LED50-T-TS Lighting Kit

For GIVI Maxia E-50 Top Case

Installation Procedure

(Expanded)

Please read through these instructions completely, ***before*** starting any work.

Please inspect your kit carefully to verify the following parts:

Parts inventory:

✓	Quantity	Description
	4	12" LED Strips
	1	5-wire plug-harness w/embedded controller (connects to motorcycle.)
	1	3-wire 90° socket-harness (mounts to the E50 Top Case.)
	1	Wire tap connector kit
	1	7/16" drill bit
	4	18-22 gauge wire couplings (3 + 1 spare)
	1	Shrink tubing 10mm/5mm (length 150mm, large)
	1	Shrink tubing 6.0mm (length 200mm, medium)
	1	Shrink tubing 4.5mm (length 200mm, small)
	4	Adhesive cable clamps (for securing the wire harness)
	1	Basic instruction set
	1	Warranty card

Additional supplies necessary:

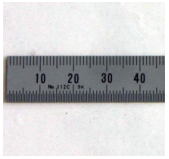
- transparent (Scotch) tape

Tools necessary:


Electric Drill


Drill bits


Phillips screwdriver (#1 tip)



Ruler or calipers

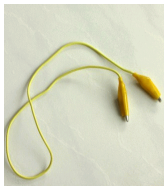

Crimpers/wire strippers


Cigarette lighter (or heat gun) for shrink tubing


Marker

Optional:


Circuit tester or volt meter


"Alligator" test leads


Diagonal cutters

Wiring the Motorcycle

Overview: Start by completing the motorcycle wiring first. There will be steps later for testing your connections with power from the motorcycle before continuing further.

Ⓐ Your **LED50-T-TS Light Kit** has been designed to operate with the **tail**, **brake,** and **turn signal** light functions of your bike. Look as closely to the rear tail light as possible to locate the indicated wires:

5-Wire Harness	Your Motorcycle
BLUE*	Tail Light wire
RED	Brake Light wire
GREEN	Right Turn Signal wire
YELLOW	Left Turn Signal wire
BLACK	Ground

* The blue wire must be connected to a ***switched*** 12V source to operate the embedded mini controller. For motorcycles with a single brake/tail light wire, connect the blue wire to a 12V switched source (live when the ignition switch is turned on.) Connect the Red wire to the single brake/tail light wire.

If you have a volt meter or circuit tester, it may assist you in identifying and confirming the wires noted above on your motorcycle.

Plan the path you will use for your harness carefully, ***before*** tapping any wires. Consider the location where your 90° socket/harness will be mounted on your E50 Top Case. (Read ahead to section ⑥ about considerations in locating a mounting position for the 90° socket/harness.)

Use the supplied wire tap connectors to tap the wires identified above and connect them to the 5-wire plug/harness with embedded controller.

Installing the LEDs in the Top Case

Overview: LED Strips will be installed behind the red lenses on the E50 case (two strips on each side.) Small holes will be drilled to pass the wires inside the case, where they will be combined and coupled to one wire harness. The harness will run around the right side of the case in the protected area of a ledge, and toward a socket that will be mounted in the right-front area. Another hole will be drilled to mount the 90° wire socket/harness assembly.

Figure 1

① **Remove the red lenses from the top case** (see figure 1.) The lenses are held in position by two screws at the ends. Remove the left lens by removing the screw inside the case at the 9 o'clock position (as viewed when opening the case.) Remove the screw on the outside of the case, behind the latch. Be careful to use a properly-sized screwdriver (phillips #1 point), and get on the screws as firmly and straight-on as possible; these screws have small heads that can be stripped if not approached properly. Later, in step ⑤ you will repeat this procedure for the right-side lens.

② **Mount the LED's on the lens and tape them into position.**

Figure 2: LED Strips positioned in the lens.

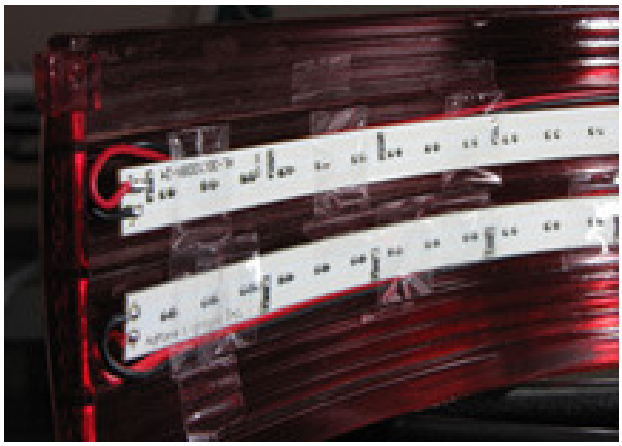


Figure 3: LED strips held in position using transparent tape. (Wires are normally free; they are stowed away for clarity of the photo only.)

