PVC PRESSURE TRIP MINE PLANS METHOD 1

Materials needed (available at a hardware store):

- 2½" PVC end cap (this is the lower base of the mine)
- 1 2½" PVC threaded adapter (this is the middle of the mine)
- 1 2½" PVC cap (this will be the top)
- 1 ½" reducer bushing (think that is what it is called, just no hole in the middle)
- 1 ¾" wide 2" long PVC irrigation connector
- 1 threaded screw
- PVC cement

Directions:

1. Put a lot of PVC cement on the threaded adapter and push it into the end cap it should push pretty far then get stuck, use a mallet and a piece of wood to hammer it farther into place. You want the two as close together (sealed) as possible, set that aside and let it dry.

2. Grab your irrigation connector (should be about 1 1/2" long, cut to that if needed) take your drill or Dremel and put a bunch of small holes about a 1/4" from one end. Make a lot of holes but not enough for it to collapse. This "tube" will be your CO2 loading tube, the holes will allow the air to release once the CO2 is "triggered" You will noticed in the picture below, I used the top of a lid from a small prescription bottle as the mounting surface for the tube. This makes the base stable as is easier to connect to the inside of the end cap. Use hot glue to connect this cap to the tube and also to the inside (dead center) of the PVC end cap.

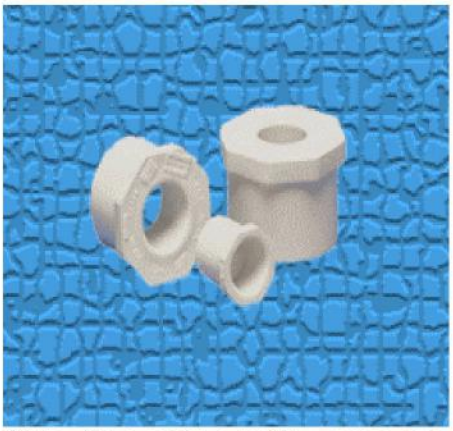
3. Next you will want to create your cap. Drill a 3/4 inch hole in the very top of the end cap. This is where your "trigger" will be, you will need to widen it a bit later to fit the reducer bushing with a Dremel thou.

4. Now create the holes for your paint to come out of the cap. Pretty much you can use anywhere from 4 to 8 holes...your choice. As you can see I have 8.

5. By now the PVC cement should be dry on your "base" unit. Turn it over and drill a threaded screw into the bottom of the base. This is your "firing pin" which will puncture the CO2 canister. Test the depth and position of your firing pin with an EMPTY 12g CO2 (set it on the firing pin and screw the cap on. Look through the hole - the top of the CO2 should be about 1/4" from the top. Once you have found the correct location, cut the bottom of the screw off.

