

## “DIY” Anemometer Kit Instructions

Thank you for purchasing a Vortex Anemometer Kit! It was designed to provide you with consistent, accurate information, for use in a rugged environment, at an affordable price. We hope it will exceed your expectations.

CONTENTS: (check that all is there):

- 3-cup rotor
- Round plastic body with bronze bushings
- 25 feet of wire
- Aluminum handle (about 9" long)
- Cycle Computer
- Bag of parts with:
  - o 2 tiny wood screws
  - o Tiny cylindrical magnet (in rotor?)
  - o 1 metal plate with 2 holes
  - o 1 large #10 wood screw
  - o 1 #10 washer
  - o 1 rotor shaft
  - o 2 tiny circlips (one extra just in case!)
  - o 1 reed switch or 2 (in straw)
  - o 2 tie-wraps
  - o 2 pcs of Velcro
  - o 1 ultra thin washer

TOOLS NEEDED:

- silicone glue or similar (Home Depot “GOOP”)
- soldering iron
- solder
- wire cutters
- wire strippers
- fine Phillips head screwdriver

Here is how to put it all together:

### **SUBASSEMBLY 1: The Rotor (this is easy)**

Glue the magnet inside the rotor. The magnet should be oriented vertically, with the end of the magnet flush with the rim of the rotor. See photo.

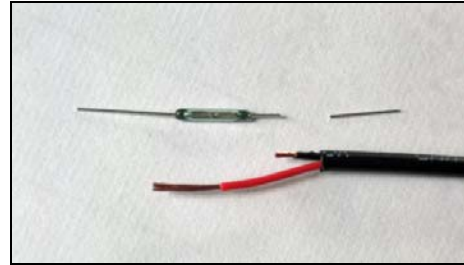


The set aside to cure. The rotor is ready!

### **SUBASSEMBLY 2: Wire & Reed (this is harder)**

The goal of this exercise is to end up with a reed switch that is soldered in line with the wire, tightly, so that it will fit in the hole in the body.

Strip the wire as shown in the photo. Tin the ends (apply solder to the bare wire ends first so it will solder easily to the reed switch).



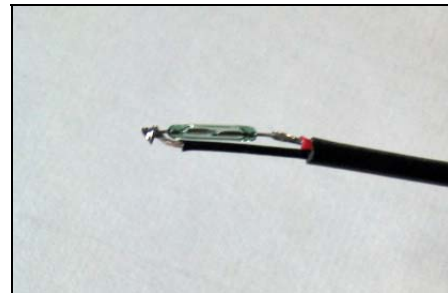
**The reed switch is inside the section of straw. HANDLE THE REED WITH CARE. Never bend the wire while holding the reed switch – it will break!**

Cut one end of the reed switch lead to about 3mm length.

Solder it to the short section of wire.

Solder the other end close to the other end of the reed, again keeping everything as linear as possible.

Trim the free end as shown.



Strip the other ends of the wire to prepare them for connection to the display.

Done!

### **SUBASSEMBLY 3: Wind Sensor Body (this is easy)**

First, snap the circlip in the groove of the shaft.

Careful! The circlip is easily lost (that’s why there are 2 in the package!). Put the ultra thin washer on the long end, and drop it through the bottom of the body. It should slide up and down freely – no friction!



Next, screw the small metal plate onto the bottom to hold the shaft in place, using the two tiny wood screws.

Next, attach the mounting bracket to the body using the #10 screw and washer.



At this point, check that the reed/wire fit in the hole. CAUTION: any bending will crack the reed and break it. It needs to slide in the hole, all the way to the bottom, without effort.

#### **SUBASSEMBLY 4: Display (this is easy)**

Find the backing for the display; it is a black piece with the display backing on one end and the black plastic housing with the reed switch in it on the other. Cut off the reed switch (you can break it open and salvage the reed switch as a spare if you want!).



Photos show SIGMA but the Cateye is the same idea...

Strip the ends of the wires from the bracket to connect to the wind sensor wire.

NOTE: do not worry about red and black; there is NO POLARITY (the reed is just a switch).

Calibrate the display using the instructions provided in the booklet and/or in this package.

See [www.inspeed.com/help.asp](http://www.inspeed.com/help.asp) for more instructions.

If you want to stick the display somewhere, You can put Velcro behind the it: remove the yellow and black sticky tape under the backing, and apply the thinner strip of Velcro crosswise. Use the remaining piece to stick it where you want. Make sure all surfaces are very clean before applying the self-adhesive Velcro.

#### **PRE-TEST**

Connect the reed switch assembly wires to the display wires. Wave the reed switch past the magnet (about 1 mm away) and see if the display registers. If all is working, the magnet should cause the reed switch to open/close, which triggers the display. If it does not work, something is wrong!

Check the display by tapping the wires from the display together – this should cause the display to register. If the display is OK, then the reed switch assembly is faulty and needs to be redone.

#### **ASSEMBLY**

Place the rotor face up on a hard surface and press in the shaft as shown. CAREFUL not to bend the shaft! Press it in HARD and STRAIGHT! Should bottom out leaving about 1 mm between the top of the body and the rotor.

Next, dip the reed switch in the glue and carefully put it in the hole. Set it aside to cure, making sure it does not SLIDE OUT of the hole during curing!

Tie wrap the wire to the handle to secure it. Make sure it is tight so that no tension gets to the reed switch!

Connect the wind sensor to the display. Spin the rotor – should register between 10 and 20 mph when spun by hand. You can check it against a car speedometer by holding it at full arm's length out the window.

#### **IMPORTANT NOTE ABOUT AVERAGE WIND**

**SPEED:** The display stops recording below approximately 1 mph. That means that if the wind blows for 2 hours at 20 mph and 2 hours at zero, the average shown will be 20, not 10! Please keep this in mind for your desired use of the Vortex.

#### **WORKAROUND:**

Reset All. Note the date and time. Let the unit run. When desired, note the TRIP MILES (odometer, there are several). Divide the "wind miles" by the actual time. That will give you true average speed.

#### **ENJOY!**

