

Magna Spin Light Up UFO – Part 1, The Top

Richard J. Nelson

The Magna spin top, shown in figure one, sits on a base which is not shown. You hold the knob on the top and give it a small twirl. The electronics in the base and the magnet in the top will provide enough energy to keep the top rotating and centered.

The purpose of the top is to provide a nice looking visual presentation of red, blue, and yellow lights that are electronically controlled to produce 64 different patterns.

This photo essay will provide an inside view of the top.

The LEDs in the top (the base also has LED lights) are powered by three button cells that are secured under the center knob.

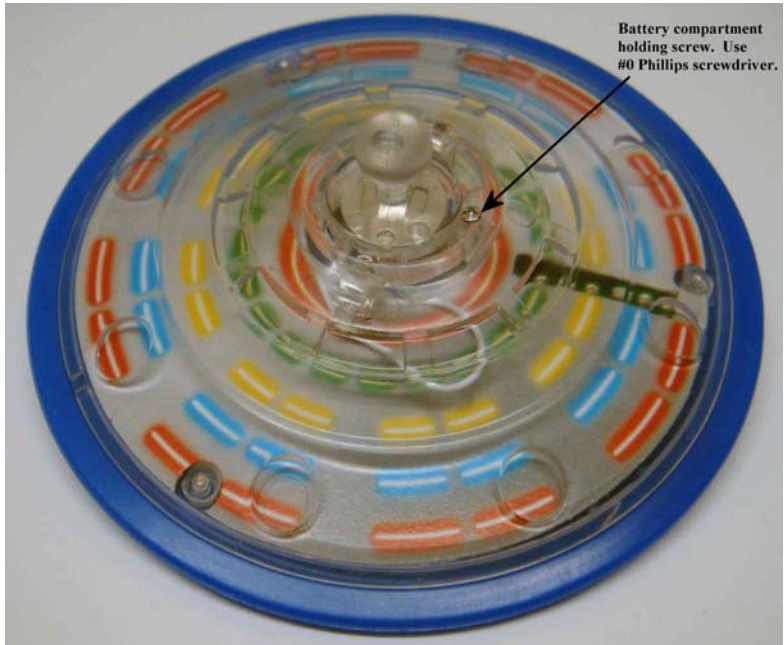


Fig. 1 – Overview of LED lighted spinning top sans base.

The batteries are changed by removing the knob set screw as indicated in figures one and three. Figure three shows where the set screw has cut into the knob flange. This prevents it from turning. The knob seems strangely designed as if it was, at one time, intended to also be an off/on switch as well. The single white wire provides the positive 4.5 volt connection to the electronics. Note that the battery + terminals of the three cells are up as shown in figure two.

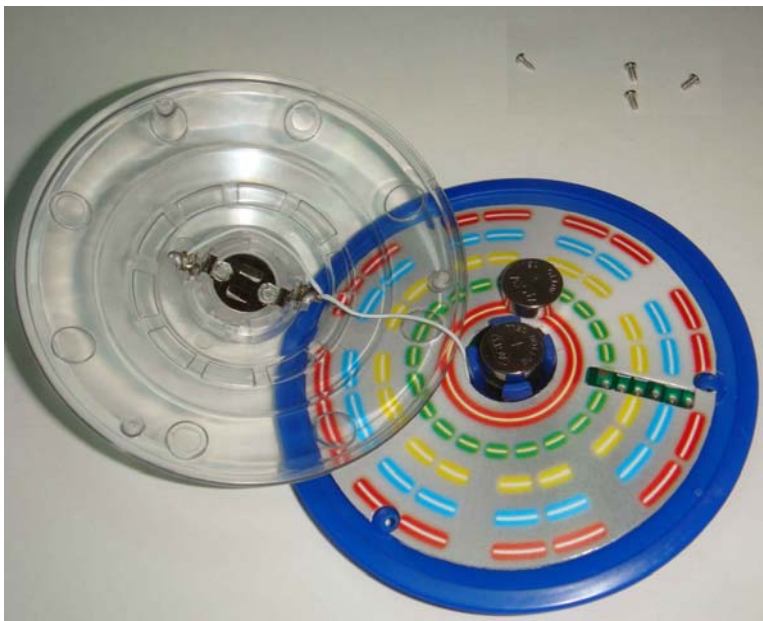


Fig. 2 – Top turned over by removing three bottom screws.



Fig. 3 – Knob. Arrow shows set screw location.

The top has a rotational on/off switch as shown in figures six and seven.

You will need a Phillips number zero screw driver to remove all seven screws that hold the top together. A non-magnetic tweezers is also useful. Figure four shows the knob set screw hole which is aligned with the arrow shown in figure three. The screw comes through the hole from the top (from underneath as

viewed in figure four). Insert the knob, press down against the cell spring, shown in figure five, and turn to align the two holes.