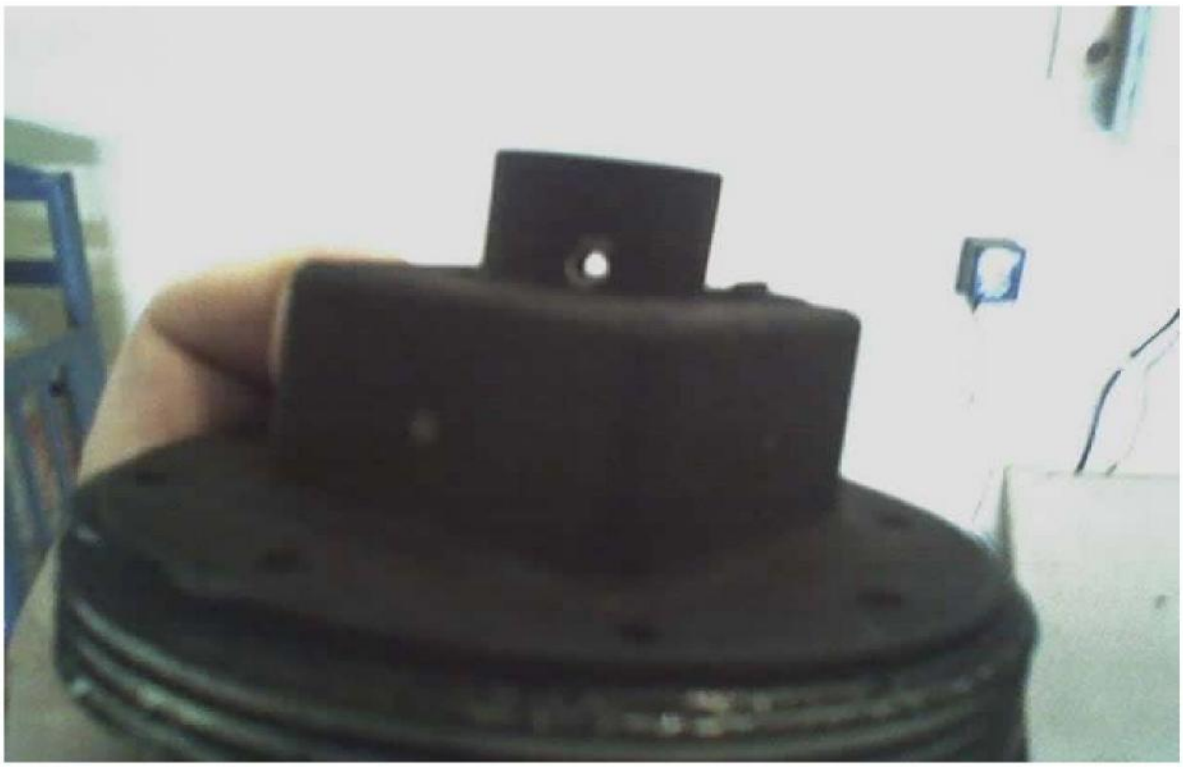
I would now recommend painting the body of your mine. You do not have too since it will be in the ground...but it's original.

6. Next and most important, you must fit the reducer bushing into the hole you drilled. Slowly expand the hole until the bushing fits, without to much space around it. I would recommend using a bushing that has a bottom like this:



This will create a safety once the mine is triggered to ensure that ONLY paint/water escapes this mine. If you do not use a bushing like this, once the mine is triggered, the force of the expending CO2 will shove the "trigger" and the CO2 canister about 45' into the air at a VERY fast rate. I know this from experience, I tested it. **Do not be stupid**, use a cap like this and be safe.

7. Last but not least, you can add a pull pin to your mine. This will allow you to safely transport, plant and "arm" your mine. Please see the pics below for the pull pin and the finished project.

