

REVISED LCD and BACKLIGHT ASSEMBLY

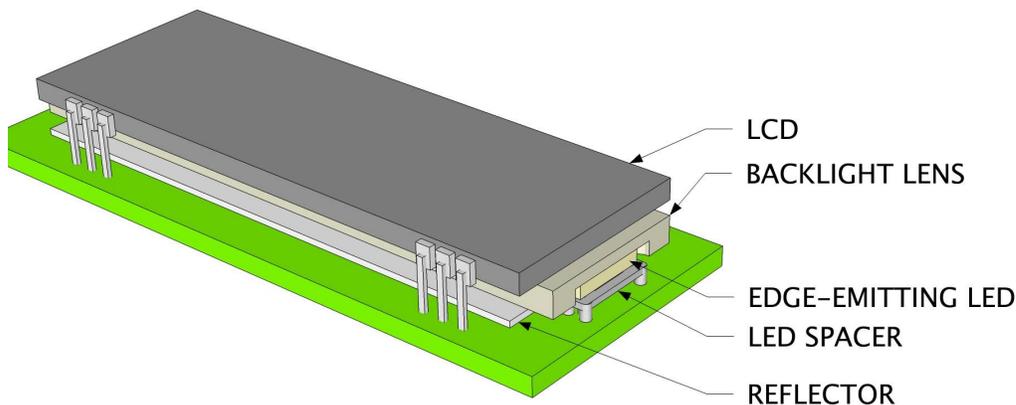
Rev. K2LCD-1, May 24, 2018

The LCD backlight supplied with your K2 kit is different from the one shown in your Owner's Manual.

The new backlight and LCD assembly instructions, below, replace those that appear on pages 27 and 28, beginning with this step (left column, pg. 27):

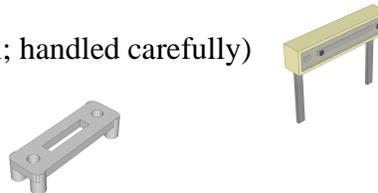
- Locate the LCD backlight assembly....

The illustration below shows how the LCD and backlight will appear when fully assembled.



- Locate the bag labeled **K2 Backlight**. Included in the bag should be the following:

- (1) reflector (white plastic, approx. 2.6" x 1")
- (1) backlight lens (clear plastic, approx. 2.9" x 0.75")
- (2) rectangular, side-emitting LEDs (very small; handled carefully)
- (2) LED spacers (very small; handle carefully)



- Before continuing, make sure you have completed installation of the LCD driver IC and its socket.

NOTE: Do not trim the pins of the LCD driver's socket. These are used to set the height of the reflector.

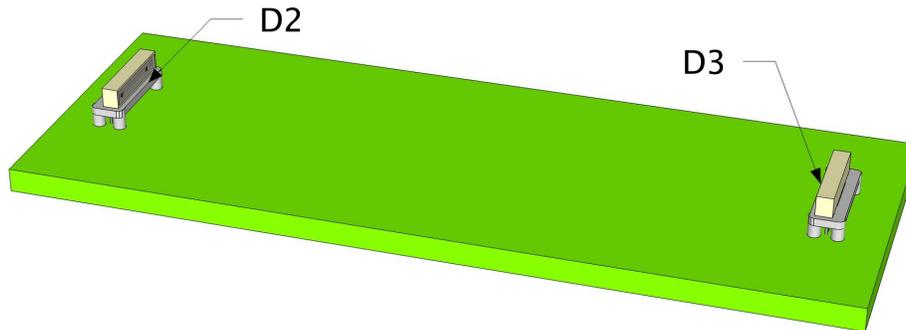
- Look at one of the backlight LEDs closely: it has one side that is a milky color, different from the rest of its package, which is yellow. The milky side is the one from which the LED emits light. (You can see the LED chips inside with a magnifying glass.) This side of each LED must be facing inward—toward each other—when they're mounted to the PCB in subsequent steps.

- Insert each LED into an LED spacer. These are used to set the height of the LEDs above the PC board.

Locate the mounting holes labeled D2 and D3 on the front panel PC board. The illustration below shows how the LEDs and spacers will appear when mounted at these locations. (The LCD driver IC and its socket are on the back side of the PC board.)

At location D2, mount a backlight LED, along with its spacer, but do not solder yet.

NOTE: Make sure D2's emitting face is aimed toward D3. LEDs are difficult to remove once soldered.



While holding the LED (D2) and its spacer firmly in place, use your soldering iron to apply a small amount of solder to one of the two pins.

Examine the LED and spacer. If they are not seated fully onto the PC board, re-heat the solder joint while applying a small amount of pressure. Once the LED and spacer appear to be positioned correctly, solder the second pin. Then re-solder the first pin if necessary.

Install the other backlight LED (D3) in the same way. Make sure its emitting face is aimed toward D2. Solder D3.

Place the white backlight reflector on top of the pins of the LCD driver socket and centered between the two LEDs. The reflector will be securely retained by the backlight lens and LCD once they are installed.

Place the clear plastic backlight lens on top of the two LEDs and the reflector. The lens has two small wells that fit over the LEDs, aligning the assembly.



CAUTION: The LCD and its pins are fragile—handle carefully. **Do not drop the LCD on a hard surface**, as it is made of glass and may break. **Do not remove the protective plastic film** from the front surface of the LCD until later in this section when the front panel assembly is completed.

Carefully remove the LCD from its packing materials.



CAUTION: **Do not peel off the thick plastic material on either side of the LCD, or the LCD will have to be replaced (not covered under warranty).**

Hold the LCD up to a bright light and look at both sides for the presence of a *very thin, clear protective film* (like transparent tape). All LCDs have such film on the *front* surface of the LCD, which will be removed in a later step. But the *back* of some LCDs (not all) may also have such film, with faintly visible yellow or gray diagonal lines. If protective film is found on the *back* side, use a fingernail at one corner of the LCD to

dislodge it, then peel it away. **Review the illustration on page 1 of these instructions as needed during the following steps.**

The LCD has six pins along its lower edge (three on each side), and 24 pins along its upper edge. Place the LCD in its indicated position on the board, resting on top of the backlight lens. Insert all of the pins carefully, making sure none are bent. **Do not solder yet.**

The LCD must be seated flat against the backlight lens. If the LCD does not appear to be seated correctly, it may be because the backlight LEDs or spacers are misaligned. Once the assembly is installed correctly, the LCD's pins will all protrude the same distance through the board. It is possible that all of the leads will be just flush with the bottom of the PCB, or longer.

Solder the four corner pins of the LCD, then re-check the alignment of the LCD assembly. If everything looks correct, solder the remaining pins. LCD pins can be soldered on the top of the board if they do not protrude from the bottom. If the leads do not reach through the holes, be sure the solder fills the gap between the lead and solder pad on the top side.

This completes LCD and backlight assembly. Continue with the step in the right column of page 28 that begins with:

Attach two thin, 1/4" (6.4 mm) self-adhesive rubber pads....