

## TenaControls Brings Models to Life

## Instructions of Model# KTNGA-A Torpedo, Impulse Engine, Navigation and Strobe Board for Star Trek VI Undiscovered Country Klingon K'Tinga Battle Cruiser

This control board is completely assembled and tested. The only thing you need to do is connect up the led's, speaker, momentary switch, 9 volt battery clip and the resistors to the two wire mating connectors. Then just plug in a 9 volt battery (not included) and throw the switch (not included) on, this board works on 12 volts DC as well. Hot glue around the printed circuit works well for locking into place. Or use the 4 mounting holes for a 4-40 diameter bolt.

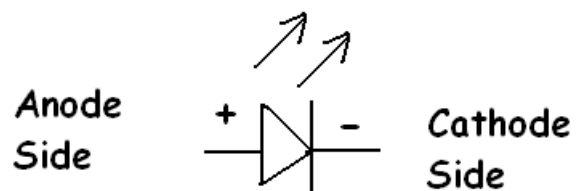
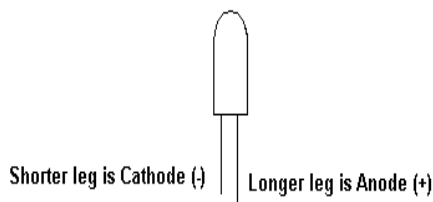
Items you will need: Soldering Iron, solder, cutter and wire stripper.

Video link on how to set up Torpedo LED's:

[www.youtube.com/watch?v=kPZkmfFzSF4&feature=youtu.be](http://www.youtube.com/watch?v=kPZkmfFzSF4&feature=youtu.be)

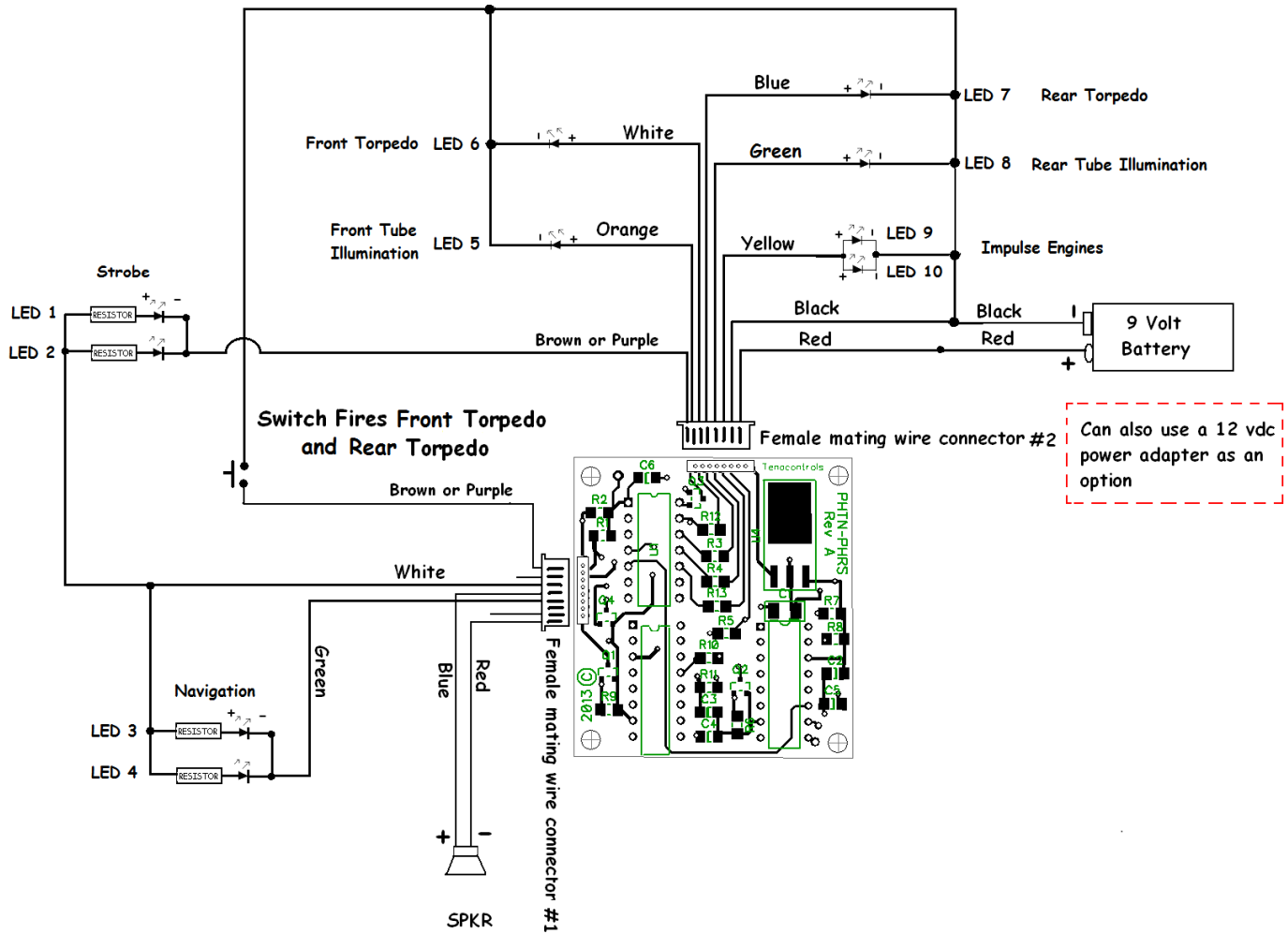
**\*\*Note:** When using the shrink tubing, you need to only slide the shrink tubing over one leg of the led to keep it from shorting against the other leg. Then use heat gun or flame from lighter to heat the shrink tubing until it shrinks around the wire connected to one of the led legs.

