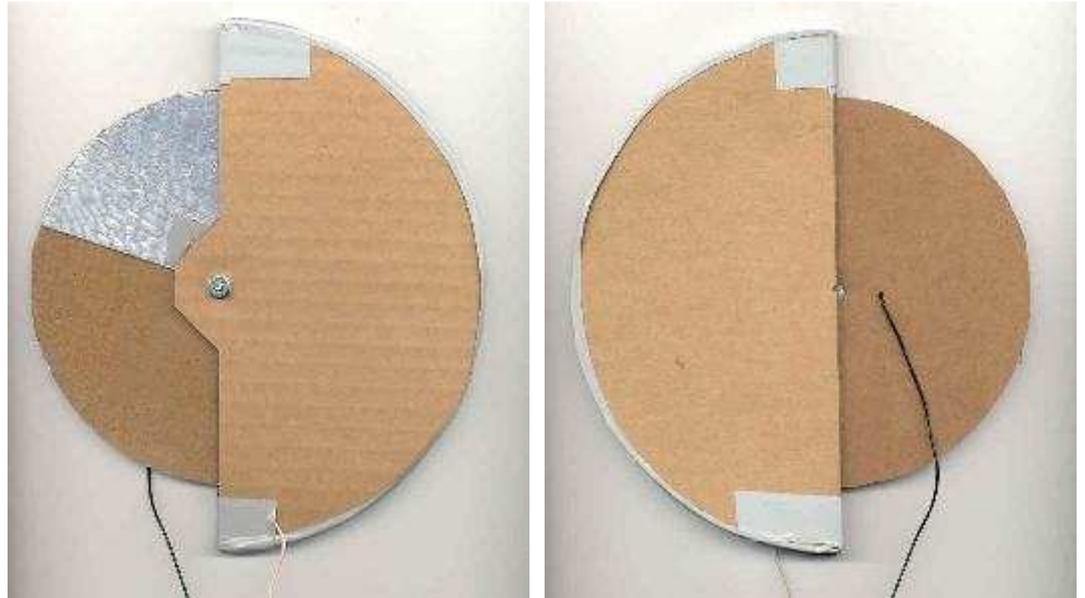


The Cardboard Variable Capacitor Homemade or "Homebrewed"



The "Cardboard" Variable Capacitor as built in this article will yield a cap in the range of about 300 pF Max. Increasing it to 7" will get well up to 370 pF.

It is build of readily available material found around the house (some at the hardware store).

Materials needed:

2 pieces of cardboard 8" or more square

1 piece of cardboard 6 or more square.

A small amount of aluminum foil

2 short pieces of 22 to 26 gauge stranded wire about 8" or more.

A small amount of electrical tape, but just about any kind of tape will work.

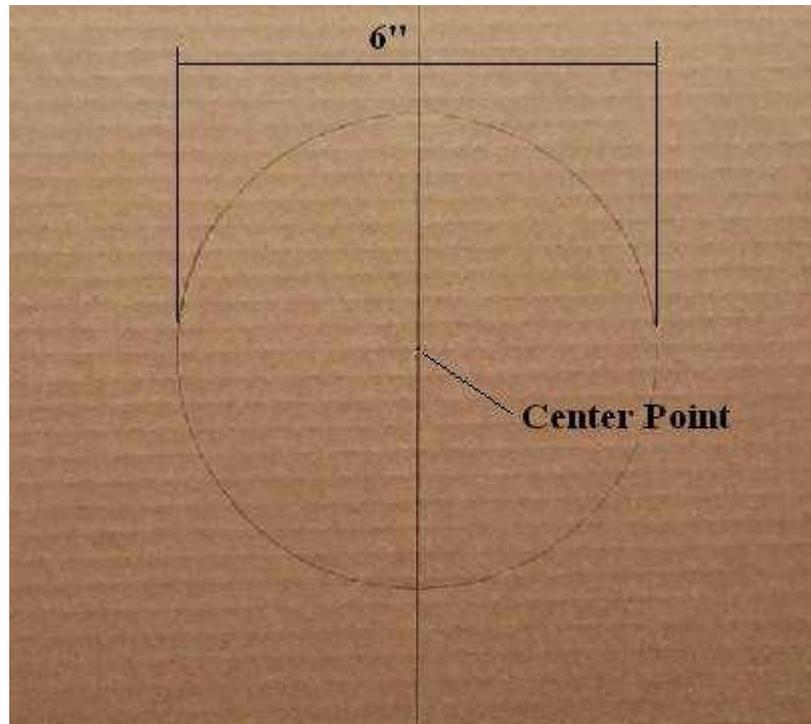
1 6-32 flat head machine screw about 3/8 " long with a nut.

