

Assembly Instructions

9 LED blinkie

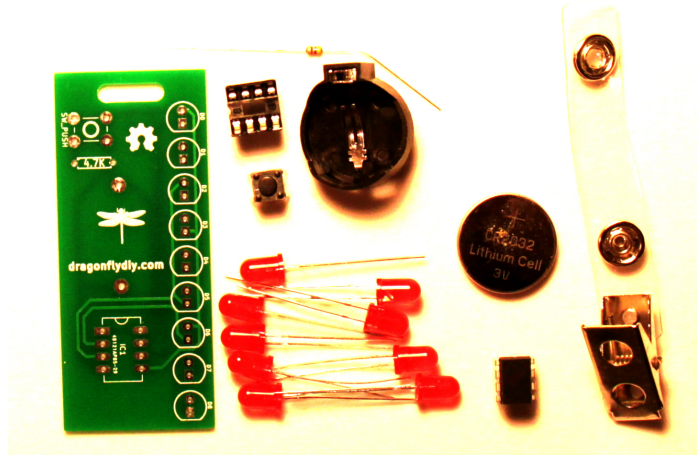
dragonflyDIY.com

Your kit has the parts shown in this photo

- Circuit board
- 8 pin IC socket
- 9 LEDs
- Coin cell battery holder
- 4.7K resistor
- Pushbutton switch
- *ATTiny85 CPU (*)*
- *CR2032 battery (*)*
- *Badge clip (*)*

() If you are assembling your kit at a guided workshop, the*

CPU, battery and clip will be given to you after a technician checks your work.



General soldering guidelines:

- To hold the parts in place before soldering, bend a couple of wires at about a 45 degree angle after inserting the part in the board. **DO NOT bend the wire all the way flush to the board** - this makes it more difficult to solder properly, and it makes it nearly impossible to remove the part after soldering if a repair is needed.
- DO NOT cut the wires off very close to the board - this also creates a very weak mechanical connection. Wires should be cut about 2 to 3 mm from the surface of the board.
- Use the soldering iron to apply most of the heat to the wire and circuit board pad, then let the heat of those bits melt the solder. Heating the solder directly on the soldering iron then just dropping it on the wire will result in a very poor connection.

OPERATION:

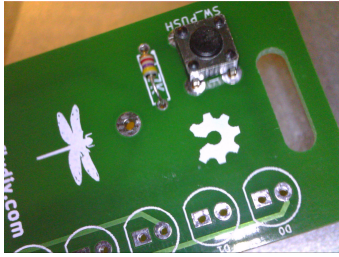
- To turn on the blinkie, double-click the control switch.
- To change modes, click once per mode. The mode with all LEDs on will cycle through all modes, spending about one minute in each mode.
- To turn the blinkie off, hold the control switch for two seconds.

Additional note: if the blinkie fails to turn on, it's likely that something conductive (like a metallic button or zipper) brushed up against the back of the board - this can cause the controller chip to crash. Simply remove either the battery or the chip and put it back in again to "reboot"

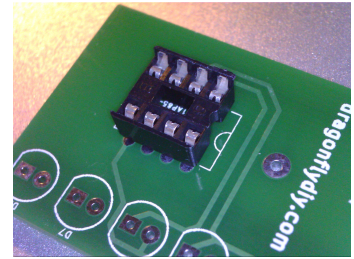
Be careful of the chip - 8 pin chips can easily fall out of the socket and become lost. Pressing it in firmly should help, but if you are unsure, a dab of glue under the chip will ensure it stays put.

Begin here:

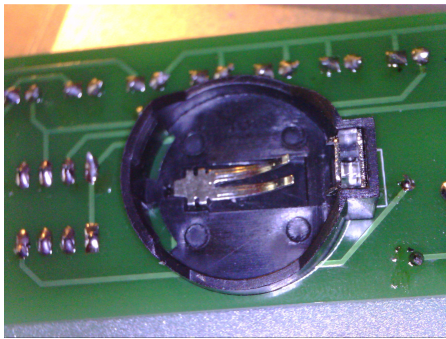
Insert the 8 pin IC socket into the proper location. Bend two of the wires in opposite corners to hold it in place while you flip it over and solder it in place.



Insert the pushbutton switch and the resistor. The switch will snap into place. Bend the resistor wires to hold it in place. Flip the board over and solder the switch and resistor. Cut the resistor wires above the solder connection.



Insert the 9 LEDs. Each LED has a long and a short lead. The short lead should go into the hole with the square pad. If you put one in backwards, your blinkie will not operate correctly. Bend one of the leads of each LED slightly out to hold it in place. As a double check that none are inserted backwards, hold up to the light and notice that you can see the metal bits inside. Make sure that they all are facing the same way. You can see this in the photo to the right. Flip the board over, solder all the leads in place and cut the wire above the connection.



Put the battery holder **ON THE BACK OF THE CIRCUIT BOARD** - notice that there is an **indicator printed on the board that shows which way it goes**. Flip the board over and solder it **ON THE FRONT**. You don't really need to bend the leads since it's pretty easy to hold it in place simply by putting it down on the table surface while soldering.

- Check your work. If you are at a workshop, have a technician check your work. If it's satisfactory you will get your chip and battery. The chip should be inserted with the pin 1 marking facing the top of the board (the end with the hanging slot). This mark can be almost impossible to see. If the chip has a sticker on it then the image on the sticker should be right side up; artwork on the sticker should be the same way up as the artwork on the board.
- Then the battery is inserted with the writing facing out. To remove the battery for replacement, press the release tab and the battery should drop out. The blinkie should begin running as soon as the battery is inserted. The first thing it does is to run an "LED test" where each light is turned on one at a time, then all together. See page one of this sheet for operation instructions.