How to distinguish an led:



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Master Wiring Diagram



**TenaControls Brings Models to Life****Strobe Side**

1. **Two Red 1.8mm led's, LED1-LED2.** The Two Cathodes (-) of the Strobe led's, LED1-LED2 connect to Brown or Purple wire on mating connector #2. Then connect the Anodes (+) of LED1-LED2, to one end of their respective resistor and the other end of resistor will terminate to White wire on mating connector #1. **See above diagram.**

**Navigation Side**

2. **Two White 1.8mm led's, LED3-LED4.** The Two Cathodes (-) of the Navigation led's, LED3-LED4 connect to Green wire on mating connector #1. Then connect the Anodes (+) of LED3-LED4, to one end of their respective resistor and the other end of resistor will terminate to White wire on mating connector #1. **See above diagram.**

**Front Torpedo**

3. **Two Red led's, LED5-LED6.** The Two Cathodes (-) of the Torpedo and Tube Illumination leds, LED5-LED6 connect to Black wire on mating connector #2. Then connect the Anode (+) of **5mm LED5**, (Tube Illumination) to the Orange wire on mating connector #2. Then connect the Anode (+) of **3mm LED6**, (Torpedo) to the White wire on mating connector #2. **See above diagram.**

**Rear Torpedo**

4. **Two Red led's, LED7-LED8.** The Two Cathodes (-) of the Torpedo and Tube Illumination leds, LED7-LED8 connect to Black wire on mating connector #2. Then connect the Anode (+) of **3mm LED7**, (Torpedo) to the Blue wire on mating connector #2. Then connect the Anode (+) of **5mm LED8**, (Tube Illumination) to the Green wire on mating connector #2. **See above diagram.**