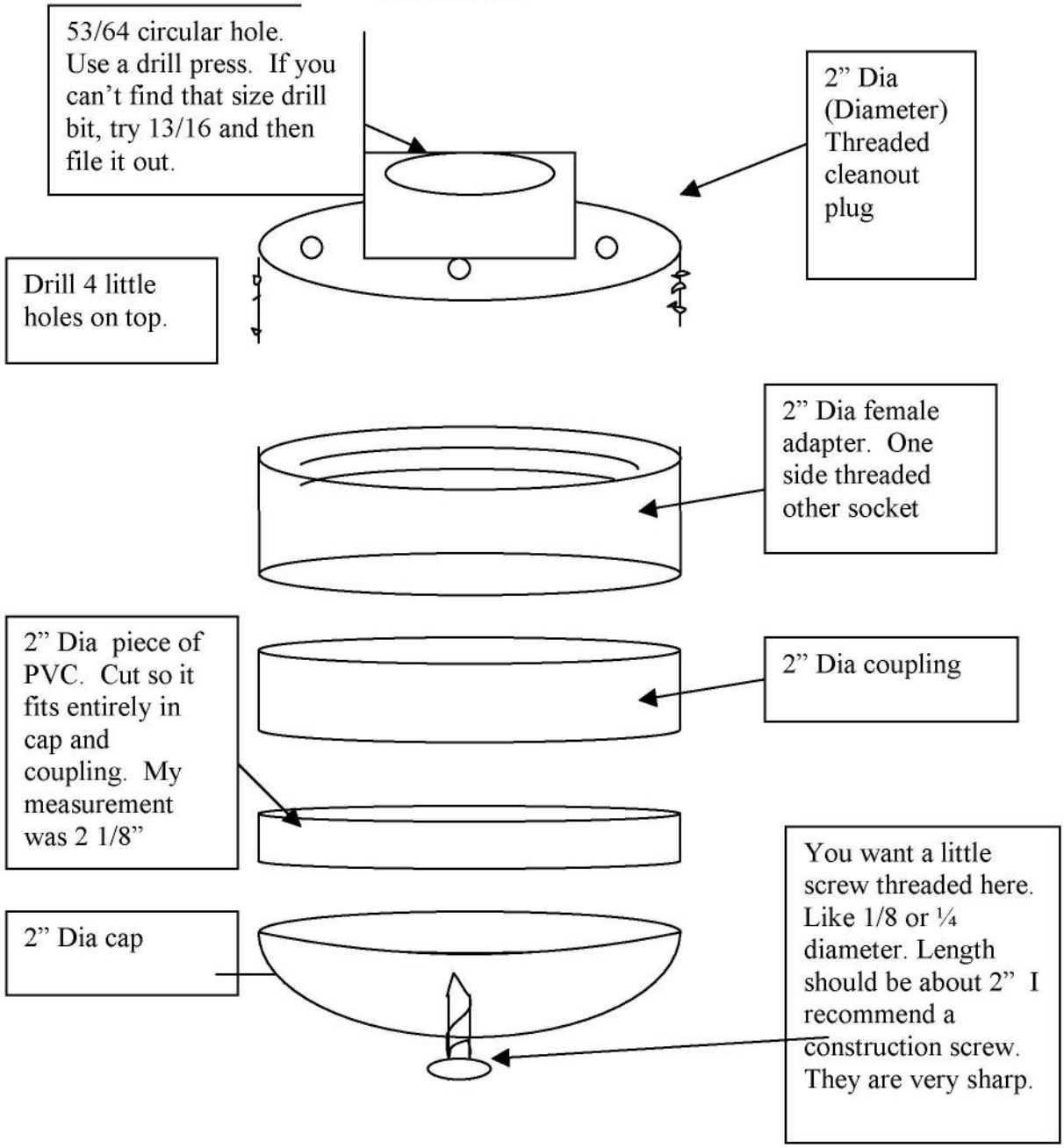


I have used and played with these mines about 30 times now. It is very fun, and I have also yet to find a field or scenario producer that will not let me use them once I have explained how it works and the safety features built in.

