The enclosed fan speed sensor determines fan rpm by detecting the passage of a steel bolt head. The bolt needs to be ferromagnetic (attracted by a magnet). Some types of steel, including many stainless steels, are not sufficiently ferromagnetic for the sensor to detect. A simple way to test the material is by placing a magnet on the bolt head. If the magnet sticks with a force similar to when it’s on a piece of carbon steel, the bolt should be sufficiently ferromagnetic.

Additionally, avoid mounting the fan speed sensor’s detector face close to other ferromagnetic steel objects, as they may interfere with sensor operation. Mounting the sensor’s base to a steel bracket should not cause any issues. The fan hub may also be steel, if the bolt head is raised far enough above the hub.

To be detected, a bolt head must sit at least 1/4 inch (6 mm) above the fan hub. If a bolt head is not high enough it can be raised with washers, or with a lock nut, as shown.

The face of the fan speed sensor must be within 1/16 to 1/8 inch (2 to 3 mm) of the bolt head. If multiple bolts are used for detection, rotate the fan by hand and check that all pass within 1/8 inch of the sensor. Check for wobble in the fan hub and insure the bolts stay within the detection range at all times.