

Replacing the Antenna Mast on a 2007 Jaguar XKR

by

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Background

The 2007 Jaguar XK an XKR models utilize a power antenna on the right rear quarter panel which is unusually tall when extended. It easily catches on low garage doors, or can be damaged by the car wash, or encounters with other obstacles. In this case, it not terribly difficult to replace just the metal mast and nylon cable at far lower cost than replacing the entire antenna. I found a correct, new replacement mast on eBay for around \$15. The following write up describes this procedure.

1. Determine if only your mast needs replacement. If your mast is bent it will no longer function smoothly to retract into the body. If it is broken off and missing, then you may be able to replace the missing mast completely. In order to determine if a mast replacement is your correct repair approach, examine the following. Can you hear the motor running when you turn on the Ignition and have the radio operating? If you can hear the motor running, then it is quite likely you can repair just the mast. If it is not running, there is a fuse to check behind the center of the top of the rear seat. If, that is blown, replace the fuse and try it again. If the motor attempts to run and blows the fuse, you may still be able to replace the mast. If the motor makes no sound, then you should consider replacing the entire antenna. Or, if a piece of the nylon drive cable has broken off inside your motor/antenna assembly, you may need to at least remove the antenna from the vehicle to remove this debris from your antenna motor. This write up does not cover that process. Make sure the Ignition, and the radio is off and proceed to remove to mast.
2. The next step is to remove the damaged mast and cable if it is still part of your antenna. Start by removing the plastic cover on the fender where the antenna exits the body. This cover has a rubber grommet on the bottom and attaches to the hole in the body. It can be removed by gently twisting and rocking it back and forth while pulling it upward. I used some interior removal tools I purchased from Harbor Freight that assisted with this operation. See photos.



Plastic Interior Panel Removal Tools from Harbor Freight used to assist in removing the plastic antenna cover from outside the vehicle.

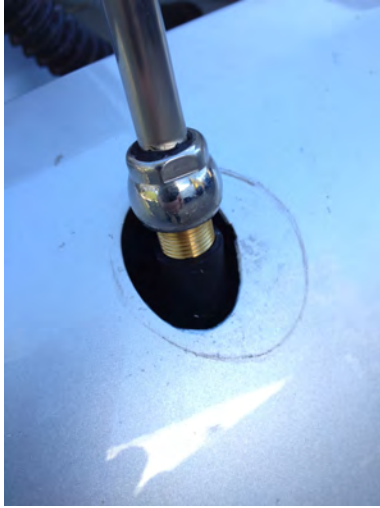


Plastic antenna cover after being coaxed upward from the body by twisting pulling and gently prying with the plastic tools.



This is what the bottom of the plastic cover looks like. It is rubber that was painted when the body was painted. Use care when removing it so as not to damage the paint on the outside of the cover, or on the body.

3. Next, remove the plastic cover by sliding it up and off the antenna mast. Underneath, you will notice a chrome retaining collar on the top of the antenna. It has two flats which can be grasped by a 13mm wrench. Loosen and remove the chrome collar. If, like mine, the mast is bent, the collar may not be able to slide off the mast as yet. Loosen the threads fully and you can force it off once the mast is removed. See photo below.



Loosen the chrome collar nut on the antenna.

4. Now, you will need a helper to operate the ignition and radio power while you remove the mast. Turn on the ignition, and then the radio. The motor should operate to attempt to raise the antenna. As it does, assist this process and the entire mast, and the nylon cable that operates it should push up and out of the antenna housing. Pull it all the way out, and **NOTE THE ORIENTATION** of the teeth on the nylon cable. The teeth should be facing the rear of the vehicle in this vehicle. When you go to install the new mast/cable, you will need to be sure the teeth are oriented in the same manner (i.e., to the rear).

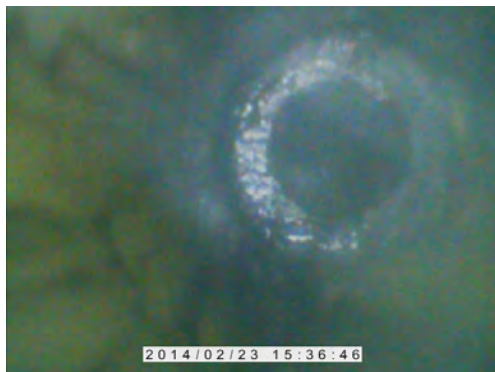


This photo shows the mast now removed, and the toothed cable is also being pulled out after the motor drives it as far as it can.

