

Grave Popper Instructions

PER KIT INVENTORY			
PVC connectors	number	Other	number
corner connectors	8	motor	1
3/4" cross connector	1	plywood chunk 5"x10", 3/8"	1
T connectors	2		
Misc connectors		PVC lengths (inches):	
8-32 bolts, 2"	1	5	4
8-32 washers	3	3	4
motor arm	1	1.5	2
nylock nuts	1	7.25	2
zip ties		11.5	4
1" drywall screws	4	18	1

Tools needed:

- phillips screwdriver
- drill bits – 1/8", 3/8"
- drill
- 11/32 wrench
- PVC cutters (to adjust length of popper arm)



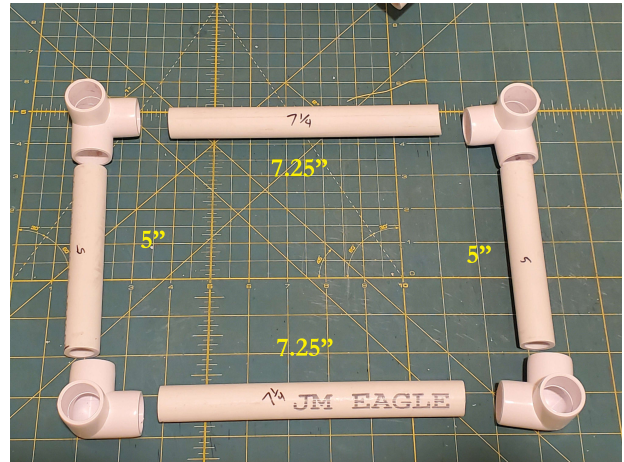
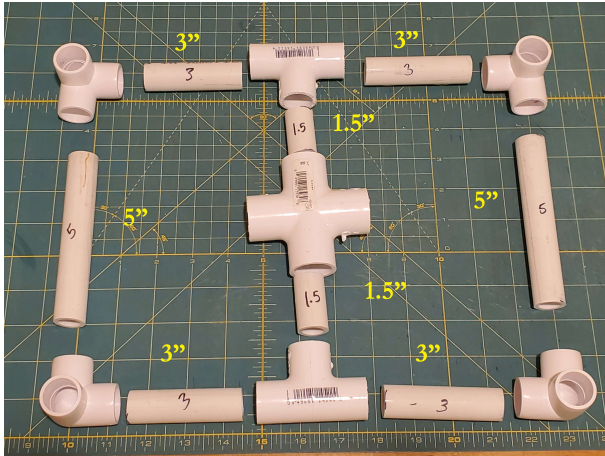
Notes:

Kindys.com has deer motors for \$13, but with shipping they are close to \$20. Amazon also has them – search for “Brite star replacement motor” – they are expensive (and it varies a lot – I’ve seen \$20-26), but arrive quickly.

You can download the file for the motor arm here. I printed it in PETG but I think PLA would probably work just fine. <https://www.printables.com/model/217936-4-deer-motor-arm>

If you want to adjust it a little, I think you can make a copy on Tinkercad and then make changes: <https://www.tinkercad.com/things/eXczu5NdH7b-petg-washers-4-popper-motor-arm>

Step 1: Assemble Frame



Step 2: Drill holes through wood to attach motor

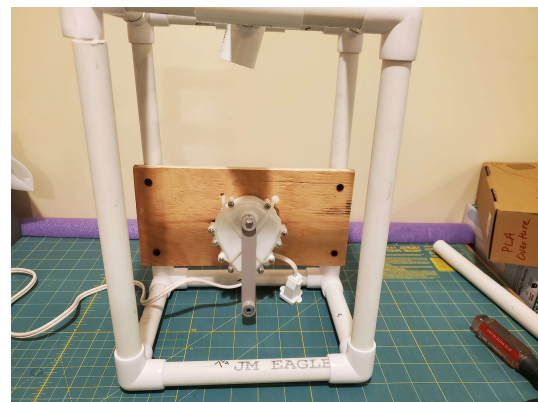
Put the motor on the board and drill 4 holes (3/8") so you can connect the motor with a zip tie “x.” You want these holes to be pretty close to the edge of the motor, not further out.

Step 3: Replace motor arm

Remove the arm that came with the motor and connect the gray motor arm using the set screw that comes with the motor.

Step 4: Connect wood to the vertical PVC pipes with 1” drywall screws.

Pilot holes are helpful. Be sure that the motor arm will not hit the ground as it moves through its lowest position.



Step 5: Zip tie the motor to the board. Get it nice and tight.

Step 5: Drill a 3/16” hole near the end of the 18” PVC pipe to connect it to the motor arm.

Step 6: Connect the motor arm to the 18” PVC pipe with the 8-32 bolt.

First, slide the pipe through the PVC cross connector that will be the pivot point. Then attach the PVC to the motor arm as shown. Put washers between the motor arm and the bolt, the motor arm and the PVC pipe, and between the pipe and the nylock nut.

Step 7: Power it up!

The cord sometimes gets in the way of the mechanism, so zip tie it to the PVC somewhere to keep it out of the way.