Why Does My Engine Backfire or Afterfire?

Is the small engine on your lawn mower, snow blower or outdoor power equipment making loud noises? This FAQ from Briggs & Stratton will help you identify the problem and find solutions.

What are backfire and afterfire?

Backfire is a condition described as a loud bang, poof, explosion, etc., while the engine is running or while shutting down. Afterfire occurs after the engine has been shut off. Note: Backfire and afterfire through the carburetor will not harm the engine at all!
Find out the most common causes and possible fixes for engine backfire and afterfire.
Causes of Small Engine Backfire & Possible Fixes
Causes of Small Engine Afterfire & Possible Fixes

What causes a small engine backfire & how do I fix it?

Backfire typically occurs when the engine is decelerated rapidly.
Common Causes of Backfire:

- Lowering engine speed too fast
- Gasoline, which contains higher blends of alcohol
- Carburetor adjustment set too lean
- Muffler construction can induce backfire
- Higher than normal engine temperatures

- Some carburetors can induce backfire due to the sensitivity of internal transitional passages
  (This condition cannot be corrected).

Possible Fixes for Backfiring:

- Lower engine speed slowly
- Follow small engine fuel recommendations and/or switch to brands with low or no alcohol
- Adjust carburetor for optimum performance
- Inquire with equipment manufacturer about increasing air volume to decrease engine temperature

What causes a small engine afterfire & how do I fix it?

Afterfire occurs after the engine has been shut off.

Common Causes of Afterfire:

- Shutting off the engine at high RPM, causing fuel to pump through the engine for ignition
- Gasoline that contains alcohol has a tendency to ignite easier, which can cause afterfire
- Small engine muffler type and manufacture
- Carburetor adjustment may not be properly set for correct engine performance
- Anti-afterfire solenoid may not be working properly

Possible Fixes for Afterfire:

- Allow the engine to cool by idling the engine down with proper speed (15-30 seconds)
- Change to a different non-alcohol or alcohol brand fuel
- Ensure proper carburetor adjustment for optimal engine performance
- Contact the equipment manufacturer for updated designs in air control baffling, mufflers, etc.
- Check the anti-afterfire solenoid for proper operation
  Note: If equipped with an anti-afterfire solenoid, shut engine off at full throttle