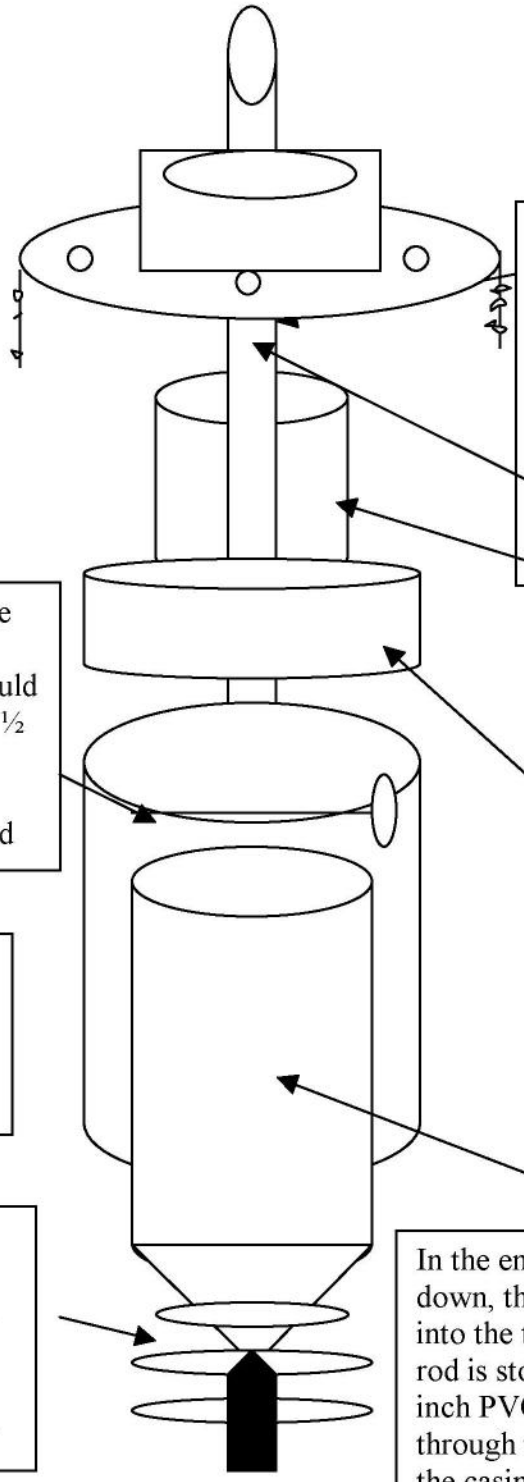
PVC PRESSURE TRIP MINE PLANS METHOD 2

Here are the diagrams there are pictures for reference at the bottom of the page, don't hurt yourself. Glue all parts except the cleanout plug together and for your own sake, let it dry before using.

Exterior



Interior



½ inch dowel rod with a little tape around it to make it a little more snug, but still able to slide easily. Goes through the hole and the 1/2 inch and a tiny bit of ¾ PVC

½ interior PVC should fit snugly in the 53/64 hole. About 5 millimeters should stick out of the top. It should be around 1 ¾ inches long

Nail going through the dowel rod as a safety mechanism. Nail should be a little longer than ½ inch so it stops the dowel rod and CO2 when mine is triggered

½ X ¾ bushing.

¾ PVC. It's about 2 ¾ inches long. It should go an inch or two from the bottom cap.

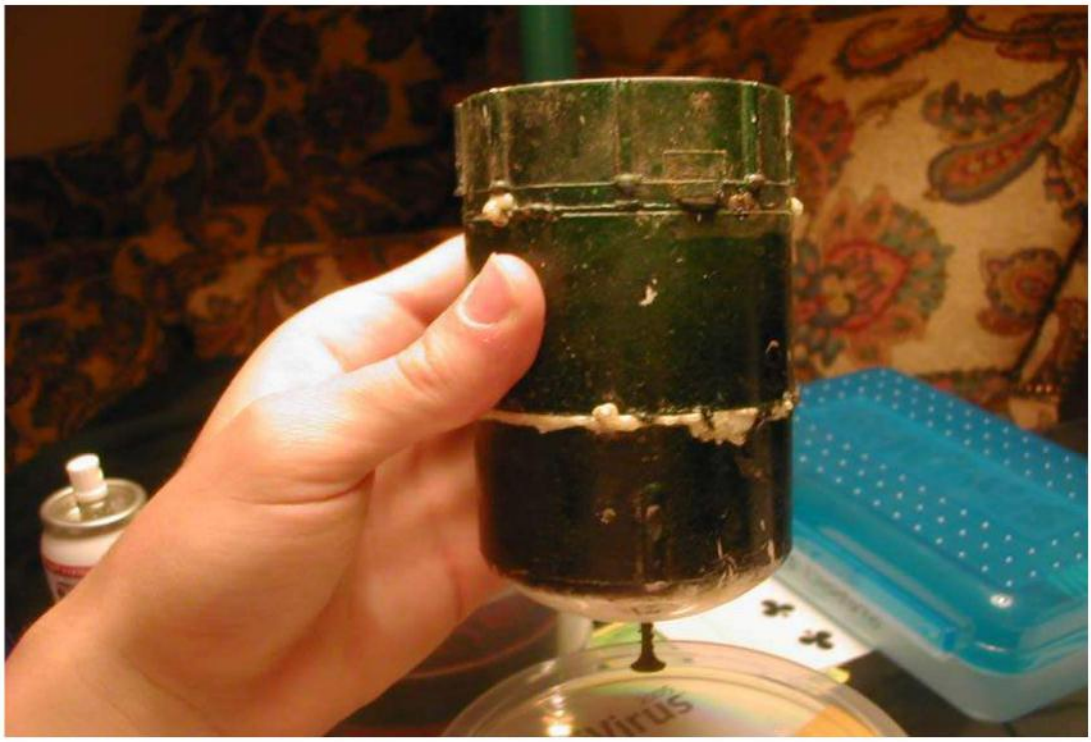
12 gram CO2, which gets punctured by construction screw.