The red lens has 4 channels on the inside; the LED strips mount in the two center-most channels. Within the channels are several grooves. Seat the LED strip so the LED's are in the center groove of the channel. If they are not seated properly, there will be clearance problems when remounting the lens to the case.

Place the LED strips so they are lined up at the ends, and about 10-15mm (.4 - .6") from the straight end of the lens (not the angled end.) See Figures 2 and 3.

Use a clear (transparent) tape to hold the LED strips in place. The tape will simply hold the LED's in place while the lens is reinstalled on the case. Use tape in 4-5 spots across the length of the LED strips to secure them. The tape can remain in place after reinstalling the lens, as it will not be visible.

③ **Locate the position where the LED wires will pass through the case and drill the holes.** Use a marker and ruler (or calipers) to mark and measure the locations for holes to pass the wiring through to the inside of the case (Figures 4 & 5). The correct locations should be 34mm (≈1 ⅜") and 53mm (≈2 ⅛") down from the lip at the top of the lower case, and 13mm (½") over from the side of the swing-up case handle. (These dimensions are also good for the corresponding locations with the right-side lens in step 5.)

After the holes are marked, drill with a 4mm bit (5/32"). Be careful on the lower hole to *gently* drill through the first layer of the case only. Wires will be passed through the outer layer of the case and fed upwards slightly. (See Figure 6 below.)

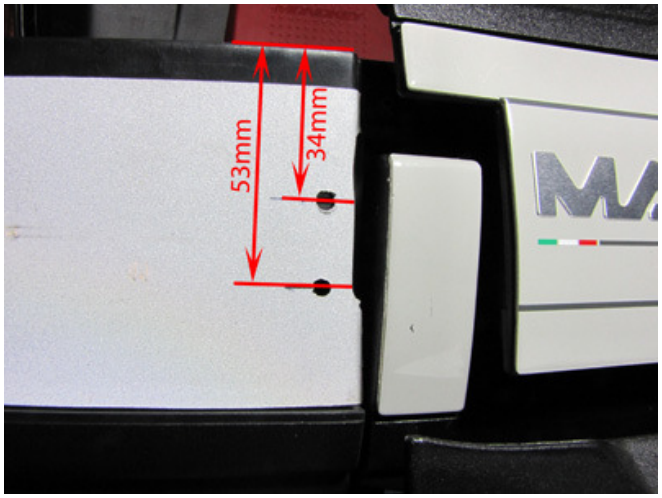


Figure 4

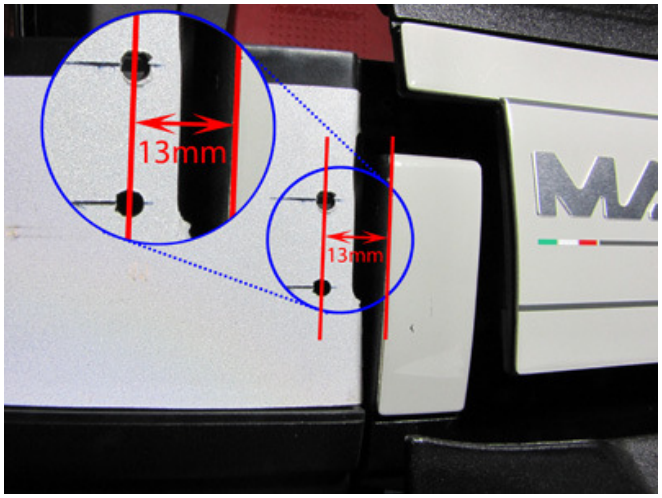


Figure 5

④ **Pass the wires through the holes, and remount the lens.**

Figure 6: Wires passed through the holes drilled in step ④.
Note: Shrink tubing covering the wires is for a later step.

Pass the wires for the LED's through the two holes just drilled. You may need to "fish" the lower one through and upward, using a small screw driver or the like to direct it upward.

