

Starter problems caused by ignition switches

A faulty ignition switch can cause a starter to fail. Rotating electrics specialist Rhino Automotive gives details of a few things to look out for to prevent a replacement starter from falling victim to the same fault that damaged the first starter.

Renault 2.0 dCi

The starter motor on the Renault Master, Traffic/ Nissan Primastar/ Movano/ Qashqai/ Megane and others, is manufactured by Valeo, a premium grade supplier. It's a conventional type with a high speed, wound field coil motor driving the pinion through an epicyclic reduction gearset. The rotating parts run in needle roller bearings, demonstrating the designer's intention of a long life span.

All things being equal, the starter will last the life of the van, the most common exception being overspeed due to a faulty ignition switch.

The ignition/key switch is comprised of two distinct components – the mechanical key & lock barrel and the electrical switch it turns.

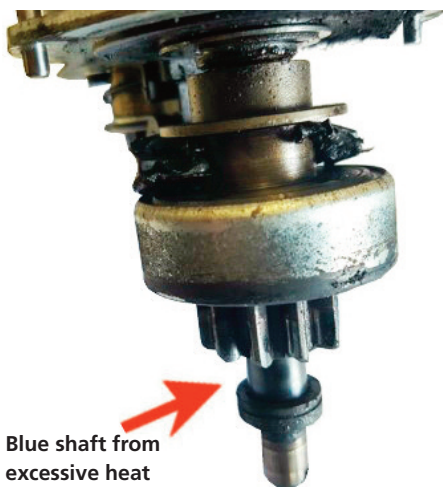
Electrical switch failure is not uncommon on these vans as they advance in years/usage. The key (mechanical section) may behave normally – i.e. return to run when the start twist is released – but the electrical switch doesn't disengage the starter, resulting in the starter staying engaged when the engine starts.

When this happens, it's the equivalent of your average diesel car pulling 18,000 rpm and leads quickly to burn-out of the starter motor.

Visual clues are the pinion and shaft of the starter showing heat discolouration, usually blue, and the nose sniff test will give smell of fried electrics, a distinct, pungent aroma that is non-mistakable. There's not much you can do to prevent it, but be sure that if you remove a failed starter showing any of the symptoms already mentioned, change the switch or the replacement starter will do a repeat performance.

Hyundai Sante-Fe 2003 on & Trajet 2001 on/Kia 2.0 CRDi

This starter motor is manufactured in Korea and is based on a proven Nippon-Denso design. It has a wire wound high speed motor, driving a concentric clutch and pinion assembly via reduction gearing. The pinion is engaged by an in-line solenoid pack, housed within the starter body. There are increasingly frequent

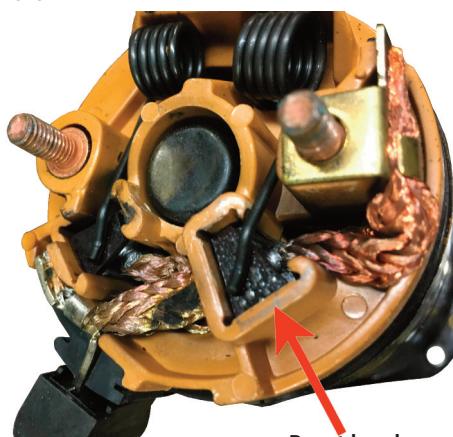


Blue shaft from excessive heat

examples of starter failure due to overspeed on these models. This has been traced to faulty ignition switches.

The ignition/key switch is comprised of two distinct components – the mechanical key & lock barrel and the electrical switch it turns. The key (mechanical section) may behave normally – ie return to run when the start twist is released – but the worn electrical switch doesn't disengage, the starter stays engaged when the engine starts.

The driver may not be aware that this is happening at the time, the first indication they get of something being wrong is when they next try to start the vehicle and it doesn't crank over.



Burnt brushes

Visual clues are the pinion and shaft of the starter showing heat discolouration, usually blue, and the nose sniff test will hint of fried electrics, it's a distinct, pungent aroma that is non-mistakable. There's not much you can do to prevent it, but be sure that if you remove a burnt-out starter, change the switch or the replacement starter will do a repeat performance.

Nissan Micra Petrol K11 K12 1992-2007

This starter motor is manufactured by Valeo, and is a premium quality component. It is a conventional direct drive unit with a saddled solenoid. There are common examples of starter failure due to overspeed on these models. This has been traced to faulty ignition switches.

The ignition/key switch is comprised of two distinct components – the mechanical key & lock barrel and the electrical switch it turns. The electrical switch is a straightforward replacement, there have also been several reports of the mechanical section giving trouble – probably due to the stop/start, short journey usage profile of a lot of these cars and the resultant wear.

It is strongly recommended that if mechanics encounter an overspeed event they should change both the barrel and the switch. If you change just the switch section and the vehicle fries another starter, chances are the customer will hold the mechanic responsible. The driver may not be aware that this is happening at the time, the first indication they get of something being wrong is when they next try to start the vehicle and it doesn't crank over.

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