

Ask the Mechanic

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SEND YOUR
QUESTIONS TO

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Why does my car engine make loud banging noises when driving uphill?

Hello Paul, my car has started making a loud knocking noise from the engine, especially when accelerating uphill. It was not there before. I worry it could damage the engine if I continue driving. Could this be low-quality fuel, worn pistons, or timing issues? How urgently should I get it checked? **Beatrice Nakanwagi.**

Hello Beatrice, I understand your concern about the loud knocking noise, especially when your car is under load during uphill drives. The sound you describe is typically indicative of premature ignition or detonation, commonly referred to as "engine cylinder knock." This issue arises when the air-fuel mixture in the cylinders ignites prematurely, creating a shockwave that physically hammers the pistons against the cylinder walls, hence the term "cylinder knock."

Most modern cars are equipped with engine management systems that utilise knock sensors to detect excessive cylinder knock. When these sensors identify the problem, they alert the engine management system, which then reduces engine power to prevent mechanical damage.

Ignoring this issue can lead to reduced engine efficiency, as unburnt fuel is wasted, and diminished performance due to power loss from detonation or the engine management system's response. In severe cases, this can result in damage to engine components such as pistons, rings, cylinder walls, and

spark plugs. If your engine is experiencing excessive cylinder knock, it requires urgent attention to avoid costly repairs.

To help you determine whether the issue stems from fuel quality or a mechanical breakdown, let me explain how both can cause cylinder knock.

Using fuel with a lower octane rating than recommended by your car's manufacturer can lead to premature ignition under high heat and pressure, particularly during uphill driving. The octane rating indicates how controllable the fuel burns during ignition; higher octane fuel burns more consistently, minimising the risk of detonation.

For optimal performance, higher-octane petrol can be beneficial. In Uganda, petrol is commonly available in two grades: 93 RON (regular) and 95 RON (premium).

Many modern high-performance vehicles, including certain models from Subaru, Toyota (such as the Land Cruiser LC300), Mercedes-Benz, Audi and Volkswagen, are designed to run on premium fuel, as indicated on the fuel flap or in the owner's

manual. If your vehicle falls into this category, it is advisable to use 95 RON petrol to ensure optimal performance, efficiency and engine protection.

If your car does not have a specific requirement for premium petrol, using a higher octane fuel can help protect your engine from cylinder knocking due to premature ignition. Additionally, it may improve fuel economy and enhance engine power.

Other factors may also contribute to engine noise. In modern cars, the engine management system controls when the spark is delivered through a combination of electrical and mechanical components. If the spark occurs too early (a situation known as advanced timing), it can hinder the upward movement of the piston and cause knocking.

A mechanic can inspect the timing system to ensure it is correctly aligned with the manufacturer's specified timing reference marks. A diagnostic tool can quickly assess whether the timing is advanced or if the knock sensors are faulty.

Your car's loud noise during uphill driving could also be due to worn internal engine components, such as pistons, piston rings, connecting rods, and main bearings.

These components operate under high pressure and heat, and without proper lubrication from regularly serviced high-quality oils, they can wear down significantly. This wear can lead to loud knocking sounds, especially under increased pressure during hill climbs. If your mechanic rules out fuel-related issues or engine ignition problems, the possibility of mechanical damage to these components must be considered. Repairing this kind of damage is invasive, requires specialised skills, and can be expensive.

NOTE
USE HIGH-OCTANE
PETROL



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