1 clear page protector 8 1/2" x 11" size. These are used to put a piece of paper in to protect it and it goes into a 3 ring binder.

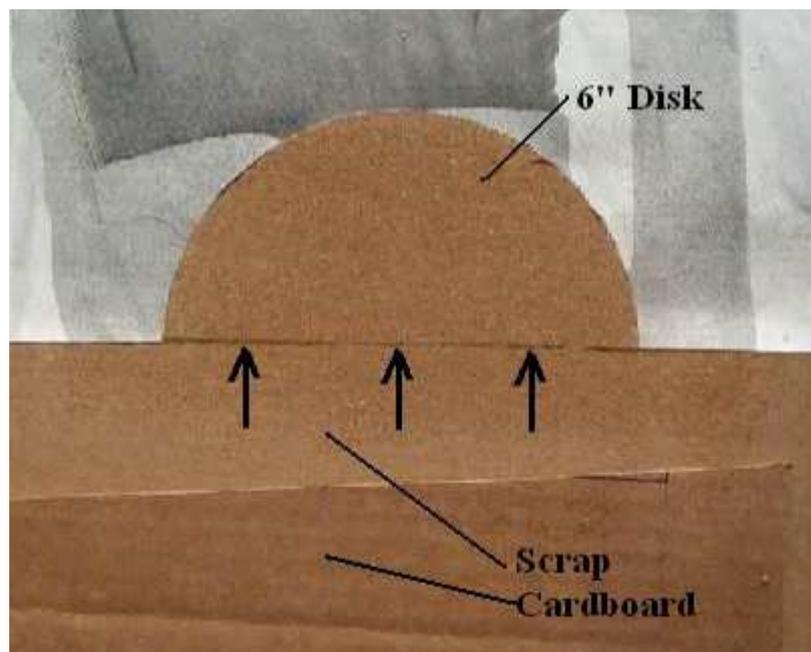
One can of spray contact adhesive. You can also use brush on contact adhesive.

"The Rotor"

We will make the roto (moving section) first.



Lay out one of the 8" square (or larger) pieces of cardboard (with a compass) with a 6" diameter circle and draw a line down the center . Poke a small hole in the center. Cut out the 6" circle.



Cover half of the circle of cardboard up with scrap paper or old cardboard. Spray on some "spray adhesive" on the exposed half that is not covered. You can also use "brushed on" contact cement if you like.

Cover half of the circle of cardboard up with scrap paper or old cardboard. Spray on some "spray adhesive" on the exposed half that is not covered. You can also use "brushed on " contact cement if you like.



Stick on some aluminum foil on the adhesive sprayed side. Working from one edge to the other and slowly working out any wrinkles as you go.

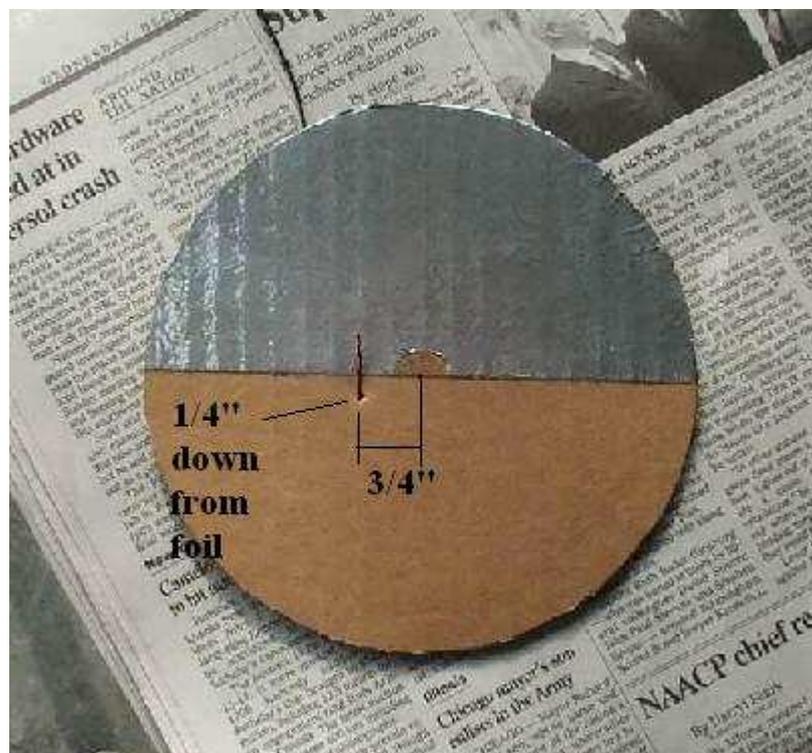


Flip it over and cut off the excess foil with a single edged razor blade. Until it looks like the photo below.