Stabilizing spring with is narrow on top and wide on the bottom. It sits freely at the bottom over the screw. I'll eventually sell them after I order the exact kind.

In the end, the dowel rod is pushed down, the 12 gram goes off, shoots up into the top of the ½ PVC. The dowel rod is stopped when the nail hits the ½ inch PVC. Air rushes through and out through the holes pushing anything in the casing out with it.

Reference Pictures

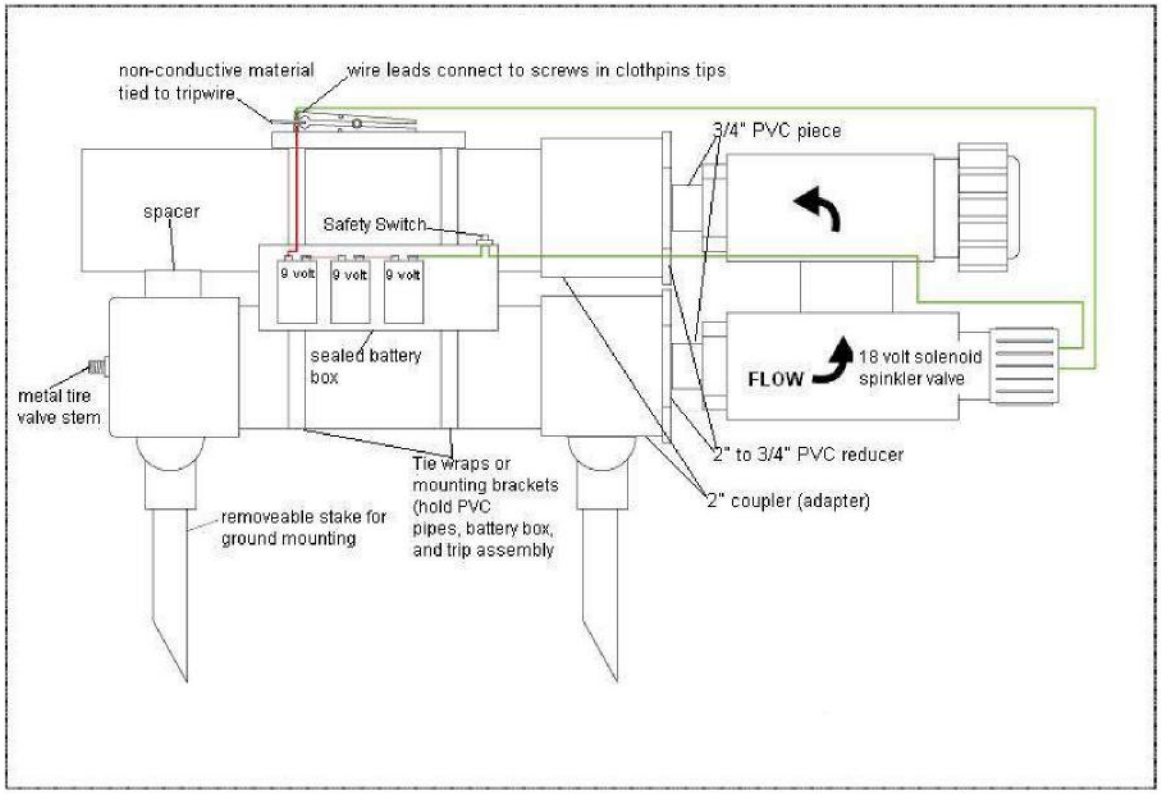
AirCannonPlans.Com



TRIPWIRE MINE

Materials:

