



LED License Plate Taillight/Brake Light Kit for BMW K1200LT

This kit includes all the necessary parts to add an LED taillight/brake light to the license plate holder on a BMW K1200LT. This kit greatly enhances the view of your motorcycle from the rear.



TIP It's a good idea to read a section all the way through and study the photos before you start drilling or cutting so you know what to expect.

If you have any questions about this kit, contact support@riderwest.com.

You can download a full color version of this document from www.riderwest.com.

Contents

What you get	2
What you need.....	2
Moving the License Plate Down.....	3
Mounting the LED Taillight Assembly.....	4
Removing the BMW Taillight Assembly.....	8
Running the Wires	9
Preparing the Bike's Taillight Assembly.....	11
Connecting and Testing the LED Taillight	12

What you get

Check all the parts that came with your kit before you begin. Your kit should contain:

- (1) LED taillight assembly
- (1) Grommet for the taillight
- (1) Wiring harness
- (3) Piggy-back adaptors, crimp-type
- (2) Female connector, crimp-type
- (2) Cable ties, 7" black
- Template
- Detailed instructions (what you're reading now)

What you need

To install this kit, you need the following tools and supplies:

- T-25 Torx wrench (from the LT's toolkit—for removing license plate holder)
- 5mm Allen wrench (from the LT's toolkit—for removing '05 and later taillights)
- 10mm socket (from LT toolkit—for removing '04 and earlier taillights)
- Crimping tool (for standard, automotive-type crimp connectors)
- Needle-nose pliers (for grabbing wires or ends of cable ties)
- Drill with 3/16" and 5/16" bits
- Jig or other type of saw (to cut the hole for the LED taillight)
- Small amount of silicone caulk

Moving the License Plate Down

To make room for the LED taillight, you must lower the mounting of the license plate.

1. Remove the license plate holder by removing the two T-25 screws that secure it, swinging the top out toward you, and unhooking the bottom.
2. Remove the license plate from the holder.
3. From the back, push out the screw anchors for the top of the plate.
4. Remount the license plate with the top of the plate using the bottom two mounting holes.
5. Drill two new 5/16" holes for the bottom of the license plate.
6. Push the screw anchors into the new holes (if they fit too tight, ream out the holes a little. Your license plate holder should look like Figure 1 (this license plate holder looks a little "funny" because it's been covered with reflective tape).



Figure 1. New mounting holes for license plate.

Mounting the LED Taillight Assembly

1. Cutout the center portion of the template.
2. Fold the top of the template on the indicated line (use a straight edge to fold the paper over for a more accurate fold).
3. Place the template on the license plate holder so the folded edge sits on top of the license plate holder. The line at the left should line up with the left edge of the license plate holder and both of the license plate mounting holes should be covered. The opening should be 2.25" from each edge and 1.25" down from the top. Tape the template securely in place. See Figure 2. You can remove the plastic screw anchors so the paper lies flat.



Figure 2. Template for LED taillight taped in place.

4. Use a jig saw (works quite well), RotoZip®-type tool, hand saw, or other means to cut out the opening for the LED taillight (see Figure 3). Drill a large hole for the saw blade before cutting.



Figure 3. Hole cut for LED taillight.

5. Use a knife or file to smooth out the edge of the opening.
6. Insert the grommet fully into the hole—there is a groove all the way around, right near the lip, in which the license plate holder fits (see Figure 4). Be sure the grommet is fully seated (see Figure 5). Note that the original license plate mounting holes are covered by the grommet.



Figure 4. Grommet installed in hole.



Figure 5. Close up showing grommet from the back.

7. With the grommet in place, insert the LED taillight assembly, **with the connector to the right when facing license plate**, into the grommet (if it's too tight, remove the grommet and make the hole a little larger—however, tight is better than loose, so be careful). The LED taillight and grommet should lock securely into the license plate holder (see Figure 6). The taillight should be flush with the grommet (see Figure 7). The back of the assembly is shown in Figure 8.



Figure 6. LED taillight installed in grommet.



Figure 7. Profile view of LED taillight.



Figure 8. Back of license plate holder with LED taillight installed.

