



AD

6 Reasons Motorcycles Backfire When Starting (Explained)

[Motorcycles](#) / [By Michael Thomas](#) / [July 12, 2021](#)

It'll make you jump out of the saddle when you fire up your motorcycle, and a backfire explodes from your tailpipe.

Same backfiring is common and normal even on a healthy, finely-tuned machine.

Still, chances are if your bike is frequently backfiring on startup, it's backfiring while you're roasting the road.

You're probably wondering why your motorcycle is backfiring on startup in the first place.

We answer that question in this article.

[Table of Contents](#) 



Here Is the Short Answer to Why a Motorcycle Backfires on a Startup:

Most motorcycles backfire on startup if they're running rich, either from a faulty carburetor, jet, needle or from excessive uncombusted fuel in the exhaust system. Running rich means the fuel in the engine is more than the required air-fuel mixture.

The 6 Most Common Reasons Motorcycles Backfire When Starting:

Below are the six most common reasons your motorcycle may backfire during startup:

1. Running Lean: Clogged Carburetor

Many bikes these days are fuel-injected, but if your motorcycle is carbureted, regularly inspecting and occasionally repairing your carb is part of your routine maintenance.

If your carb-cruiser starts to backfire, there's a good chance that this is the place to start.

A dirty carb can clog and mess with your ignition process. If your carb backs up with crud, fuel can't flow. Once fuel flow starts to lag, your air-fuel ratio runs lean.

Real quick, for those of you asking, *what's an air-fuel ratio?*

[Privacy](#) - [Terms](#)

Your bike's motor is engineered to run on a specific ratio of air to fuel. If that ratio is off by an overabundance of air and too little fuel, we say it's running lean.

How Air-Fuel Ratio Influences Backfires

And now, for those saying, *cool story, but what does air-fuel ratio have to do with backfires?*

If there's excessive fuel in the air-fuel mix and not enough air, we say it's running rich. Running rich is the frequent cause of what we typically mean when we say "backfire," but what some engineers and mechanics will distinguish as an after fire:

Unburnt air/fuel mixture passes through the exhaust valves into the exhaust system. As a result, combustion occurs in your exhaust manifold and outside the designated combustion chamber, resulting in a gunshot-like sound blowing out of your tailpipe.

That's what most people mean when they say backfire. However, those who distinguish that as an "after fire" define "Backfire" as an unburnt air/fuel mixture rushing back into the intake manifold and combusting. As a result, the motorcycle will make more of a bang than pop, and this type of backfire actually has the potential to damage your motor.

A clogged carburetor blocks fuel and causes a lean air-fuel ratio, which can cause this more severe backfire.

The backfire you hear at startup is probably the "after fire," so this article will refer to that as a backfire, as most readers and writers on the subject do. Because this is the more common occurrence, we'll cover that more extensively.

Still, for the sake of troubleshooting, inspecting, and cleaning your carb and establishing if you're running lean and running the risk of the more serious backfire is the best place to start.

If your carb is clogged and your motorcycle is running lean, you run the risk of that big bad type of backfire we described above, and even if your bike doesn't backfire on startup, your acceleration will suffer.

If you catch it before it causes damage, the solution is simple: Clean your carb and let open your fuel path back up.

Use a high-grade carb-cleaner safe for your bike to dissolve that debris clog.

Not to sound like a dad's voice on a broken record, but if you make inspecting and cleaning your carburetor part of your routine maintenance schedule, you can stop this potentially severe type of backfire before it starts.

2. Running Rich: Too Much Fuel, Not Enough Air

Running rich sometimes allows uncombusted fuel to enter the exhaust system and combust therein, causing what many of us refer to as a backfire.

As we mentioned earlier, a specific amount of air and fuel is required to cause combustion to take place in your motorcycle's chamber.

If too much fuel enters the combustion chamber, it can pass through the exhaust valve and into the exhaust system.

If this happens, it'll combust in your exhaust and pop out the back of your tailpipe, causing that backfire.

In addition to the annoying pop sound, running rich is wasting fuel. So if you keep track of your average MPG and your bike is experiencing regular backfires, check it out. I bet your MPG dropped.

Running rich also drags your engine performance and reduces your acceleration.

Air is just as important to ignition and acceleration as fuel is, and if you're blowing fuel into your chamber, it's at the cost of air, and your performance takes a hit.

When you're running rich, the ignition process won't be enough to burn up all your fuel.

That excess fuel flows out of the engine's cylinder head, through the exhaust valve, and into the exhaust system, where it burns up in the heat of the exhaust header to cause that popping backfire.

Excess fuel in the cylinder is known to inhibit the ignition process; the ignition can't burn the fuel during combustion. The excess fuel is normally expelled from the cylinder head via the exhaust valve.

