

How to Replace A Davis Anemometer Reed Switch.

The following instructions will show you how to strip and repair a Davis instruments anemometer. I will include details of the tools you will require and the spare parts where necessary.

Please note, whilst this procedure is not rocket science, it does require a moderate amount of skill. Please read these instructions FULLY before attempting to do the repair yourself. If you *are* able to return your unit to Davis or an approved service agent, and you do not feel confident about this procedure please don't blame me if you junk it!!

Tools required;

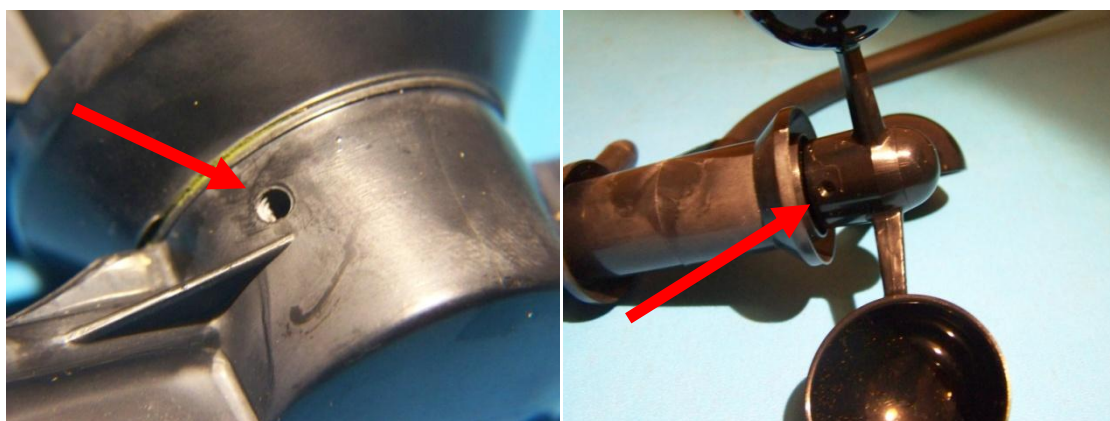
- 1.25mm (0.05") Allen key.
- 5mm spanner.
- Philips screwdriver.
- Scalpel or other sharp craft knife.
- Pointed nose pliers.
- Cutters
- Locking pliers (Mole grips.)
- Soldering iron.
- Hot melt glue gun.

Materials required.

- Replacement reed switch PCB
Or
- 10.5mm single pole normally open reed switch (Mouser PN 876-KSK-1A35-1015)

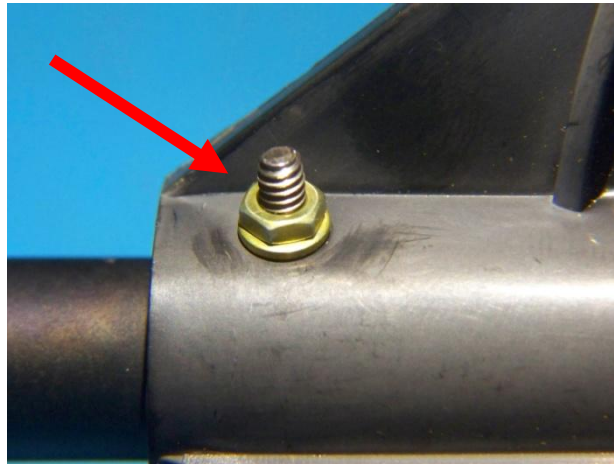
Step 1

First remove the wind cups and vane using the 1.25mm Allen key. Loosen the grub screw in each just enough to pull them off.



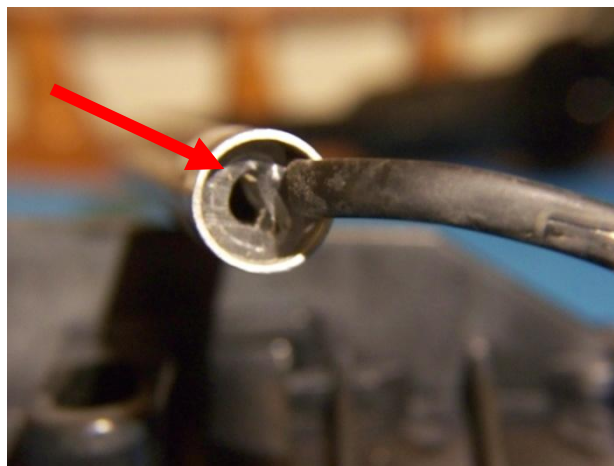
Step 2

The next step is to remove the anemometer arm from its support. Do this by using the 5mm spanner to remove the nut and carefully unscrew the bolt from the base.