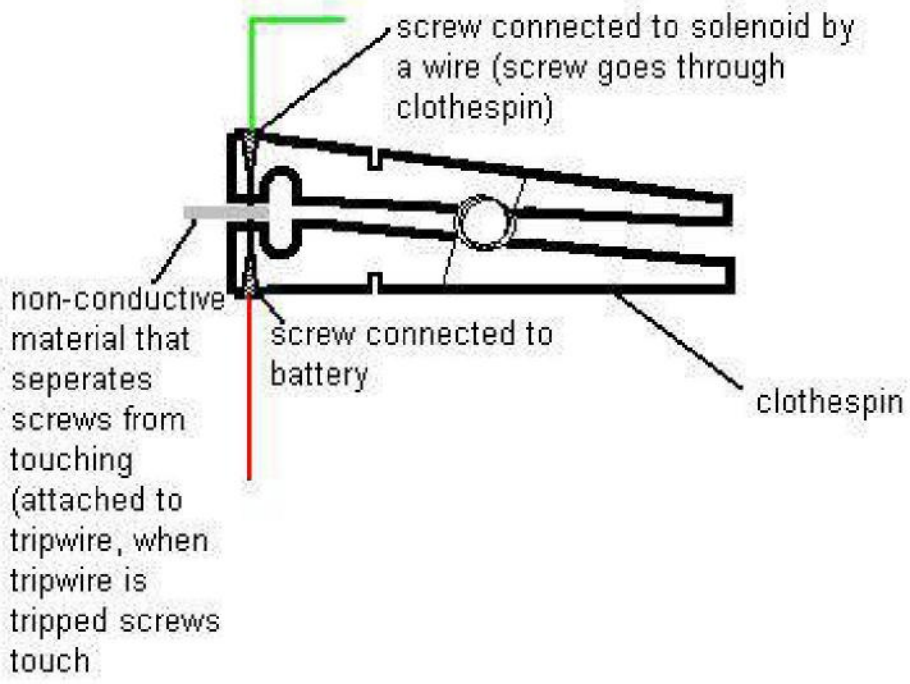
- 1 clothespin
- wire
- 3 9 volt batteries
- 1 ¾" 18volt rainbird solenoid sprinkler valve
- 2 pieces ¾" PVC pipe
- 2 2" to ¾" threaded PVC reducers
- 2 2" PVC couplers
- piece of 2" PVC piping
- tie wraps or metal o-clamps
- 2 position switch
- metal tire valve
- 2 stakes (for ground mounting)
- 2" PVC end cap
- piece of non-conductive material
- trip wire
- PVC glue



Directions:
I'm not going to go into great detail about how to build this device because I have labeled the above diagram with all of the parts and it should be fairly straight forward. Just make sure to glue all joints except for the threaded ones.

Also make sure to test for leaks by slowly adding air pressure and allowing it to sit and checking if the same pressure is present. I would suggest filling the pressure tank to 100psi, but you might want to experiment for yourself to find a good amount of pressure.

The diagram below is a closer view of how the trip mechanism works to trigger the solenoid. When someone hits the trip wire the non-conductive material is pulled out and the two contacts touch providing a path to ground and therefore triggering the solenoid. The sprinkler valve opens and paint is sprayed in the direction in which it is pointed.