⑤ **Repeat steps 1-4 for the right-side lens.**

⑥ **Locate the position for mounting the 3 wire 90° Socket-Harness and drill a hole.**

Refer to Figures 7, 8, and 9. When locating a position for mounting the 90° socket-harness, here are some considerations to make BEFORE drilling:

- What is a good location for the 3 wire 90° socket-harness, based on how the case mounts on *your* motorcycle?
- How much wire harness is available to work with (coming from the motorcycle)? Does it easily reach the position where you want to mount the socket?
- Think about the directions your wiring will take, both outside AND inside the case (with the 90° turns in both the plug and socket.) Does it all work out the way you want it to?
- If considering mounting the socket on the **front** of the case, keep in mind that the case has a swing-up handle in the back and can be removed from the bike and carried like a small suitcase on an overnight trip (Figure 8). Will setting it down possibly damage the socket if you locate it on the front of the case?

Taking all of these considerations in mind, we think the layout and location for the 3 wire 90° socket-harness shown in Figures 7 and 9 are ideal for most situations. **If you feel you need to deviate from this setup, you may need to supply additional wire, couplings, and shrink tubing.**

When you have decided on a location for the socket, drill a hole in the case for mounting the socket, using a small drill bit first. Use a 4mm bit (or 5/32") to drill a pilot hole, then step up to 6mm (or ¼"), and finally use the supplied 7/16" bit. Mount the socket in the hole, and *do not overtighten!*

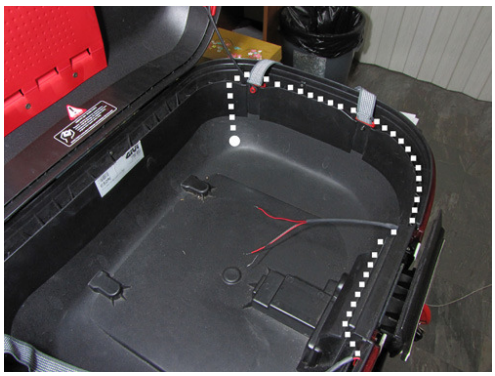


Figure 7

Figure 8

Figure 9

⑦ **Prepare and connect the wires.** Cut about 125mm (5") of the large shrink tubing (for covering the couplings later) and slip it over the harness *before* connecting the wires! (Figure 10). Cut lengths as needed of the medium tubing for covering four leads from an LED strip together, and the small tubing for covering two leads (when they've been separated for coupling as described below. Put the tubing in place before crimping a coupling onto the end of the leads. *The intent is to cover all of the wiring with shrink tubing to help protect it against chafing and being snagged by cargo placed in the top case.*

Figure 10: Shrink tubing (before shrinking) slid to the side while couplings are connected.

* Optional: If you have test clips, make temporary connections as indicated below in steps ⑦.① - ⑦.④ with the test clips first, and plug the harness into it's mate plug (from the motorbike lighting system.) Check the LED's on the case for correct tail light, brakes, and turn signal operations before crimping permanent connections.

⑦.① The four **red** leads from the LED's will be twisted together and crimped to a coupling; the two from the right-side LED's should be shortened so they can be connected with the two coming over from the left side. They will connect with the red lead from the harness, using one red 18-22 gauge crimp coupling. Plan your harness route from the point where the plug goes through the case. Cut the leads as necessary to avoid having excess wire, but be careful you don't cut the wires too short! Remember the old adage: *Measure twice, cut once.* Remember to slip

on medium tubing (4-lead section) and small shrink tubing (two-lead sections) before putting on the coupling. Crimp the coupling when finished.

⑫ The two **black** leads from the **left** LED's will be twisted and coupled together, connecting with the **yellow** lead from the harness. Remember to slip on small shrink tubing (two-lead sections) before putting on the coupling. Crimp the coupling.

⑬ The two **black** leads from the **right** LED's will be twisted and coupled together, connecting with the **green** lead from the harness. Remember to slip on small shrink tubing (two-lead sections) before putting on the coupling. Crimp the coupling.

⑭ Mount the case on the motorbike, connect the plug with it's mate (from the motorbike lighting system) and check the LED's on the case for correct tail light, brakes, and turn signal operations.

⑮ When all connections are finished and the lighting system is confirmed to be working properly, slide the large shrink tubing over the coupling area. Carefully apply heat to all the different pieces of shrink tubing. If using flame, be careful to continually move the flame over the shrink tubing and rotate the tubing/harness slightly to evenly heat and not burn any areas.

⑧ **Secure the wire harness inside the case.** Refer to Figures 11 and 12 for securing the wire harness in the case. Use the four adhesive cable clamps to secure the harness to the side of the case, so the wire harness can rest on/in the protected area of the ledge going around the case.

Figure 11: Adhesive cable clamps to secure the wire harness.

Figure 12: Completed installation.

⑨ **Congratulations! Enjoy your new Lighting kit.**