



## Tech Talk: How to Bench Test a Starter Motor

by Don Harris

It's always challenging tackling an unknown. I've always looked for the best documentation I could find for rebuilding, restoring and testing. There are a number of test procedures in the Overhaul and Service manuals but after I rebuild a starter, I looked for a way to bench test it. It's a pain to install and find out it doesn't work then have to remove it again. I can't take credit for the following as I found the procedure in a YouTube video, so I captured some of the pictures and documented the process.

The only tools needed are a set of jumper cables and access to a 12-volt car battery. I happen to have a spare battery for testing, but you can simply use the battery in your car. I also bought a remote starter switch I found on Amazon for about \$15 to make the testing easier. It is possible to just use a jumper wire in place of the remote starter switch.

**Testing the Solenoid:** The job of the solenoid is to engage the starter override clutch so that the starter engages the flywheel ring-gear and turns-over the engine for ignition. Connect the positive battery terminal to the battery terminal on the starter. Connect the negative battery terminal to the starter case (ground). Connect a remote starter switch to the battery terminal and the ignition switch terminal on the starter. Pressing the remote starter switch engages the starter assembly like your car's ignition switch.



The override clutch with the gear should slide forward to engage the flywheel and the starter motor should turn. If it does not, then the solenoid needs to be replaced.



**Testing the Motor Only:** The motor is what gives the flywheel torque that is needed to start the engine. Leave the battery negative cable connected to the starter housing and touch the positive cable to the motor terminal identified in the picture above.



The motor should spin but the override clutch should not engage, i.e. slide forward.

If the starter motor does not turn, then the starter needs to be fixed or replaced.

**Testing the Override Clutch Only:** Leave the negative cable connected to the starter case and touch the positive cable to the ignition terminal on the solenoid. The override clutch should slide forward.