Step 3

With the base off, locate the cable retention grommet. This is fitted inside the anemometer arm where the cable exits.



Grip the grommet with the point nose pliers and pull it out. With this removed the cable will run freely in the tube. Retain the grommet.



Step 4

Remove the lower drip ring so that you can access the grub screw that keeps the head unit attached to the anemometer arm.

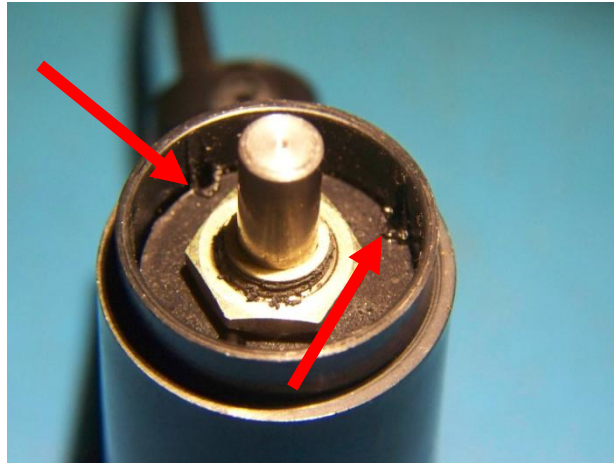


With the retaining screw loosened, carefully feed the cable up the arm whilst pulling on the head unit. The two should separate.



Step 5

So far so good. This is the point where things can become a little tricky. The direction potentiometer will need to be removed. It is retained in the head unit by 3 or 4 “heat staked” point. (A small point hot object has been used to locally melt the plastic.) You will need to carefully cut through these points. Using the scalpel scrape away any melted plastic, and then slip the blade around the circumference of the potentiometer and the inner surface of the head unit.



Once you are satisfied that the staking is all removed use the locking pliers to grip the pot' shaft and carefully, using a “wriggling” back and forth motion pull the pot' out. Feed a little of the cable in every so often, so as to not over stress the connections.

Note: The wires that go from the pot' to the reed switch PCB are only about 75mm long, pulling too hard will cause damage to the PCB.



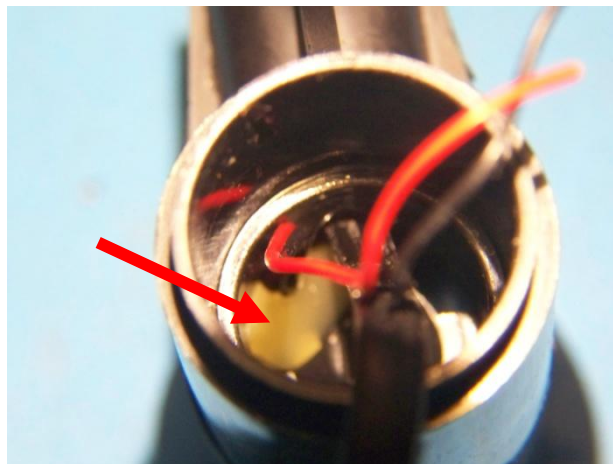
Step 6

With the pot' out as far as the red and black wires from the reed switch will allow, snip the red and black wires about 5mm from the pot'. The pot' will then pull freely from the head unit.



Step 7

There is a small amount of "holt melt" glue that retains the reed switch PCB. This will need to be removed before the PCB will withdraw from the head. This is best achieved by placing the head unit in a deep freeze to make the glue brittle and then prizing it free.



Once the glue has been removed the PCB will push out from behind.



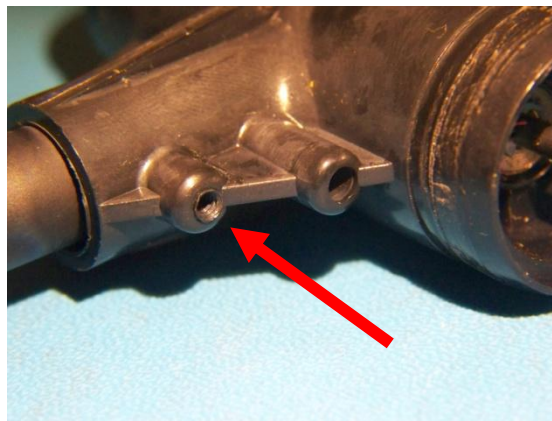
Step 8

Refit the new reed switch PCB and then carefully push it back into head so that the edge of the PCB sits flush in its mount. Apply a small amount of hot melt glue to the PCB at the point where it was removed previously.

Strip and solder the red and black wires to the corresponding contacts on the back of the direction pot'. You will need to remove glue from around the contacts and re-apply as necessary.

