

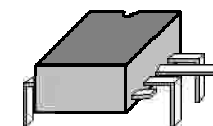
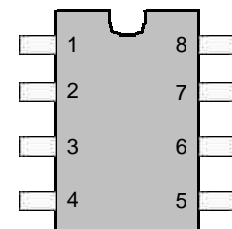
Caution: Magnetos are hot when the timer is in use. The prop could start at any time. Use of this plan is waiver of any and all liability of any form. Use at your own risk.

Instructions:

- 1) Make one photocopy of the schematic section of the plan (this is permissible, because you are going to destroy it).
- 2) Cut out the 3 1/4" plywood circle. Glue behind the circle on schematic you copied. Elmer's "Glue All" is a good glue for this.
- 3) Looking off the original colored diagram, nail a 3/4" copper brad 1/4" into the wood at every + symbol. The brads should be sticking 1/2" into the air.
- 4) Attach the green, red, and black wires to the brads by wrapping the ends around the base of the nails. Color is not important. Use the lightest gauge of insulated wire that you can find for all of the lines except for the three leads to the alligator clips. The leads to the alligator clips should be about 2 feet long and made of heavy enough wire that it will not break during rough handling.
- 5) Solder each of the connections that you just made.
- 6) Solder the resistors, capacitors, and zener diodes to the heads of the brads.
- 7) Identify which pin is which on the 55 timer chip. Use the diagram provided. Most chips will have a notch on the 1,8 pin end. Some will have a small circle on the 1/8 pin end. Bend legs 2 and 7 of the 555 timer chip straight. Break off legs 4 and 5 - they will not be used. Solder legs 1, 8, 3, and 5 to the brads as shown. Solder the two green wires to legs 2 and 7. These legs are not physically attached to the base.
- 8) Solder the red and black wires to the LED's. Each LED has a long leg and a short leg. The red wires go to the long leg.
- 9) Prepare the pipe cap housing by sanding off the molded details on the outside end. Drill the holes in the face as shown, and drill the 3/16" hole for the leads to come out. Drill the three 1/8" holes around the perimeter of the base for mounting the cap to the plywood. Paint the cap as desired (use a prime coat and a final coat).
- 10) Knot the three leads near the plywood base. This will prevent them from tearing loose in operation. Thread them through the hole in the pipe cap.
- 11) Attach the power switch to the pipe cap, and solder the wires onto it.
- 12) Attach the 9 volt battery to the base by fabricating a small sheet metal piece to go over the top, and screwing it down on both sides.
- 13) Attach the three alligator clips to the leads.
- 14) Carefully, push the three LED's into the holes on the pipe cap. Fold the bear legs up near the top of the cap where they will not short out onto other components. Use a drop of clear glue to hold the LED's in place if necessary.
- 15) Test the operation of the Magneto timer at this point, and trouble shoot if needed. It should be a working unit.
- 16) Gently, push the pipe cap over the plywood base. Leave approximately 1/4" of the plywood showing. Make sure that the wires are arranged inside so that nothing will short out. Test the timer again, and then screw the cap in place through the 3 holes on the base.

555 timer Details...

Dot on Upper
end of Chip



Legs 2,
7 bent up
Legs 4,
5 removed

Hardware List:

- 1 pc 3/4" plywood - 3 1/4" circle.
- 1 pc 3" PVC thinwall Pipe Cap
- 5 small wood screws
- 3/4" copper brads
- 1 pc small metal strip for battery clip.

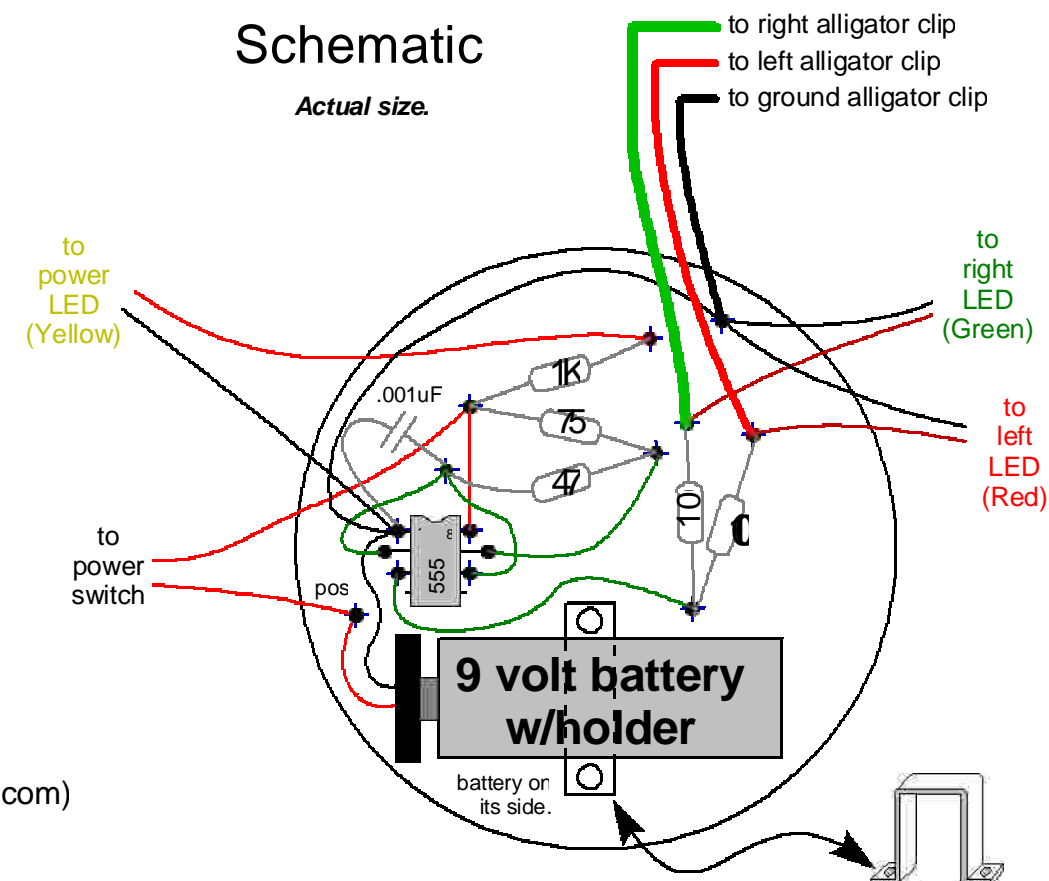
Electronics (from Radio Shack, mouser.com)

- 1 pc 9 volt battery plug with leads
- 1 pc 555 timer chip
- 1 pc ceramic capacitor, 0.001uF
- 1 pc resistor - 1/4 watt - 1K Ohms
- 1 pc resistor - 1/4 watt - 75 Ohms
- 1 pc resistor - 1/4 watt - 47 Ohms
- 2 pcs resistors - 1/4 watt - 100 Ohms
- 3 pcs LED's. Prefer red, green, yellow.
- 1 pc power switch. Any will do.
- 3 pcs alligator clips.
- Misc wire. Prefer thin gauge red, green, and black, and medium gauge red, green, and black.

Using the timer. The mags must be hot for the timer to work. Connect the red and green leads to the P-leads on the back of the mags, and the black to a good ground. Carefully rotate the engine backwards from beyond TDC until the lights go off, then carefully move the prop forwards until they come on. Adjust the mags until they both come on exactly at the right spot. Caution - if you fire the impulse coupling, you may have to replace parts of your timer (probably LED's).

Schematic

Actual size.



Case Details

Not actual size.
No fixed position.