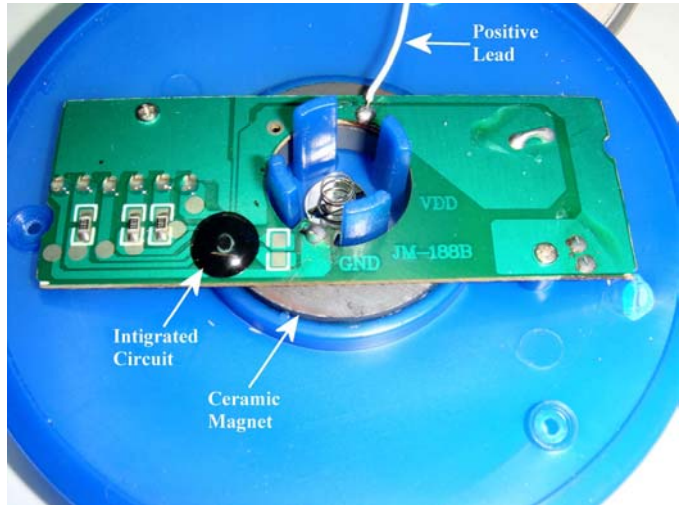
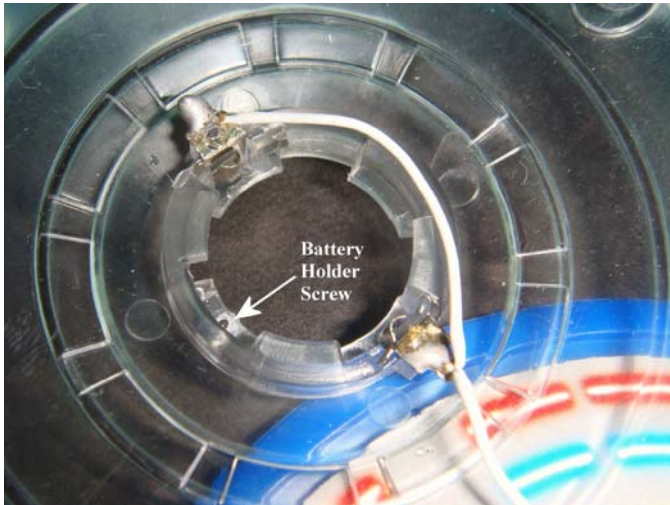


Fig. 4 – The knob is removable by twisting sans screw. Fig. 5 – Circuit board under colorful cardboard cover.

Figure five shows the electronics that controls the six LEDs that shine through the colored cosmetic paper rectangular cut out shown in figure one. They are Blue, Red, Green, Yellow, Red, and Blue from the outside in.

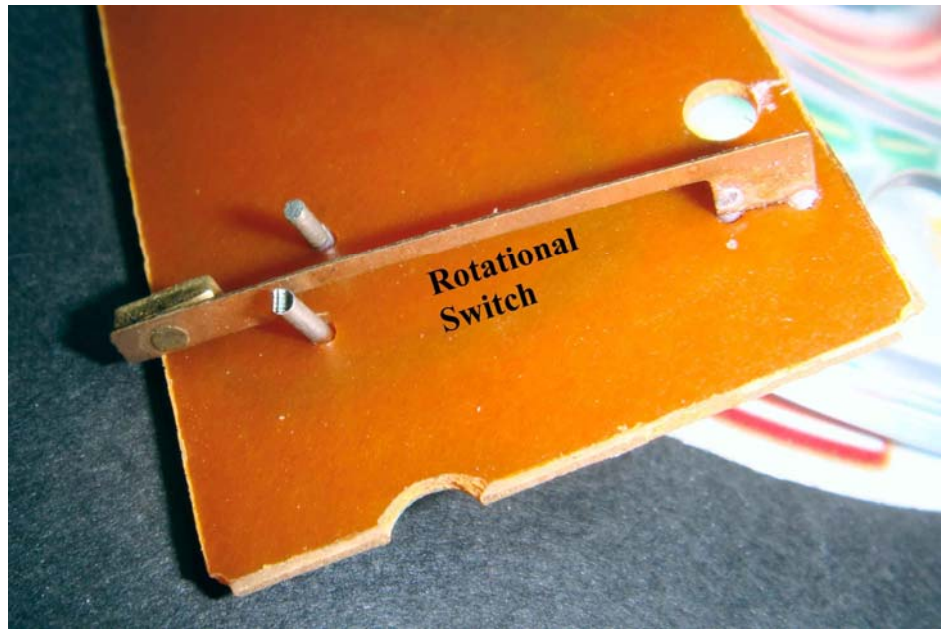


Fig. 6 – Circuit board turned over. Fig. 7 – Spinning top LEDs are turned on by the centrifugal force of rotating.

The performance of the top is very interesting to watch and photograph. The package says that there are 64 different patterns, but after an hour of watching the top run no specific repeating pattern was noticed.

The top operates independently of the base which only serves the purpose of keeping the top turning at a fast enough rate to operate the quite sensitive rotational switch. This is easily demonstrated by placing the top in a variable speed electric hand drill.

Part II will describe the base which also has LEDs, and much larger cells (four AAA), that are used to power the spinning top to keep it running once started. The base has a normal on/off slide switch.