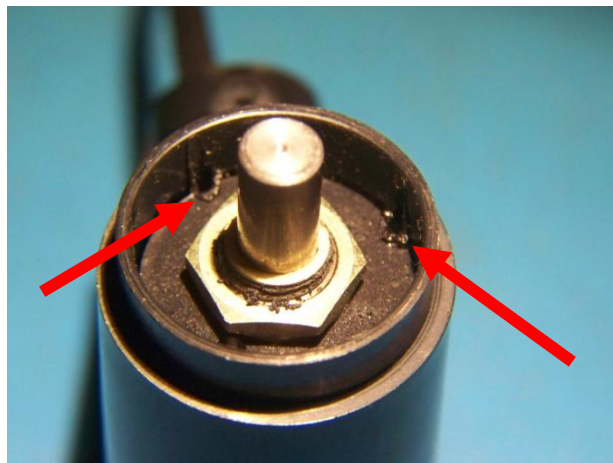
Step 9

Once the glue has set push the direction pot firmly back into place, taking care to guide the cable back down the arm. Re-tighten the grub screw, replace the lower drip ring.



Step 10

Using the soldering iron carefully heat stake the pot' to the inner face of the head unit in three places.



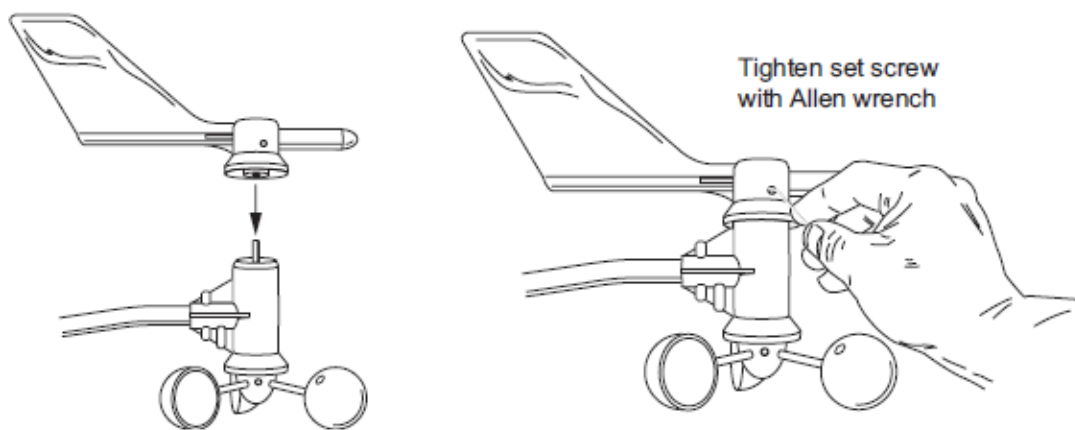
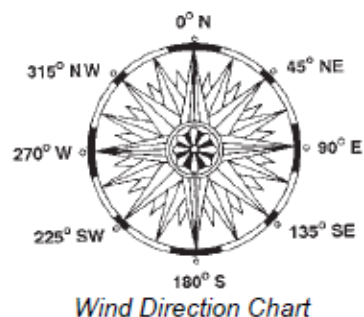
Step 11

Refit the cable retention grommet, taking care to ensure the cable is clear of the base mounting holes. Refit the base.

Step 12

Refit the wind cups, and the wind vane. Follow this procedure, taken for the Davis ISS manual to correctly align the wind vane.

1. Loosen the Wind Vane set screw.
2. Pull the vane directly up and off the steel shaft on which it turns.
3. Press WIND key on console to display current wind direction in degrees.
4. Use a reliable map or a landmark to determine in which direction (S, E, W, etc.) the anemometer arm is now pointing.
5. Use the wind direction chart or compass markings to find the degree reading which corresponds to that direction.
6. Slowly turn the stainless-steel wind direction shaft with your fingers. Stop turning when the display reaches the degree reading obtained in step 3.
Please allow the wind direction display approximately 5 seconds to stabilize after the shaft is turned. You will have to turn the shaft, wait, and turn it again until the desired wind direction is displayed on the console.
7. Being careful to keep the stainless-steel shaft from turning, place the wind vane on top of shaft with the vane's nose pointing in the same direction as the arm.
8. Slide the wind vane down the shaft as far as it will go.
9. Use the Allen wrench provided to tighten the set screw on the side of the wind vane.



Installing Wind Vane on Anemometer Shaft

10. Test your anemometer by pointing the wind vane in any direction and making sure the console displays the correct wind direction. Remove and re-adjust the vane if it does not. Allow the wind direction display approximately 5 seconds to stabilize after turning the shaft.

Your Anemometer should now work correctly.