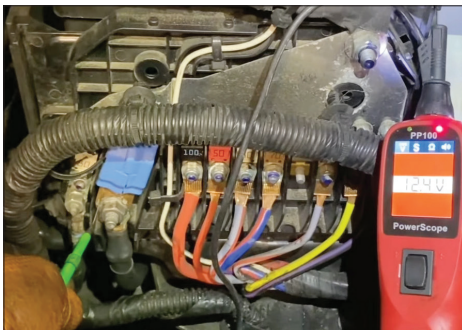


A non-starting Transit Tourneo



Battery voltage was present at this connector, but not within the copper in the cable itself

The driver of this Ford Transit Tourneo had stopped at a shop for a few minutes, and when they returned, it would not start. When I turned the key, it would not crank at all, but there was a single click with each turn of the key.

My first thought was to use a power probe and to find if there is any voltage drop anywhere between the battery and the starter motor. I decided to use a jumper battery to test the connection of both the ground and the power supply to the starter. I connected the positive cable of the battery booster to the positive terminal of the battery, and I connected the negative cable directly to the turbocharger. This would provide a solid ground for

the starter. The engine still did not start, proving that the Transit's ground circuit was good, and that the problem was somewhere between the positive battery terminal and the starter motor.

I connected a power probe to the positive terminal of the battery, and attempted once again to start the engine. The battery voltage remained at the same level at all times, even when the key was turned. This proved that the starter was not even attempting to engage, and was certainly not drawing any current from the battery.

The next step was to determine what voltage was being supplied to the starter. The power probe showed only 1.9V at the starter. The same 1.9V was also measured at the battery cable at the alternator.

The search for the problem turned back towards the battery. The airbox was removed, to allow a full view and access to the fusible links and other connections at the battery. While there were several fusible links at the battery, there was only one which had a large enough cable to supply the starter (and provide alternator power back to the battery), so my attention concentrated around this connection.

The larger cable was stranded copper, with a crimped steel connector that was bolted onto the battery bus bar. The posts that the connector was attached to, the nut that attached the connector

to the bar, and the body of the connector were all found to have battery voltage. When the power probe was connected to just the copper strands within the cable, the voltage dropped to 0.8V. I

quickly discovered that with some minor wiggling of the connector, the voltage in the copper strands would fluctuate.. A few gentle wiggles actually caused the crimped connection to break.

A replacement crimp connector was attached and soldered onto the copper cable. The connector was then reattached to the post on the battery bus bar. Battery voltage was now present at the starter, and the engine cranked and started.

This diagnosis and repair was relatively quick and easy, and all that was required was a methodical approach to the problem, while using the proper tools, which was a power probe in this case.

Scan the QR code to view the complete video of this diagnosis and repair on Kennedy's Garage YouTube channel.



**Peter Kennedy,
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