

Ask the Mechanic Paul Kaganzi



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QUESTIONS TO

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A Q&A page where a mechanic answers readers' car questions with expert advice, troubleshooting tips, and maintenance guidance.



Why does my car take longer to start when it rains?

Hello Paul, after heavy rain, my car sometimes has difficulty starting in the morning. I often need to crank the engine several times before it finally starts. However, once it is running, it operates smoothly throughout the day. How can I prevent this from happening every rainy season? Okello

Hello Okello, while it is true that on rare occasions the starter motor can cause a delayed or difficult start due to rainfall, other factors can also contribute to this issue after a rainstorm. These include leaky spark plug wells, rain intrusion into damaged ignition coils, and issues with spark plug wires. Additionally, moisture-driven corrosion on battery terminals can cause hard starts after rainfall. Let us first focus on the starter motor.

Although the starter motor can fail due to exposure to rain, it is generally designed by car manufacturers to withstand brief moisture exposure and splashes. However, because the starter motor is located at the lower part of the engine, it can be vulnerable to rain-related problems that might cause its failure, both in the short and long term. Water conducts electricity,

and in rare cases, moisture can enter the solenoid attached to the starter. This can result in an electrical short circuit, preventing the signal needed for ignition when you turn the key. Additionally, prolonged exposure to rain-driven moisture can corrode the copper wiring or terminals of the starter, creating resistance that reduces the power delivered to the motor, making it difficult to start the engine.

Another issue is the failure of the Bendix gear, which engages the engine flywheel when starting. If rainwater accumulates in the starter motor, it can wash away grease and lead to corrosion damage over time. This can hinder the Bendix from moving freely to engage the flywheel, resulting in difficulty starting or a complete failure to start. A qualified mechanic can detach or dismantle the starter motor to assess the level of damage and recommend whether components should

be replaced or if a new starter is needed.

It is also important to ensure your vehicle has an effective and well-installed under-ride splash shield. This helps minimise the amount of stormwater that splashes onto exposed electrical components, such as the starter and alternator, especially when driving through flash floods or puddles.

Leaky spark plug wells can allow rainwater to build up around ignition coil components. This water can create a pathway for high voltage from ignition coils to leak, causing contact with the engine block instead of reaching the spark plugs. As a result, you may experience delayed starts, hard starts, and engine misfires due to weak or non-existent sparks needed to ignite fuel. It is beneficial to carefully examine the spark plug well covers and seals to ensure they are sealed properly against splashing, particularly when driving over flooded roads.

Damaged surfaces of ignition coils or insulation on ignition cables can also allow moisture to enter, weakening the spark generated by the plugs and leading to difficult starts. Replacing cracked or leaking ignition coils and wires is a good way to mitigate this issue.

Corroded battery terminals may also contribute to delayed or hard starts following rainstorms. When rainwater mixes with acid and road salts, its conductivity increases. This is especially problematic when rainwater contacts corroded battery terminals. The moisture can create new conductive paths, causing voltage drops, short circuits, or outright circuit failures. This results in poor ignition and delayed or hard starts.

To prevent this issue, regularly clean corrosion off the battery terminals and apply a little petroleum jelly to help prevent future corrosion buildup.

What causes the airbag light to stay on?

Hello Paul, my dashboard shows that the passenger airbag is on, even when no one is on the seat. Is this a sign of a failing sensor, or could something else be triggering the weight system? John

Hello John, normally the 'Passenger Airbag On' indicator should illuminate only when there is an occupant in the seat. This seat is equipped with a passenger occupancy detector, which consists of a seat pad with a pressure mat that senses whether someone is sitting in it.

If the 'Passenger Airbag On' light appears on the dashboard even when the seat is unoccupied, the seat pad sensor is the first component to suspect. Several mechanical or electrical issues can cause the seat pad sensor to malfunction and trigger a false notification. Common reasons for failure include issues with the pressure mat or pad sensor, loss of calibration, or circuit failure.

The sensor's mesh-like structure can get damaged, leading to short circuits, often caused by someone standing on the pas-

senger seat to access the sunroof or kneeling to retrieve something from the rear seats.

A damaged pressure mat circuit can keep the airbag warning light on even when the seat is empty. This may be resolved by replacing the damaged seat pad sensor or pressure mat. At times, the seat pad sensor can lose calibration and mistakenly register weight on the seat when there is none. A mechanic can use a diagnostic tool to recalibrate the sensor to recognise zero weight accurately, ensuring it provides correct information.

Additionally, the seat pad or pressure mat may experience circuit failure due to corrosion affecting connectors, sockets, or the harness. This often results from moisture entering the system during cleaning or from accidental spills. A car electrician can inspect the system to determine the extent of corrosion damage and replace any affected SRS yellow circuit or connectors.

The seat occupancy detector is designed to be sensitive, which means it can occasionally produce false notifications even without any actual failures. It is essential to rule out these factors before assuming there is a technical failure in the passen-

ger airbag system. Common non-failure factors that can trigger false notifications include:

1. Electronic interference: Gadgets such as smartphones, tablets, or laptops can disrupt the electrical field of the seat pad sensor, particularly if it uses a capacitor or frequency distribution system. Ensure there are no electronic devices on the passenger seat if you see the airbag light illuminated without a passenger present.

2. Non-moving weights: Items such as shopping bags, five-litre containers of juice, or backpacks filled with books may be detected by the weight-sensing pressure pad. This can create a false impression of an occupant in the seat, triggering the airbag light. Avoid placing heavy cargo exceeding the weight threshold of 29kgs, as even lighter objects weighing around 5kgs can sometimes activate sensitive seat pressure sensors.

3. Poorly designed accessories: Thick seat covers that are tightly fitted can keep constant tension on the seat pad sensor, resulting in a persistent display of the airbag light. To resolve this issue, consider removing these covers and replacing them with lighter, more compatible options designed for your vehicle.

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