BMW X5 Tail Lamp Assembly Repair

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INTRODUCTION

A common problem experienced by BMW X5 owners is a “Check Rear Lamp”, or “Check Brake Lamp” message from the Lighting Control Module. Many owners have found that their rear lights were not burned out, and after removing and re-inserting the lamps, the problem is solved briefly, but returns. The problem is a faulty rear lamp assembly. This can be cured by replacing the entire rear lamp assembly at considerable cost (if it is not under warranty). The following write up addresses a common manifestation of the problem, and how to repair the rear lamp assembly.

Please follow the following steps to diagnose your rear lamp assembly and repair it.

BACKGROUND INORMATION

The BMW X5 uses a sophisticated Lighting Control Module (LCM), which controls all lamp functions in the vehicle. This computer can detect a burned out lamp and alert the driver through the instrument panel display. In order to do this, the LCM sends signals to the lamps continuously, monitoring the connections and resistance of the lamp filaments. A poor connection in a lamp circuit can appear to be a faulty lamp. This is the common situation that X5 owners may experience.

STEP 1 – Determine which Bulb/Socket is Faulty

Determine which lamp is causing the problem. In the BMW X5 tail lamps, there is a signal filament bulb on the bottom of the lamp assembly, a dual filament bulb above it, and a single filament bulb above that for the directional signal. In my case, the suspect bulb was the lower single filament bulb. After removing and reinserting the bulb several times after lamp messages, the system refused to recognize a good bulb and continued to display the check rear lamp message. In my case, the problem bulb/socket was the lower bulb on the right side of the vehicle.

STEP 2 – Remove the Rear Lamp Assembly

In order to access and remove the rear lamp assembly, open the access panel for the appropriate side in the cargo compartment.

Access to lamp area on right side of vehicle.

Next, disconnect the wiring connector to the lamp assembly. There is a tab on the wire harness side of the connector that must be depressed to remove it from the connector on the lamp assembly. See photo.

Then, use an 8mm socket or wrench to remove the three nuts that secure the lamp assembly to the body. (Note: It's helpful to have small hands for this. You might recruit your wife, girlfriend, or children to assist with this!) See photo.

Remove 8mm nut

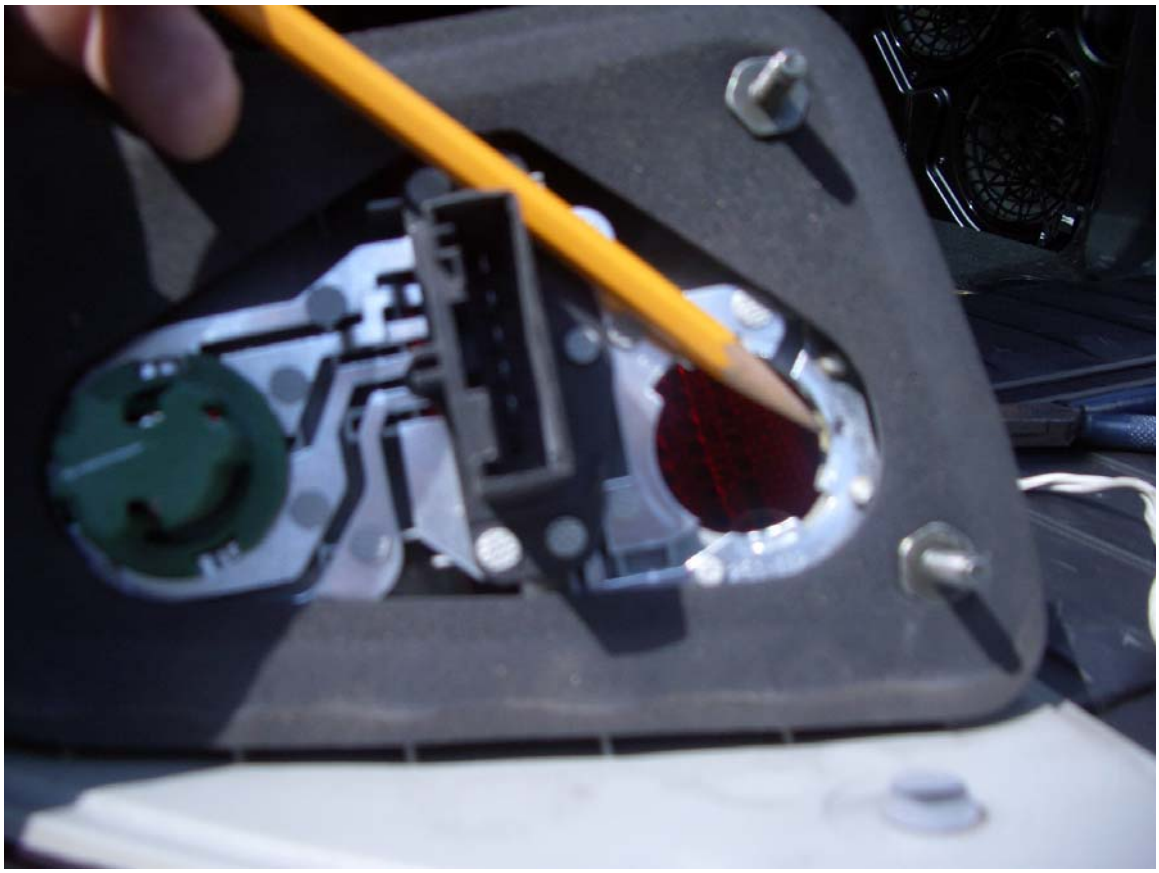
Remove wiring connector

Remove 2 more nuts (one not shown)

When connector and nuts are removed, then remove lamp assembly from vehicle.

