

NISSAN FIGARO BATTERY AND ALTERNATOR PROBLEMS

PRECAUTIONS

- **Never disconnect a battery with the engine running – the alternator will be damaged**
- **Wear eye protection and gloves when working on a battery. Take care not to short circuit battery terminals with spanners etc – the battery can explode!!**

The usual problem experienced with car batteries is loosing charge. Everything may be fine one day and the battery is flat the next morning. Similarly all is well if you use the car daily but if you leave it standing for a few days – you find the battery going flat.

Before carrying out any testing – theres a few basic things that need to be checked

- **Check and, if necessary, adjust alternator belt tension.**
- **Most batteries nowadays are maintenance free – if not, check the liquid level and top up with distilled / deionised water.**
- **Check that the battery connectors are tight and free from powdery deposits. If necessary remove the connectors and clean the connectors and terminal posts with emery paper. Smear the terminals/ connectors with Vaseline.**
- **The car needs regular decent runs to ensure that the battery is fully charged. A short journey every day especially in winter (light, window heater, blower etc on) may not be sufficient to keep the battery fully charged so consider using a trickle charger .**

There's a particular problem on the Nissan Figaro which prevents the battery being charged. This can also result in a damaged alternator so it's worth checking out on every Figaro!! We've also been aware of batteries being unnecessarily replaced on Figaros that have this problem.....



Peel back the red rubber boot on the battery +ve terminal. You'll find the four wires shown. Corrosion in this area can lead to one or more of these coming adrift so the alternator is no longer connected to the battery. This will not cause the alternator charge light to glow so there's no immediate warning that there's anything amiss!

If necessary – secure the wires and smear Vaseline to prevent future corrosion

Once the basic checks have been done and any rectification completed – it's time to move on to testing. It's worth saying at this point that the alternator charge light on the dashboard will only reveal certain fault conditions (eg a snapped drive belt) so the fact that the light isn't glowing doesn't necessarily mean no fault!



In order to test a battery or alternator you'll need a digital multimeter. A basic unit can be bought for under £10 – a well worth investment for future diagnostics!

After the car has stood for a couple of hours after it's last run – connect the meter across the battery terminal as shown above and set the meter to read volts.....

- **Less than 12 volts** – the battery is flat – recharge and check alternator output
- **12 volts** – battery charge is low – again recharge and check alternator output
- **About 12.5 volts** – the battery is well charged.

To check alternator output start the engine and run at about 2000RPM with the headlights switched on. Conduct the same test as above.

- **13 volts or less** – low charge rate. Repeat after checking alternator belt tension. If no improvement then likely an alternator problem.
- **13.4 volts or more** – healthy charge system.
- **Over 14.6 volts** - the alternator is overcharging

Switch off the headlights – the voltage may increase slightly but should not peak above **14.6 volts**.

An overcharging alternator (ie above 14.6 volts) will damage the battery and often causes vehicle bulbs to fail prematurely.

The above tests define the state of charge of a battery and confirm that the alternator is / isn't working properly. The next test will confirm the condition of the battery

With the battery fully charged and the vehicle having stood for several hours – connect the multimeter as above. Disconnect the HT lead between the coil and distributor to prevent the engine firing. Crank the engine whilst an assistant observes the multimeter. If the reading falls below 9.5 volts after about 10 seconds cranking then the battery has a low capacity and is probably approaching the end of its useful life.

So.....the tests above may well indicate that it's time for a new battery!

But If testing has shown the alternator charge to be fine and the battery capacity test is fine..... but..... the battery still goes flat then what needs to be done?

- In our experience – the most significant problem is Figaros not being used enough to maintain good battery charge – especially in winter when electrical equipment such as headlights are regularly used. You may find it necessary to use a battery charger from time to time to restore the battery to full charge.
- Generally a fully charged battery in good condition should retain its charge for several weeks. If it doesn't then it's often due to “parasitic

leakage” ie something using electrical current whilst the car is idle. There are obvious problems (eg interior light being left on) and the less obvious. It’s important to remember that some power is always used with the car idle – electric clock, ECU memory, radio memory, alarm but this is tiny. The usual background current drain is a few milliamps (mA) - an interior light left on, by comparison would consume around 0.5 A! We wouldn’t be concerned unless current leakage exceeded 50mA

To test for current leakage disconnect the +ve terminal of the battery – set the multimeter to read amps and connect one probe to the battery terminal – the other to the connector. Anything more than a few milliamps (certainly more than 50mA) signifies a problem that needs further investigation by an auto electrician. Usual culprits are:

Alarm Systems – Good quality alarm / remote locking systems rarely give problems.

Radio – Original radios can develop the most peculiar problems including all the display lights illuminating spuriously!

ECU – It’s very, very rare for ECU’s to give any problems. We have come across one problem whereby the ECU activated one of the fuel injectors whilst the car was parked!

Alternator – A faulty diode pack allows backflow of current from the battery into the alternator windings.

Unfortunately some of the problems occur intermittently so a spot check doesn’t always reveal anything. It may be necessary to disconnect a piece of equipment in order to see if a problem is eliminated!

So.....tests indicate that you need a new battery. Indeed if the battery is obviously of Japanese origin – it may be worth replacing it. Remember that an automatic car can’t be bump started so a battery in good condition is vital! You could well get blank looks if you ask at a motoring shop for a Nissan Figaro battery. However good brand batteries (Bosch, Halfords, Yuasa, Exide, Fiaam.....) use a common designation and they’ll be a **54** in the battery code eg a Halfords battery will be HB**054**. Otherwise ask for a battery for “*Nissan Micra K10 83- 88 Japan model small terminals*” (K10’s were also made in Sunderland – these use a different battery). Many stores will also test battery / alternator free of charge.

*Whilst a type 54 battery is the original specification for the Figaro – there are others that will fit. We recommend **type 57** – this is longer than the original and has a significantly higher power capacity – it’s a heavy duty version of the original. For the sake of a couple of pounds – well worth buying when you need a replacement battery!*

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