9" PVC, use the 2.5" bolt with 3 - ¼ washers and a nut. Feed the ¼ 2.5" bolt up through the 8" PVC, with 1- ¼ washer in between the bolt and the PVC, then place another ¼ washer, followed by the 9" PVC, with another ¼ washer and followed up with the ¼ lock nut. Loosely tighten those by hand for now. At the next joint, feed the ¼ 1.5" bolt up through the aluminum bar with a ¼ washer in between the bolt and the aluminum bar, then another ¼ washer, then the 9" PVC followed by a ¼

washer and the ¼ lock nut. Then you can connect the aluminum bar to the motor with the nut that's provided with your motor. You might need to slightly bend the aluminum bar up a little bit so it connects with the PVC. Place a screw in the T union in the middle where the 8" PVC goes in to ensure it stays in the union.

Step 3:

Parts Needed for this step:

- Motor Strap
- Wiper Motor
- Power Supply with voltage control
- Barrel Power Connector
- #8 x 3/4" wood screws – qty 6



There is no exact placement for the motor so you will need to play around a little bit with the location to make sure it doesn't hit the sides. Place the motor in position and secure with two of the #8 3/4" screws, one on either side of the strap.

Attach the barrel power connector to your power supply. Using your small screwdriver, connect the green wire to the negative, and the red wire to the positive.

Now you can connect the barrel power connector to the power supply itself. Turn on the power supply to 4 Volts ~ and see how your positioning looks. If it seems to be binding anywhere, hitting any of the 2x4 braces, or it seems like it will rub against the sides when those are glued

on, you will need to adjust the positioning of the motor.

Once the positioning of your motor is where you want it so the PVC arms won't rub against the sides, you can secure it with the rest of the #8 x 3/4" screws.

Secure the power supply with 2 of the #8 x 3/4" screws wherever you would like it on the base.

Step 4:

Parts Needed for this step:

- 1" Foam 7" x 24" – qty 2
- 1" Foam 7" x 20" – qty 2
- 1" Foam 20"x25"
- OSB 7/16 18"x24"



You'll be gluing on the foam sides and the front and back. Using the gorilla glue, place a small amount on the 2x4x5 7/8" braces that are on the long edges of your base. Use your bar clamps, and an OSB scrap on the outside and clamp the 1" foam 7" x 24" on the long edges. The OSB scrap is just to help with the gluing process and should not be glued to the outside of your foam. The gorilla glue takes a couple of hours to dry. After the long edges have dried you can use your bar clamps to now glue the shorter edges on the front and the back using the same method above. Put a small amount of gorilla glue on the front and back edges of your 2x4 edges, then

put the foam on, secure those with a scrap piece of OSB and then the bar clamps. This step might be easier with a buddy helping hold pieces on as you tighten the bar clamps.

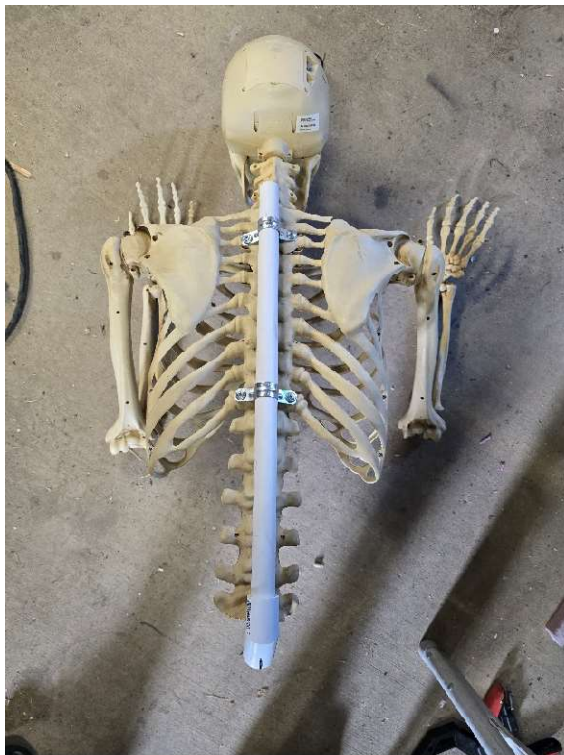
For the top pieces, the 1" foam 20"x25" and the OSB 7/16 18"x24", you can either glue those pieces together. Or if you want to modify how your tombstone is going to look you would do that part here. Because of this, I don't have any instructions on how you might do that.

