

Jim's Not-so-smooth Ride

Duty Area: Repairing Governors

Jim's riding mower had been working well until about halfway through the mowing season. He started noticing that the engine was not running very smoothly and seemed to get worse the longer it ran. The machine would lunge forward with changing engine speed—slow, then fast, then back again. It sounded as if the engine was running out of fuel even with a full tank and with no apparent damage or issues with any of the parts. He had had everything serviced at the start of the season, but the engine was running rough and not idling correctly at high or low throttle.

The local repair shop said they believed the governor system needed repairs. The technician showed Jim the overstretched governor spring and the worn threads on the metal screw for the linkage. These conditions were keeping the governor arm from holding tightly to the governor shaft, which was also worn out. The engine would need a new governor spring and shaft, which meant taking the engine off the frame to get to the shaft for its replacement. The technician said that, while the mower was disassembled, it would be best to also replace the gear, crankcase gasket, and other parts.

Big Question: How does the operation of an engine governor system affect its ability to operate correctly?

Focused Questions:

- How does inspection of governor parts affect the decision to replace the system or the entire engine?
- What might be early symptoms of governor part wear or defects?
- What adjustments are made to reestablish proper governor operation?

Project-Based Assessment:

Have students identify pneumatic, mechanical, and electronic governor systems and their respective parts, using available engines and/or diagrams/photos of governor systems. Students may work in teams to discuss and share information related to proper governor system function and operation. Students will determine proper governed engine speed, according to manufacturer specifications.

Resources:

[How does a small engine governor work?, Briggs & Stratton](#)
[How Small Engine Governors Work](#)