

THE EXTRACTOR

Cooling Your Car Interior

Surely you would have on many occasions rushed to drive off because it is 'baking hot' inside the car – especially if you have left it in the hot afternoon sun. In Asia, the temperature inside a parked car can reach a high of 50-60°C in a very short time. This device beats the heat by using up to 4 Extractor fans to cool the interiors, it is effective and reliable! It can effectively bring down the high interior temperature by 10-15°C

Normal solar films claims to reflect up to 70% of the sun rays, (*the maximum tinting approved by ROV*), but the remaining 30% heat soon builds up inside the car. The longer it stays in the sun, the hotter the interior gets. Here is where the Extractor can do what solar films cannot, and this is how it works-

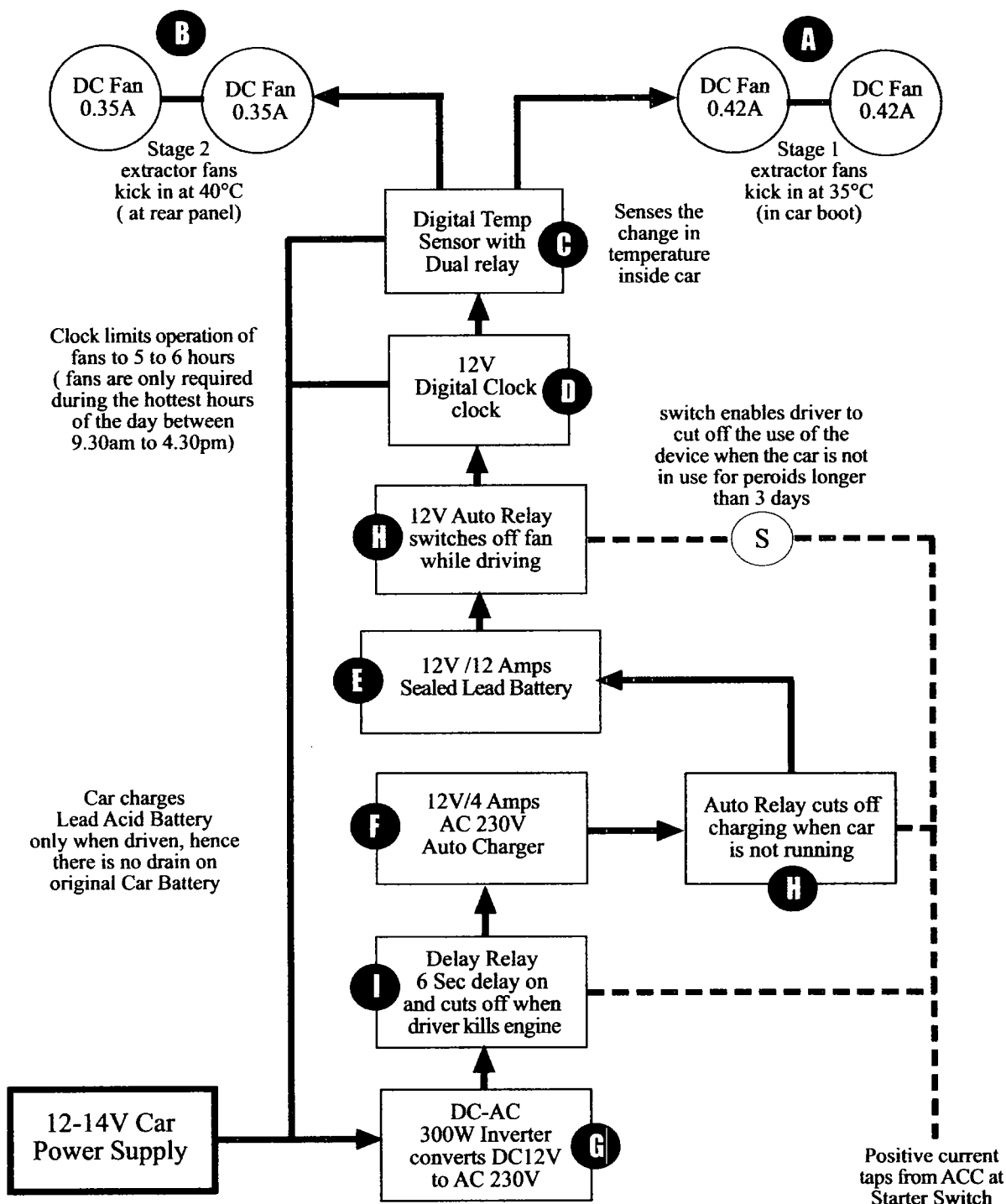


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The Extractor Block Diagram



Note: for explanation see next page

This Product is designed by Alfred Fun

The Extractor

How it works-

- A** On reaching 35°C, 2 fans (rated at 0.42A) installed inside the boot compartment force warm air through ventilating fins (positioned on both sides of the boot) out of the car. By making use of the ventilating fins in the boot the original car design remains untouched
- B** If the temperature hits 40°C, 2 more fans (rated at 0.35A each) installed on the rear panel of the car come on to cope with the extra heat by extracting more warm air from the passenger compartment into the boot.
- C** The extractor fans are controlled by temperature sensors at the rear panel. 2 fans in the boot are set to turn on at 35°C, while another 2 fans on the rear panel are set to turn on at 40°C. Falling temperatures will cut off the fans automatically.
- D** To limit the operation of the fans daily, a digital clock cuts off the fans from 4.30 pm in the afternoon to 9.30 am the next morning. The actual running hours is about 3 to 4 hours on the average, because the temperature sensor also limits its operation depending on the weather.
- E** The fans are powered by a 12Volt /12 Amps Sealed Lead battery that is separate from the car original battery. Only the clock and temperture sensor are running on the car battery source at only 80mA maximum.
- F** In order to recharge the Sealed Lead battery safely, a 12 Volt 4 Amp automatic AC charger is used to maintain sufficient charge in the battery always.
- G** Since AC chargers are more economical than alternators, a 300W DC-AC Inverter is used to power a 12Volt 4 Amp AC charger that comes with a cooling fan.
- H** Relays are used to switch off the fans while driving and cut off the charging when not driving.
- I** The Inverter needs a constant 12-14 Volts to operate properly. However when starting the car, the internal voltage drops to 9-10 Volts momentarily. To avoid this sudden drop in voltage, a delay relay (6 sec delay) turns on the inverter only after starting the car.

There is no worry about power drain on the Car Battery, as the Charger and Inverter only works when the car engine is running.(the same as all other electrical appliances in the car). The system is maintenance-free except for replacing the Sealed Lead Battery life when its life span runs out (average 18 months' time). For maximum cooling it is best to switch the car air-con to fresh-air intake mode (some cars comes with auto fresh air circulating feature)before leaving the car.