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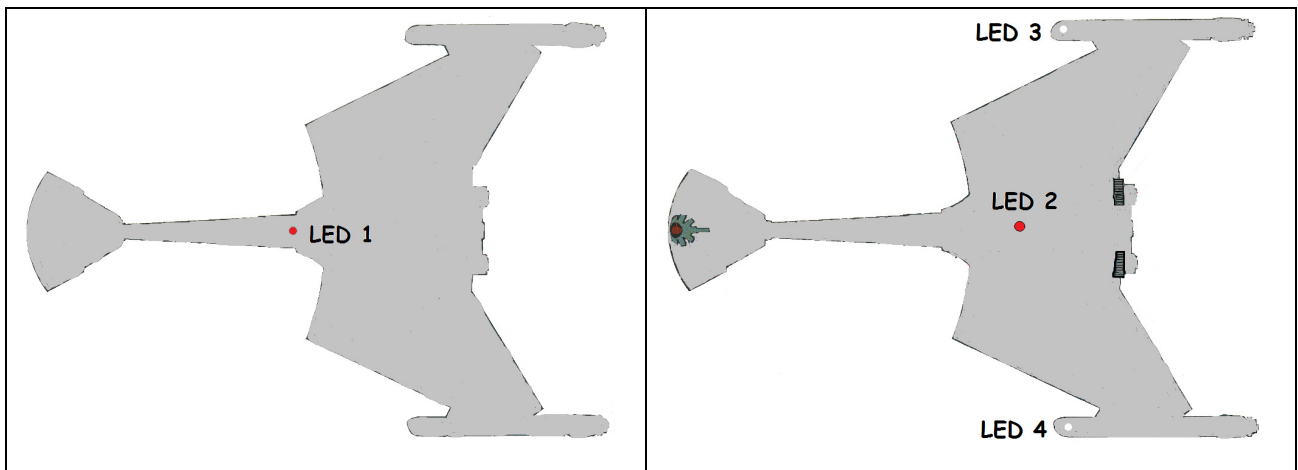
5. Now connect SPKR to the Red and Blue wires on mating connector #1. Then connect momentary Switch. One side to the Black wire on mating connector #2 and the other side to the Brown or Purple wire on mating connector #1. **See above diagram.**
6. Press Switch once to activate the Three Front Torpedo Blasts. Press Switch twice to activate the Single Rear Torpedo Blast.

### Impulse Engines

7. **Two Red 3mm led's, LED9-LED10.** The Two Cathodes (-) of the Impulse Engines led's, LED9-LED10 connect to Black wire on mating connector #2. Then connect the Anodes (+) of the Impulse Engines led's, LED9-LED10 to Yellow wire on mating connector #2. **See above diagram.**

Top View of LED locations

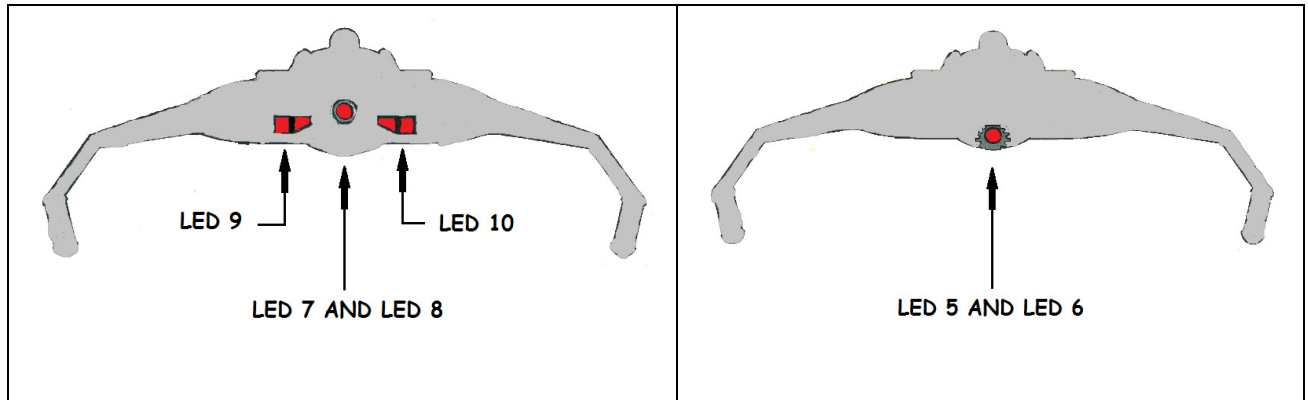
Bottom View of LED locations



Rear View of LED locations

Front View of LED locations

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- B) Used for other than its intended use.
- C) Buyer mishandling.