A fuel-injected bike generally uses a CPU to adjust your air-fuel ratio automatically. If you suspect a rich mix on a fuel-injected bike, you may need to flash the CPU at the dealership or a mechanic trained to diagnose the CPU on your make and model.

For carb bikes that run rich, clean and retune your carbs to make sure your air-fuel mix is where it's meant to be.

Please also read our article about [reasons your motorcycle has no power](#).

3. Running Low-Grade Fuel

Using low-grade fuel on a motorcycle that's designed to operate on high-quality fuel can cause your bike to backfire, both when starting up and when riding.

Your owner's manual tells you what octanes your bike runs best on, and I'm willing to bet it's high-grade.

Using low-grade fuel not only affects your engine's fundamental performance, but it's also a fast way to get dirty or contaminated gas in your tank and sooner than later in your fuel lines.

When you start your bike, dirty gas affects your fuel injection. As a result, some debris particles burn up, others escape into the exhaust system, and in the process, backfires occur.

Using the high-grade fuel suggested in your bike's owner's manual is an easy way to prevent backfires from happening on your motorcycle on startup.

4. Clogged Carb Jets

Clogged carb jets are another frequent culprit of a motorcycle that backfires on startup.

A carbureted bike uses carb jets to respond to your throttle input to power its pistons.

If those jets get clogged with debris, your fuel injection backs up, and your acceleration lags, and eventually, backfiring happens.

Unclog those jets with spray-canned carb cleaner by washing the components in your jets and needles to prevent backfires, and keep that fuel path open to the flow.

Make sure to also read our article about [motorcycle gear change problems and solutions](#).

5. Timing Issues

If your motorcycle's electronic timing or point timing is off, you may experience backfiring during motorcycle's startup ignition.

Electronic timing hit the moto-market a few decades ago. With CPU diagnosis, troubleshooting a backfire-inspiring timing issue is signally less complicated for a mechanic equipped to read your make and model.

Electronic timing volts a signal to the ignition coil, alerting it that the cylinder is in a compression stroke right before it fires.

If the timing is off, the compression and tension process is off, and when you start your bike, it will backfire.

If your motorcycle is using points and condenser set up, the timing is set manually. If this is set incorrectly, your engine's mechanical process suffers the same inadequate timing and backfires outlined above.

If you have a copy of the service manual (different than the owner's manual), you may be able to use the instructions and time it yourself. This is a complicated job, though, and it's different on every bike.

If you're unsure of your ability to set your points timing correctly, there's no shame in having a mechanic familiar with your make and model set the points timing for you.

Also read our article about [symptoms of a loose motorcycle chain](#).

6. Incompatible Exhaust Pipes or Upgrades

If your motorcycle is equipped with pipes that are incompatible with its exhaust system, or if your air-fuel ratio isn't adjusted to accommodate your new pipes, your bike can backfire on startup.

If your bike is carbureted, your carb will have to be adjusted to accommodate the new exhaust pipe.

If it's fuel-injected, your CPU will need to be flashed and updated with the specs of the new pipes so it can adjust your air intake accordingly to compensate for the change in air exhaust.

Whether your air-fuel mix is adjusted automatically by electronics or manually by carbs, your motorcycle works best when it maintains harmony between what it's pulling in and what it's pushing out.

This is actually one of the most common causes of backfiring on the list, so common that some states have laws against pipes that are shorter than a specific length because they're so prone to backfiring, and consider them dangerous and disruptive.

I don't know about all that; I guess it could scare an unsuspecting rider and cause some injuries. But, still, at the very least, it isn't good for your bike.

Despite the bureaucratic gripes, shorties, pipes less than a foot long, are still popular on custom bikes, as they don't distract from the aesthetic of the painted tins and chromed engine.

They're also loud, and some moto-maniacs want it that way.

Now I'm not here to judge, but a shorty will almost always backfire while riding, and often it backfires on startup too.

The simple fact is that less than 12 inches doesn't leave room for a built-in baffle, which manages any turbulent fuel flow the way that a muffler does on a car.

Other riders use aftermarket exhaust that may be the correct length, but it's made by a parts manufacturer other than your bike's OEM.

As long as your bike's carb or CPU can be adjusted or flashed to read the difference, this isn't a mechanical issue.

However, the unfortunate reality is that many riders rush-job their exhaust upgrades up onto their bikes themselves without proper adjustments, or they use pipes that won't work with their engine specs.

Either way, if you're experiencing backfires on startup on your motorcycle, and your bike is equipped with aftermarket pipes, your chances of backfiring on startup are high.

Was this article helpful?  

[← Previous Post](#)

[Next Post →](#)

AD