Step 5:

Parts Needed for this step

- ½" PVC – 17"
- ½" PVC 45-degree elbow
- Skeleton (**NOT INCLUDED**)
- Tombstone (**NOT INCLUDED**)
- Metal Rod for Arm Support (**NOT INCLUDED**)

You will be cutting your skeleton at the pelvis. This will allow the upper portion to move independently from the lower pelvis and legs. You'll want to make sure the hole or area the PVC goes through the lower part of your skeleton is large enough to not create friction which will stop your motor from turning.



The ½" PVC 45 degree elbow and the ½" PVC 17" section will either go up through the upper part of your skeleton, or with mine, I had to just use some more of the ¾" two hole straps to attach the PVC to the back of the skeleton. The lower pelvis and legs will sit on the lower 31" PVC.

You will then figure out where the middle of your PVC rotation, so you can position the upper skeleton section to turn from side to side. You can mess with the speed to be as slow or as fast as you want without putting strain on the rest of the system.

I also decided to cut my 31" PVC down a little bit so it wasn't as tall. I felt like it was probably putting a little bit of strain on the motor with how tall it was. I was going to cut everyone else's down as well, but thought I would leave it to allow for you to decide what prop you are going to have below the skeleton.

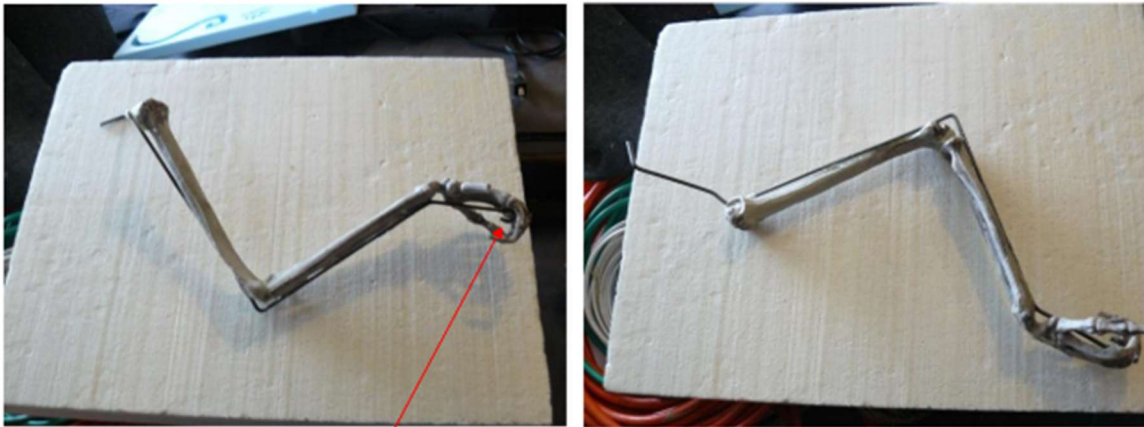
Step 6:

Parts Needed for this step

- Lantern, or prop for skeleton to hold (**NOT INCLUDED**)
- Metal Rod for Arm Support (**NOT INCLUDED**)

1/8" steel rod support for arm holding lantern.

This gives an idea of how the rod can be bent . it needs to help support the arm and weight of the lantern from the spine out. Use a heat gun to shape fingers to give a more realistic look of holding a lantern.



Hook in end of rod to hold Lantern

