

Solving an RV8 hot start problem

In July 2016 Tim Volker launched a thread on the V8 Bulletin Board seeking fellow members' advice on a hot start problem he had with his RV8. Almost exactly a year later Tim posted a note saying he had discovered the cause of the problem and a fix.

Tim Volker posted his original note saying "I have an RV8 with 25,000 miles. The engine starts and runs beautifully. I can drive the car for hours and, after stopping, I can re-start the engine with no problem. However, I've had a few occasions during the past year when I couldn't start the engine when it was hot. This problem only occurs when queuing for 20 minutes or more with the engine running as I recently experienced while awaiting to cross the Dartford Crossing and again while waiting to board the train at Calais.

If I turn the engine off whilst in a long queue, it won't restart. When I turn the key, all the electrics come on and the fuel pump runs but the **engine doesn't crank at all**. There are no ticks from the starter motor. The problem is definitely heat related because it only happens after sitting in traffic for 20 minutes or more and then only after I turn off the engine and immediately try to restart it. After allowing the car to cool for 20 minutes, I can restart it with no problem.

I'm wondering whether the issue is related to either the black box containing the ignition module which is tucked up under the dashboard, or the starter motor itself. It seems to me that both of these components would get hotter when sitting in traffic by not having the benefit of air cooling them as the car moved forward. The cooling system on the engine itself works perfectly and the temperature gauge never rises above normal no matter how long the car sits and idles.

Several fellow members posted their suggestions and views on the cause including fitting a new starter motor heatshield, a sticking starter motor solenoid and replacing the starter motor with a Powerlite hi-torque geared unit. **Malcolm Roots** also mentioned he had experienced the "same problem three summers running and it turned out to be a faulty relay". He provided a link to an earlier [thread](#) on the V8BB which covered that.

A day short of 12 months later **Tim Volker** posted a note saying "I just thought I would close out this post. It **has taken two years to discover the cause of my RV8's hot starting issue** but solving it has been difficult due to the intermittent nature of the problem.

What was found

Here's what we discovered last week when the very hot weather we experienced in the UK repeatedly prevented my car from starting when the engine was very hot. Typically, after letting the car cool for 10 or 15 minutes, the car would start as normal.

To recap, my issue was that if it tried to start the engine when it was very hot, I would turn the ignition key, the fuel pump would prime, but the starter motor wouldn't engage and the engine wouldn't turn over. During the past two years I **changed the ignition module** and **installed two new starter motors** (the most recent on being a new high torque starter motor from Clive Wheatley) but neither of these changes solved the problem.

Last week during the hot weather, I took the car to Mark Wanstall at [Fisher Services](#) in Sydenham in London SE26 and using his test meter we determined that the immobiliser located high up under the dashboard (part number **ZKC6463**) was preventing the starter from engaging. I have read that the relay serving the immobiliser is susceptible to failing when very hot, although Mark Wanstall had never previously encountered this on an RV8. Here's an extract I found from the **TVR bulletin board** - different immobiliser but same concept:

Most TVRs have a factory fitted immobiliser. The immobiliser isolates three circuits to prevent theft.

1. The fuel pump
2. The ignition circuit
3. The starter motor solenoid

The first two items consume small amounts of electric current, the starter solenoid rather more. Within the immobiliser are three small relays that enable this isolation to occur. The immobiliser relays for (1) and (2) cope well and they generally do not cause problems, but the **immobiliser for (3) the starter solenoid frequently fails**. The failure is probably due to excess current and the fact that the starter solenoid is inductive and causes the relay contacts to burn out. When your engine is hot this problem is made worse, thus it is termed "The hot start problem". The Modification (Hot start Mod) uses an external large relay to control the starter solenoid thus avoiding large currents through the immobiliser relay and potential problems."

As it was not easy to access the immobiliser high up under my RV8's dashboard, and as I don't use the immobiliser anyway, we simply bypassed it by running a wire from the main fuse board directly to the ignition module. Presto, problem solved."

MG RV8

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Illus	Part Number	Description	Quantity
SWITCHES AND RELAYS-continued.			
1	YWC 10208	Alarm ECU	NLA
1	ZKC 6470	CONTROL UNIT ASSEMBLY	
		BURGLAR ALARM	1
2	YWX 10007	Transmitter	1
	ZKC 6519	CONTROL UNIT ASSEMBLY	
		BURGLAR ALARM	1
	YWX 10007	Transmitter	2
	YWK 10004	Battery	2
1	ZKC 6503	CONTROL UNIT ASSEMBLY	
		BURGLAR ALARM	1
	ZKC 6518	Transmitter	1
2	ZKC 6520	CONTROL UNIT ASSEMBLY	
		BURGLAR ALARM	1
	YWX 10007	Transmitter	NLA
2	ZKC 6518	Transmitter	1
	YWK 10004	Battery	2
3	YWC 10214	Microwave unit	NLA
3	ZKC 6472	Microwave unit (mass movement sensor)	1
4	BMK 1900	Cable tie	2
5	PMZ 306	Bolt	2
6	WA 106041	Plain washer	2
7	ZKC 6463	ECU-engine immobiliser	1
8	YXT 10002	ECU-Catalyst overheat	2
9	YYA 10017	Grommet-Catalyst overheat	1