Removing the BMW Taillight Assembly

1. Remove the rear taillight assembly from the bike by removing the two bolts that secure it. Access the bolts (one per side) by opening each saddlebag door. The bolts are in the rear, vertical edge of the saddlebag. Figure 9 shows a bolt for 2004 and earlier LTs (use a 10 mm socket), and Figure 10 shows a bolt for 2005 and later LTs (use a 5 mm Allen wrench).



Figure 9: Taillight assembly bolt for 2004 and earlier LTs (10mm socket).



Figure 10. Taillight assembly bolt for 2005 and later LTs (5mm Allen wrench).

2. Carefully remove the taillight assembly and unplug the taillight wiring connector. Lay the taillight assembly out of the way (you don't want to step on it—that would make this a very expensive mod).
3. Drill a 3/16" hole on the right side in the area where the bike's taillight assembly mounts (see arrow in Figure 11). This is where you'll run the wires from the LED taillight.

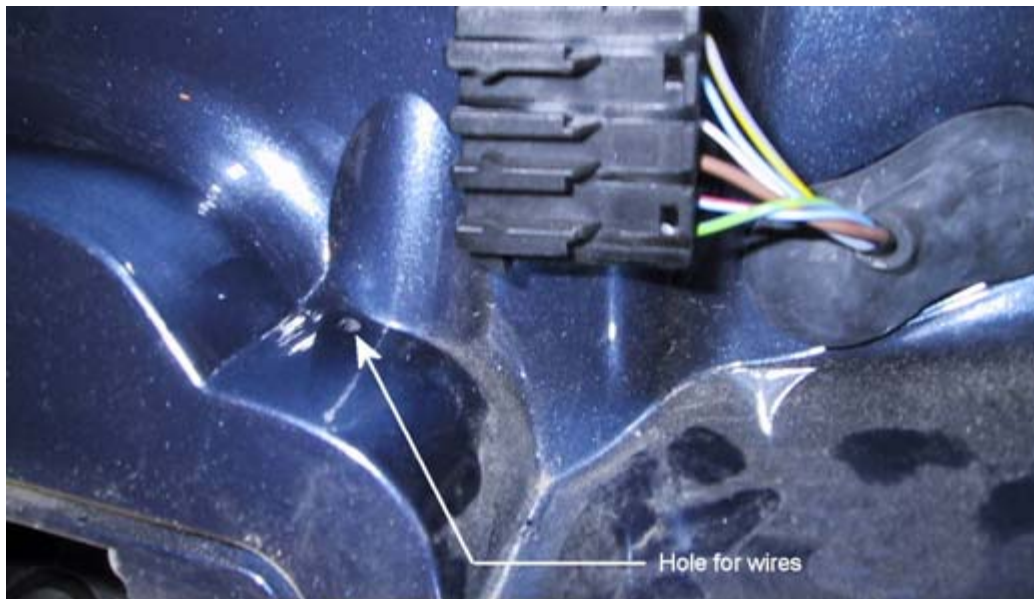


Figure 11: Hole for wires in the taillight area.

Running the Wires

1. Push the ends of the wiring harness through the hole in the taillight area of the bike up to the heat shrink tubing. Let it hang loose (see Figure 12).



Figure 12. Wiring harness hanging loose.

2. Secure the wires to the tubing on the right side with the included 7" cable ties (see Figure 13).



Figure 13. Wiring harness secured with cable ties.



3. Optional (but a good idea): From the bottom, apply a little caulking to the hole going into the taillight area (to keep moisture and dirt out)—clean the area first, of course.
4. Catch the hooks at the bottom of the license plate holder in their mounting holes.
5. Attach the connector on the wiring harness to the back of the LED taillight—note the orientation of the pins.
 **NOTE** The first time you attach the connector, it may be a tight fit and difficult to push in. Keep trying—it's the correct connector and will go in.
6. Re-mount the license plate holder with the two screws at the top. Figure 14 is a view of the back of the license plate holder from the ground showing plenty of clearance for the tire.



Figure 14. View from ground up, showing back of LED taillight.

