



There are a lot of factors that will affect the Road Chef oven and its ability to produce heat over an extended period of time. We have attempted to list the main ones below and help you to understand them using layman's terms and what you might be able to do to rectify the problem.

1. Voltage of Battery

What voltage is your battery at when you start using your Road Chef oven? Traditionally 12 v batteries at full charge sit around the 12.6v mark indicating they are 'full' as the energy drains out of them their voltage drops lower until when they are really flat they are sitting around the 10.5-11 volts – or lower! If you are starting from a lower voltage point then this will significantly affect the ability of the oven to get to its top temperature as the battery is struggling to pump out enough energy to allow it to heat up.

A good analogy is if a dam is 100% full then when you lower the flood gates then the maximum amount of water is flowing out when the gates are at a certain level. If the dam is only 80% full then when the gates are at the same point less water will flow out even though the gate is at the same place.

2. Ongoing charge of battery

Many people use the Road Chef oven when they are driving, others use it while their engine isn't running relying on the energy stored in a battery bank or something similar. Whilst your battery is connected to a running vehicle it is being continuously recharged and will sit around 13.7-14.7 volts, while a battery bank is not. When a battery is being recharged it is (usually) able to pass on the highest amount of energy to appliances like the Road Chef so it can operate at its full potential. If the battery isn't receiving charge then its ability to continuously operate at its full potential decreases over time, especially if more than one appliance is being used, like a fridge or lights, at the same time.

3. Size/type of battery

The 'size' or Amp hour and battery type also influence the ability of the battery to store energy and release it over an extended period of time. We suggest a minimum of a fully charged 120 Ah deep cell battery to ensure a consistent 2+ hour cook.

4. Age of battery

Like most things in life, the older something gets the harder it finds it to perform at its optimum. An AGM glass battery will last anywhere from four to seven years, while a deep cycle gel cell battery can last from two to five years.

5. Connection quality

The quality of connections is a much under rated element in the transfer of energy in a 12v system. The optimum connection for a Road Chef Oven is through the supplied Anderson Plug connection. However, we understand that not everyone has access to this in their vehicle, so we have included a cigarette style plug. The challenge with using the cigarette style plug to run your Road Chef is the quality and age of the female part of the cigarette plug is variable. In older vehicles it is likely the plug has become loose due to having phone, DVD and other kinds of plug put in and out of them numerous times. As it becomes loose the connection between the metal parts isn't as 'tight' so this reduces the ability of the connection to efficiently transfer the required amount of energy. When the unit is only drawing 1 or 2 Amps like a phone charger this is no problem, however when using the Road Chef you are looking at 8+ Amps so it starts to really test the connection. Any poor connection results in the connection heating up, rather than your oven! Many cars,



especially later model ones have reduced the size of the wiring running to the plugs, as they are only expecting people to run their phones not ovens through them. As such this has reduced the ability of the plug to provide the required energy to run the Road Chef. The plug you use should have a minimum 10A.

6. Length of cable from battery to Road Chef  
All cables used to transfer voltage have resistance, or friction, so some of the energy that you started with at the start of the cable is used up before it gets to the end of the cable. The longer the cable the more 'voltage drop' there is per metre. So if your battery is under the bonnet of your vehicle and the connection to the Road Chef is at the back of the vehicle then you may have 3-5m+ of cable that is lowering the amount of voltage and as such the amount of Amps that can be used by the oven to create heat.
7. Size of cable from Battery to Road Chef  
Carrying on from point #6 using the wrong size cable can also influence the voltage drop. If the wire is too thin, or made from the wrong material (copper is best), then this can lower the voltage at the connection to the oven. Similarly, if the wire size is too big, then this can also cause voltage drop. Your 12 Volt expert or auto electrician should be able to help you select the right size wire to get optimal results.
8. Running multiple appliances  
When you are running multiple appliances you again need to consider the cabling that you are using. Using an analogy, if you have a 10cm pipe that can supply your pump 100l per minute you can not then go and add another pump that also requires 100l per minute. To do this you will need to increase the size of the pipe or you will have 2 pumps only getting 50l per minute. So, if you want to run your phone, a fridge, maybe a dashcam or GPS and then try and add the Road Chef to it you will need to increase the size of the wiring, or the pipe, from the battery.
9. What you put into the oven  
What you put in the Road Chef significantly affects the amount of time it takes to cook it. The time required to cook a roast isn't always the same! Even in your home oven it will take 1.5 hrs to do a 1kg pork roast but it will take 3.5 hrs to do a 3 kg roast. So, if you put 2 frozen pies into the Road Chef it will take longer than 2 defrosted pies. Similarly, if you put in 4 frozen pies it will also take longer than the 2 frozen ones. A few good rules of thumb are to try not to 'overload' the oven, if you are 'loading it up' then try defrost the items before putting them into the oven and also rotate them between the top and bottom shelves and the front and back throughout the cook.
10. How you measure temperature  
There are lots of different methods people will use to measure the temperature of an oven. What you are looking to measure is the air temperature, not the surface temperature inside the oven. The oven does have a thermostat that will turn the oven on and off when it reaches/falls below temperatures. This cannot be accurately used as a temperature gauge. If you are keen to check the temperature, we recommend using one of the small gauges that come with a stand that can be purchased at most camping, hardware, BBQ and kitchen shops. Get a smaller one and place it on the bottom tray of the oven.