5. Once this is complete, turn OFF the radio, and the Ignition (save your battery).
6. Next, we're going to install the new mast and cable, but before we do, we need to check to be sure we have the proper mast and nylon cable length. And, we need to prepare a tool to assist us in installing the new nylon cable. To check the mast length, lay out the old and new masts with cable attached (if possible) side by side to insure they are the same. If you purchased the correct replacement mast, they should be the same. If your OLD nylon cable appears SHORTER than the new one, then there is the possibility that a piece was broken off inside and remains in the motor. If you proceed with the installation and you find that the antenna will not fully retract, then this will confirm this, and you will need to remove and disassemble the motor to remove the broken nylon cable segment.

Also, make sure that the connection collar from the old antenna came out on the mast, and is not still remaining inside the antenna tube. You should have a NEW connection collar already attached to the NEW antenna mast.

If the masts and nylon cables are the same length, then we need to prepare a tool to aid us in inserting the new cable. We should be able to simply insert the cable into the antenna tube and engage the gears inside the antenna motor. However, at the bottom of the tube, there is a ridge and makes hitting the center hole quite difficult. I found that by making a guide to push the cable toward the center hole, this job is quite easy. To make the guide, find a piece of 1/4" plastic garden sprinkler drip line and cut it to it extends an inch or so about the antenna tube. Then, using an Exacto knife, or razor blade, slit the hose along its length so it can be removed from the nylon cable.



This is a photo taken with a boroscope inserted into the antenna tube hole, and you can clearly see the ridge and center hole at the bottom of the tube.



A piece of 1/4" plastic sprinkler drip line is slit down its length and used as an alignment tool for the nylon cable.

7. Next, summon your helper again, to turn ON the ignition, and then the radio. Listen for the motor to run and then wait until it is fully stopped. LEAVE THE IGNITION AND RADIO ON for the next steps.

8. Next, be sure that the new antenna collar tube that came on the new antenna mast is in place on the mast, with the shoulder toward the top of the antenna. This will slip into the antenna tube to provide electrical connection to the antenna tube. Again, be certain that the OLD collar has been removed with the old mast.

9, Now, slip the split hose over the nylon cable and insert it in the antenna tube with the teeth toward the proper orientation (toward the rear of the vehicle). Slide the cable gently downward until you feel it pass into the hole and begin to engage with the gear in there. Once you feel it in the hole and engaging the gear, gently but firmly hold the nylon cable in place while sliding the split hosed up the shaft so you can remove it from the shaft before engaging the gear to pull in the antenna mast.

10. Once the split hose is removed, now, summon your helper again, to turn OFF the radio. After a few seconds, the antenna will run and begin to pull in the nylon cable. Assist in feeding the nylon cable and antenna mast back into the antenna tube. Don't worry if it doesn't fully retract the antenna just yet. Once the cable has pulled in as far as it will go, slide the threaded chrome collar over the end of the antenna a tighten it to finger tight. Now, before we install the plastic cover/grommet, turn the radio ON and OFF and cycle the antenna through several cycles. With the chrome collar tightened to finger tight, the system should begin to work correctly. If the antenna does NOT fully retract, then there may be a broken piece of the old nylon cable inside the antenna, and it will have to be removed and disassembled to remove this. With luck, however, your antenna will now be functioning properly.

11. If this is the case, then next we'll reinstall the plastic cover/grommet. I find it helps to lubricate it with some WD-40, or Silicone Spray, if available. Slide the cover over the antenna and start on the rear of the vehicle to engage the grommet to the body. Again, it will help to use a tool, such as the plastic interior tools, a credit card, or a very small/thin flat screwdriver (use care not to damage the paint). While applying pressure toward the car body, gently work the cover left and right, pushing the grommet around its perimeter with the tool to engage the body. When nearly complete, grab the cover firmly with both hands a twist back and forth gently while also pushing it into the body. You will feel it engage, and there should be no large gaps anywhere around the cover to the body.



Push and twist the cover left and right to re-engage it to the hole in the body.

12. Finally, I often lubricate my power antenna periodically, and now is a good time. With the antenna extended, spray some WD40 or Silicone Spray on a paper towel folded twice. Then slide the paper towel up and down the mast to transfer the lubricant to the mast itself. This acts to clean and lubricate it, and I recommend doing this every time you wash the car, and/or at least once a month.

Good luck with your antenna mast replacement, and I hope this helps. I found it was not that difficult once I figured out how to get the nylon cable to engage with the hole and gear.