Excess foil removed. Also cut away foil 3/8" around center hole.



Poke a hole 3/4" from center point and about 1/4" off the foil and pull a wire through with the end of the wire "stripped" (insulation removed). Just like in the photo above.



Place a piece of electrical tap (or whatever you have) on the wire to hold it down on the aluminum foil.



Next we will use the "page protector". Cut it into two separate sheets 8 1/2" x

11





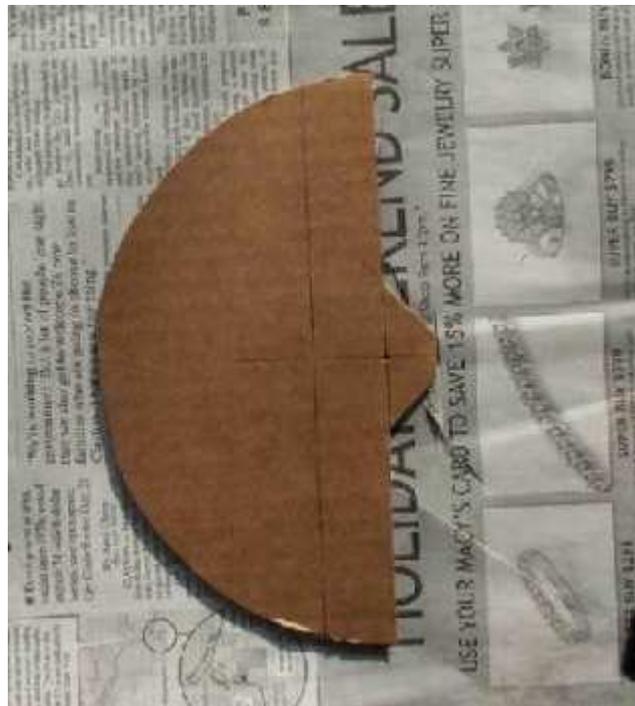
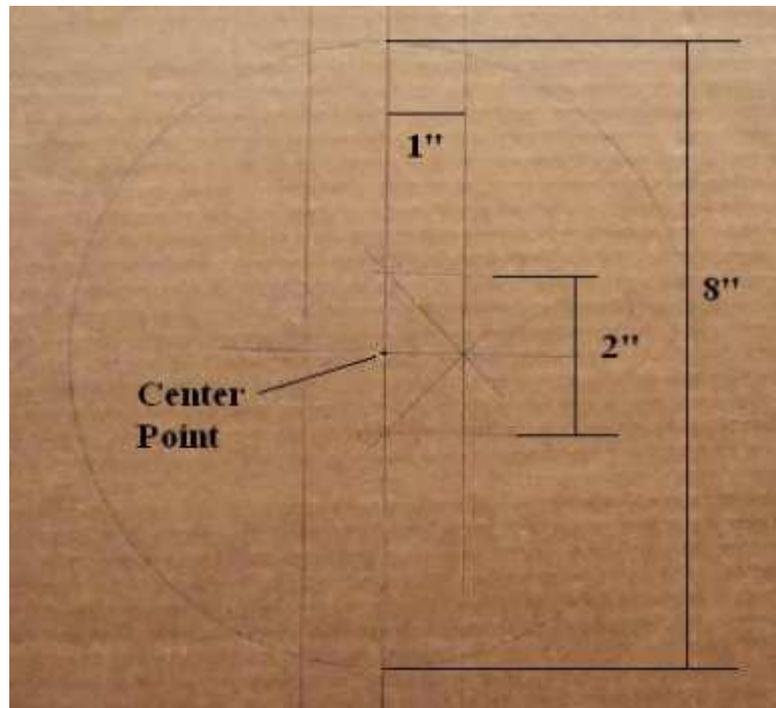
On the side of the circle that has the aluminum on it (1/2alum., 1/2 cardboard), apply a coat of "spray adhesive" to the entire surface and stick on the "sheet protector" after the adhesive dries just a little. After it dries a little more, remove the excess plastic with a razor blade just like the aluminum earlier. This "electrically isolates" the foil.