Preparing the Bike's Taillight Assembly

1. Remove the three wires from the taillight/brake light socket closest to the taillight's wiring harness—this would be the taillight's right side as you face the rear of the bike (see Figure 15). Note that the taillight wire (gray/blue stripe) goes to terminal 58, the brake light wire (gray/yellow stripe) goes to terminal 54, and the ground wire (brown) goes to terminal 31 (see Figure 16).

 **NOTE** Some early model LTs don't have numbers on their sockets. If your sockets don't have numbers—you'll have to rely on the colors of the wires for identification. If you have any doubts, reconnect the connector for the taillight and, while testing the lights, remove wires one-at-a-time to determine which is the taillight and which is the brake light.

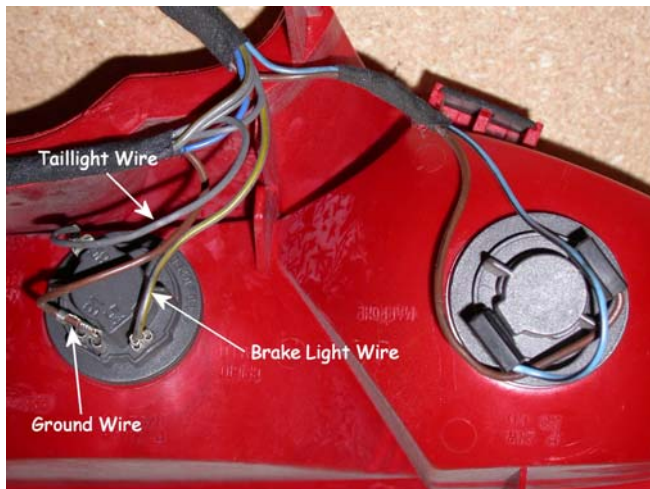


Figure 15: Identifying the wires on the taillight/brake light socket.

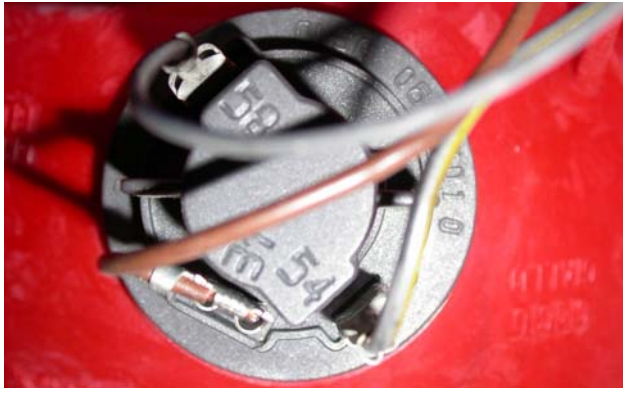


Figure 16: Close-up of taillight socket terminal numbers.

2. Cut off the small connectors on the wires that went to the taillight wire lug (#58—gray with blue strip) and brake light wire lug (#54—gray with yellow strip). Strip off $\frac{1}{4}$ " of insulation from each wire and crimp on one of the supplied female connectors (see Figure 17).

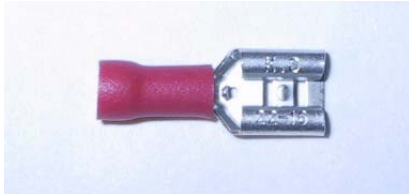



Figure 17: Standard push-on, female crimp connector.

 **NOTE** If you have the Rider West LED Saddlebag reflector kit, you already have the correct connector on the gray/blue wire. Be sure to reconnect the red wire coming from the reflector when you reassemble everything.

Connecting and Testing the LED Taillight

To facilitate connecting more than one wire to the socket lugs, you'll be attaching piggyback adapters (see Figure 18) to the wires coming from the LED taillight. The piggyback adapters have an extra lug for an additional wire. The original BMW wire will go on the extra lug.



Figure 18. Piggyback adapter



IMPORTANT Follow the instructions below carefully—contrary to intuition, the ground is the **WHITE** wire, the taillight is the **BLACK** wire, and the brake light is the **RED** wire.