STEP 3 – Determine where the fault is

Carefully remove the bulbs from the lamp assembly, noting their orientation so you can reinstall them in the same orientation. At first, it was difficult to find the problem. After conducting a number of continuity tests between all the bulbs, traces, and connector pins, I found that a VERY small area of the plated metal contacts on the lower bulb had been eroded by the electrolysis (metal transfer) from the current carrying light socket. It was evidenced by a small, black dot of oxidized material exactly where the lower bulb socket made contact with the surrounding metal (see photo).



This tiny defect in the conducting portion of the socket was sufficient to cause the poor lamp connection.

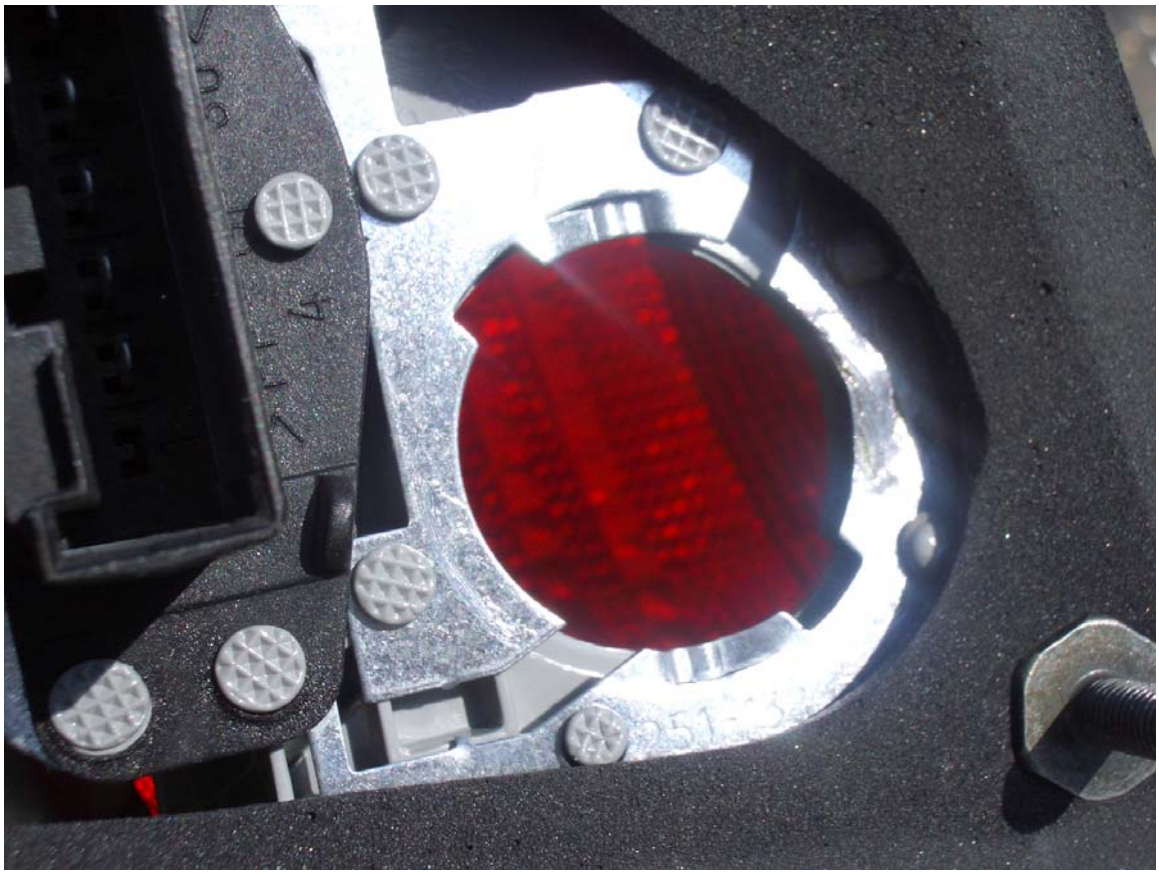
STEP 4 Repair the lamp assembly

If your lamp socket assembly shows considerably more deterioration than this, you may need to replace it. However, I felt that I could make a repair to this one that should provide several years or thousands of miles of service yet before replacing the lamp assembly is required.

The repair is simple. First, clean the area around the defect with some very fine sandpaper and remove as much of the oxidation as possible with an awl or tip of a small screwdriver.

Next, using a soldering iron and some good electrical solder, I laid a layer solder over the affected area, being sure to get adhesion to the remaining good medal around the defect.

Finally, I used a Dremel tool to smooth and blend the solder to form a smooth transition. See photo of repaired area below.



Before re-installing the lamps, I recommend that you remove the bulbs from the plastic socket assemblies, and using a pair of needle nose pliers, GENTLY bend the spring contacts on each to restore the contact pressure against both the lamp, and the lamp socket assembly, as these contact springs gradually relax over time.

Finally, reinstall all the lamps, making certain that you observe the orientations that you noted when you took them apart.

Before reinstalling the lamp assembly, be sure to TEST your repair by plugging in the tail lamp connector with the assembly still sitting in the cargo compartment. It is

important that you cycle the ignition switch ON and even start the vehicle before testing. Then, test the lamp functions (headlamps, turn signals, brake lamps). Simply turning on the headlamps without an ignition ON cycle may give you a false result as the LCM has not yet been reset from its previous LAMP OUT data.

If all is well, then re-install the lamp assembly with the 8mm nuts, and reconnect the wiring harness connector, being sure it seats fully.

Congratulations, you have just saved the cost of a new rear lamp assembly!