Set the roto aside for now



The "Stator"

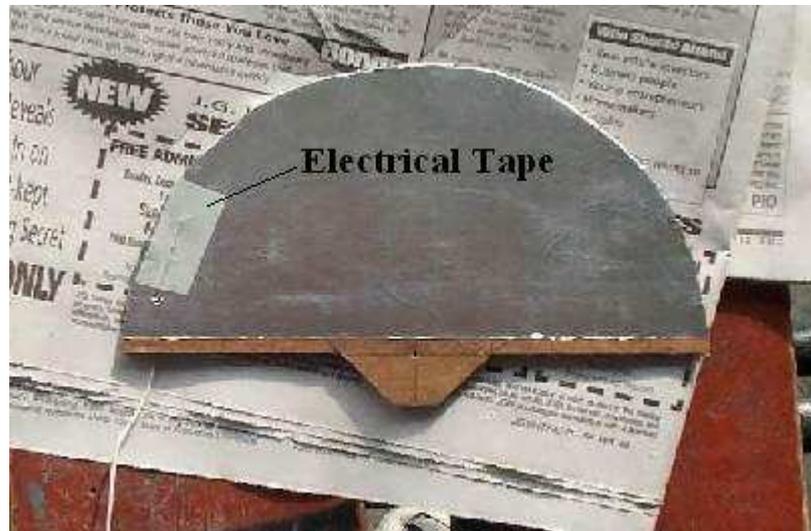
Now for the stator (non moving section).



Layout the last piece of cardboard like the photo on the left. Cut it out with a razor knife. When done it should look like the photo on the right. I clipped the "point" off near the center, but it is not mandatory.



Spray the entire side with adhesive and apply foil about 1/4" away from the edge like the photo above. Poke a hole about 3/8" off edge of radius side and about 3/4" off straight side and poke a wire through that has been stripped back about 3/4" of insulation.



Like before, take a piece of electrical tape and hold the bare wire down to the foil.



Spray adhesive on foil side and stick on the other half of the sheet protector (clear plastic) on. Trim off the excess with a razor blade.





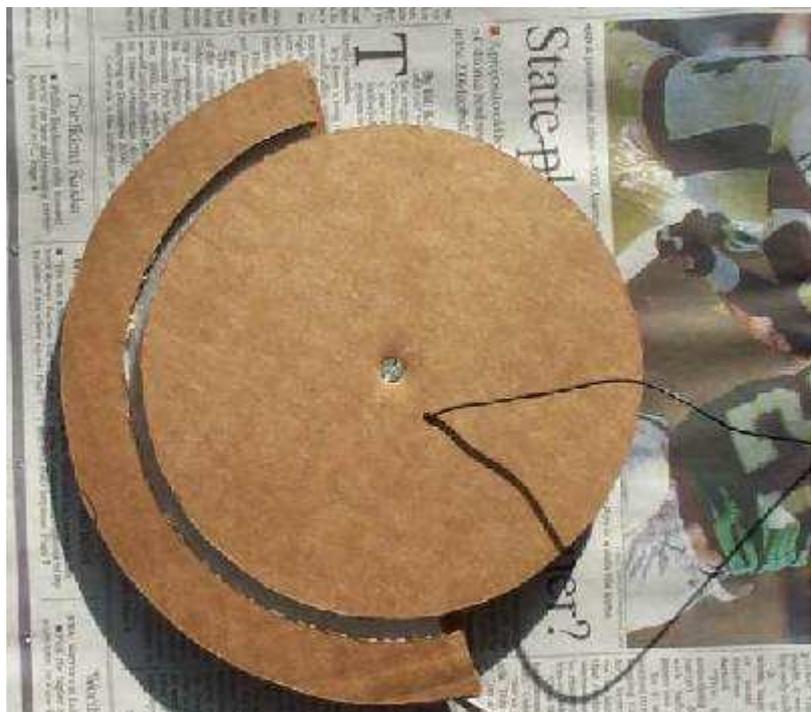
Now take this section and spray adhesive on one side only.



Stick it onto the the section we just made (stator).



Assembly of the project



the "Stators" center hole so it looks like the photo above.

Flip it over



Secure it with the nut so there is a little resistance when the rotor is turned, but not to much!





On the surface of the "C" shaped cardboard (see photo on left), I used hot melt glue, but you can also use white glue or brush on contact cement to the surface. I then placed the "D" shaped cardboard on it and taped it on to help hold it on.

This entire "C" and "D" shaped pieces only serve to help push the rotor evenly to the stator section. This give you a more smooth increase or decrease in capacitance as you turn the rotor.



Complete and ready to use!

The clear page protectors serve to keep the two foil section from coming into electrical contact with each other.

As the two foil section grow closer to each other, the capacitance grows. As

each other or separated sort of like a book. the capacitance grew or decreased.

Enjoy!!