

Tailgate Wiper Motor Replacement

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The first step is, of course, to remove the motor.

Remove the plastic piece covering the base of the wiper arm. Remove the nut, then the wiper arm. Note: it is a millimeter thread.

Once you remove the wiper arm, you will not that there is one more nut that holds the entire assembly to the vehicle. Use a deepwell socket to remove that nut, the plastic angle spacer, and the rubber gasket.

To get at the motor, lower the tailgate. Remove carpeting. On the driver's side of the tailgate there is a small lever. This is the interlock that keeps nitwits like me from putting the glass up when the tailgate is down. Make sure you have something to support the glass, move the lever, and CAREFULLY raise the glass. My dad broke the glass on his, and it was mucho expensive to get new glass - even more expensive if he had gotten the rear window defroster.

Once the glass is up, you can access the motor through the inside of the tailgate. The motor is powered by four wires. Disconnect the connector. Remove the screws that hold the motor assembly to the tailgate. Lift the motor out and take it to your workshop.

Remove the back cover. You'll see a motor, a circuit board with a couple of relays, and a cover with four wires and four strips of brass. This covers the gear mechanism.

Remove the cover. You'll see a worm gear on the motor shaft, two gears that engage to the worm gear, and a larger gear that engages to the two smaller gears. This gear drives the shaft that turns the wiper arm.

Mark the gears so that you can engage them in the same position when you put them back. Remove the two idler gears (optional).

Note: It is VERY important that the main gear is reinstalled properly. It contains metal strips that make engage the contacts on the cover and control the wiper.

Now for the tricky part: Put the assembly firmly into a vice and gently tap on the wiper shaft to push the main gear out. We put the nut back onto the shaft to provide more area, and used a large punch and a hammer. Each tap of the hammer moved it just a little. Patience is necessary.

Once you get it out, you'll find some white corrosion. Remove that. Get the shaft as clean and smooth as possible. Do the same with the sleeve. You can run a twist drill through it if you like (by hand, not using the drill motor).

While you have the shaft out, you might want to clean the knurls that keep the wiper arm from slipping.

Grease the shaft and the hole REAL WELL. You might want to put a little on the gears. Don't overdo it. If you want to lubricate the motor bearings, be careful not to get any lubricant into the motor itself.

Reinstall the main gear and the two idler gears in the exact position as they were before you removed them.

Clean the metal strips on the main gear. Clean the four contacts that are in the cover. Reinstall the cover. Reinstall the main cover.

When you reconnect the connector, the motor will probably return to the rest position. You might want to test the motor before reinstalling it.

Reinstall the motor. Lower the glass and congratulate yourself for not breaking it. Put the carpeting back on the tailgate and close it.

Reinstall the gasket, angle spacer, and the nut.

The motor assembly froze up in the first place because water wicked into the space between the shaft and the sleeve. You'll want to prevent this.

Find a piece of rubber tubing that fits somewhat snugly over the shaft, and very tightly over the threads of the sleeve. Cut the tubing so that it will lightly contact the wiper arm. Grease the shaft and the inside of the tube. The shaft will be turning inside of the tubing, and the wiper arm will be sliding against the end of the tubing. Make sure that all of those areas are VERY well greased. Make sure that the end of the tubing and the mating part of the shaft are smooth. Make sure that there is no grease on the knurling that engages into the wiper arm.

Reinstall the wiper arm in the rest position. Put the glass up and test the wipers.

Credits: Charles Drouillard (my dad) invented the rubber hose modification.

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