1. Strip off $\frac{1}{4}$ " of insulation from each of the three wires coming from the LED taillight and attach (crimp on) a piggyback connector.
2. Prop up or have a helper hold the bike's taillight assembly near the back of the bike.
3. Connect the two halves of the bike's taillight main wiring connector.
4. Connect the LED taillight wires:
 - a. Push the piggyback adapter from the **BLACK** wire onto the taillight wire lug (#58).
 - b. Push the piggyback adapter from the **RED** wire onto the brake light wire lug (#54).
 - c. Push the piggyback adapter from the **WHITE** wire onto the ground wire lug (#31).
5. Connect the original **BMW** wires to the piggyback connectors on their respective lugs:
 - a. Gray/blue stripe wire to taillight wire lug (#58).
 - b. Gray/yellow stripe wire onto the brake light wire lug (#54).
 - c. Brown wire onto the ground wire lug (#31).
6. Turn the ignition key on. Everything should light up, including the LED taillight. If nothing lights up, you don't have the wiring harness connector pushed all the way in. If the bike's lights work but the LED taillight doesn't light up, you may not have one of the connectors making proper contact. Test the brake too. Correct any problems.
7. When everything works like it's supposed to, push the taillight assembly into its mounting space, being careful to engage the plastic tab at the top. Also, be careful not to pinch any wires. Replace the bolts that hold in the taillight assembly—don't over-tighten.
8. Figure 19 shows how the LED taillight looks. Figure 20 shows the LED brake light on.


 **TIP** When you take your bike in tires, mention that the connector for the LED taillight unplugs at the back of the light.



Figure 19. LED taillight on.

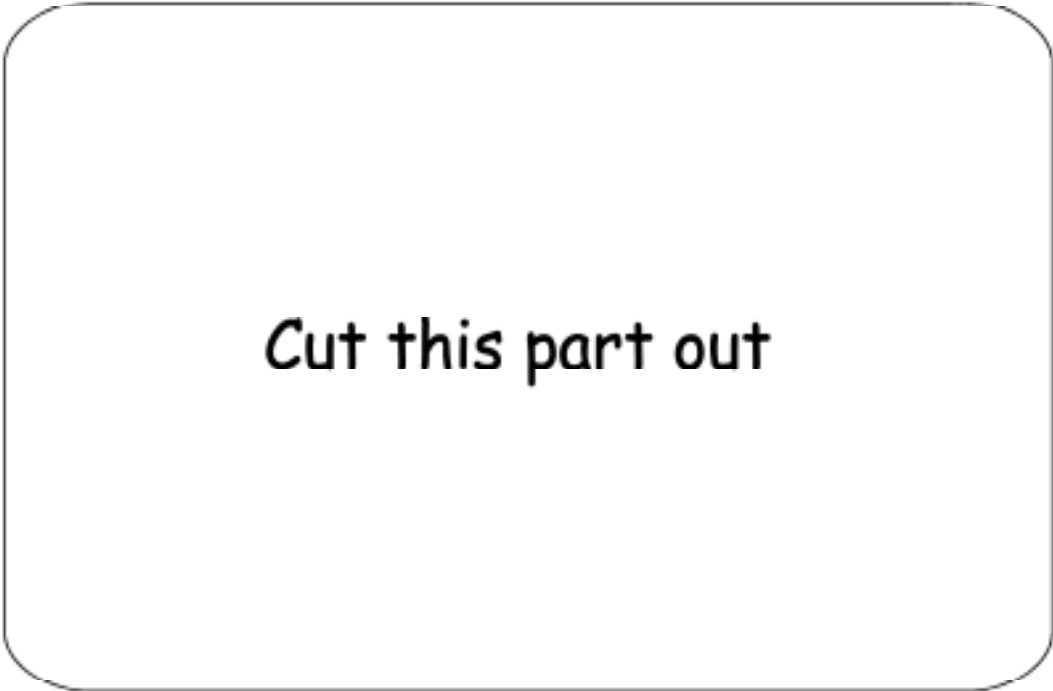


Figure 20. LED brake light on.

9. Go for a ride. Be safe.

Fold on this line

Opening Size: 3 9/16" x 5 7/16"



Cut this part out