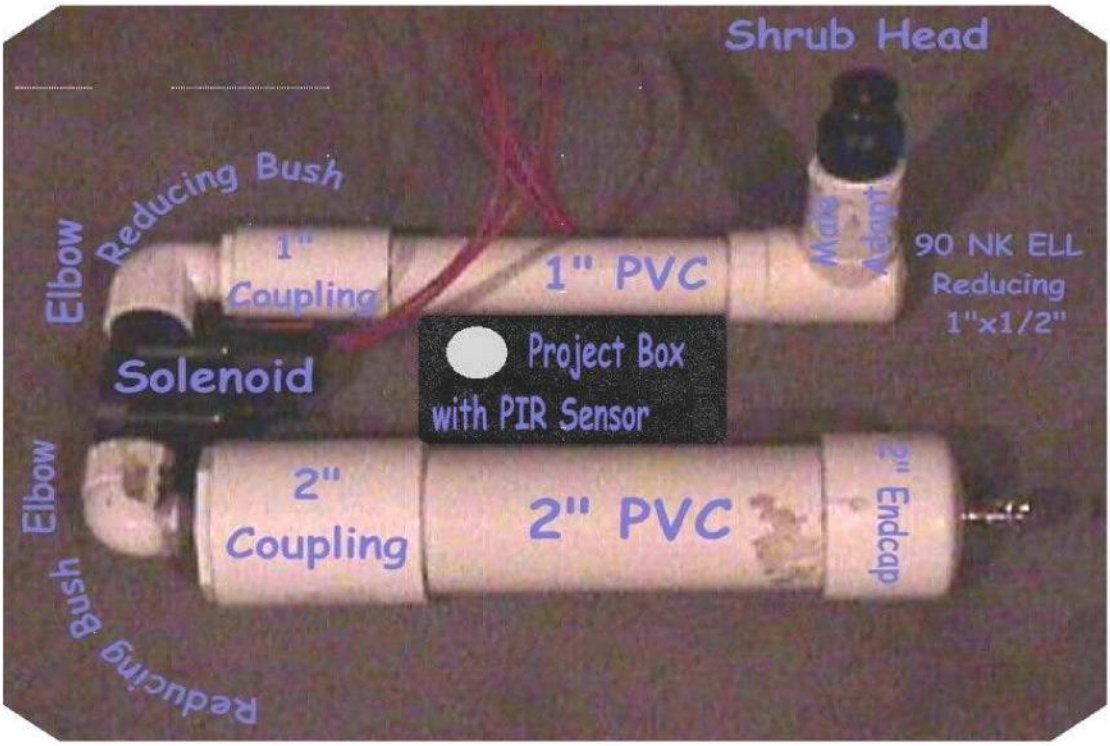
PROXIMITY MINE

Materials Needed: (All of these materials can be bought at Eagle Home and Garden and/or Ace Hardware or any other plumbing store)

- 1 PVC Cap 2"
- 1 PVC Reducing Bush 2"x ¾"
- 1 PVC Coupling 2"
- 1 PVC Street Ell ¾"
- 1 ¾" Automatic Sprinkler Valve with both male connectors
- 1 PVC Reducing Bush 1"x ¾"
- 1 PVC Coupling 1"
- 1 PVC 90 NK Ell Reducing 1"x ½"
- 1 PVC Male adapter ½"
- 1 2"x8" Class 200 PVC Pipe
- 1 1"x8" Class 200 PVC Pipe
- 1 ½"x4" Class 200 PVC Pipe
- 1 Shrub Head Sprinkler (Rain Bird)
- 1 Tire Stem Valve
- 1 Clear PVC Cement

Directions:

1. Assemble all the parts together just like in picture below. Note: The ½" pipe holds the male adapter and the reducer together. Also, **make sure** you get the direction of the solenoid right! The arrow on the solenoid should be pointed towards the sprinkler part of the mine. And if you don't like the pattern or spray of the sprinkler head, try some different ones, you don't even have to use a sprinkler head if you don't want to! The tire stem valve is mounted on the 2" end cap, which allows are to be pumped into the air tank.



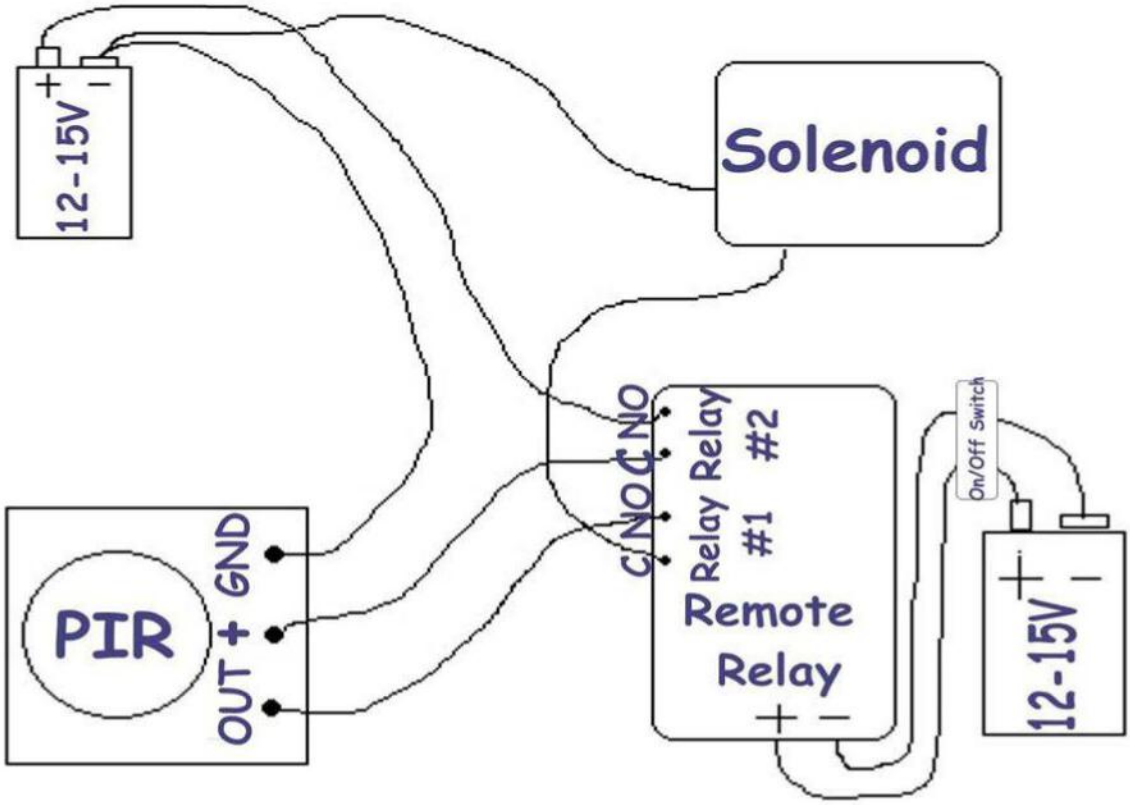
Building the remote activator:

Materials:

- 2 Channel Remote Control Relay Kit Part#6082-KT(Can also order extra remotes: Part#8974-MI)
- PIR Motion Detector Module Part.#7860-KT
- 1 Project Box (Available at Radio Shack)

Go to www.mpja.com to order relay and motion detector or call 800-652-6733. Note: The remote control relay is only a kit, you need to fully assemble it before you can make the mine work!

To put together the electronics just follow the diagram below. If you want to control the sensitivity, you can put a potentiometer between the positive side of the sensor and the battery. You can also add a super bright LED to relay#1 so you know when the mine is not activated. Once everything is put together, you can go ahead and place it into the project box with the switch, PIR sensor, and antenna glued on the outside. Make sure it's water-resistant by just sealing it with super glue because it will get wet! The box is what's holding the mine together so make sure it's very stable and secure to both sides.



Filling the mine:

To fill up the tank you can either use a bike pump, scuba tank, or my favorite; it's a little handheld filler that allows you to insert a Co2 cartridge and fill up your tank. It is made especially for bike tires, so you can find them at any local bike shop. Also, be sure you only fill it up to **100psi**. And nothing over! It can be very dangerous to fill it up with too much pressure. Once you are done filling it, you can unscrew the sprinkler head on the other side. You can make your own paint just by mixing some vegetable oil with some non-staining coloring. You don't have to fill it up all the way. Once done, just screw the sprinkler head back on, and place the mine wherever you want it.

Using the mine:

To activate the mine, you **must** leave the second relay **on for at least a minute.** Not doing this will make the mine go crazy and spray paint all over the place just when you don't want it to! To activate the second relay, just press button #1 on your remote. When you want the mine to really activate, press down button #2 on your remote, making sure you're at least 10ft. away before doing this!