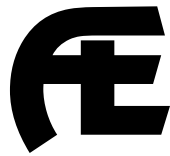


Remember to check for burnt out units! The tell tale signs are, burnt smell, blue armature shaft, damaged teeth on the pinion, and rattling broken bits inside that fall out when you shake the starter!



Before replacing a suspect warranty unit, check that the terminals have not been left loose. This will leave burnt terminals or plastic around the terminals where connections were not tightened correctly.

AUTOELECTRO

Starter Motors & Alternators

Technical Bulletin 4

DIFFERENT TYPES OF STARTER MOTORS

The Inertia Starter was the first and most simple form of Starter Motor to be used. Inertia Starter Motors were last fitted as original equipment in 1986.

The pre-engaged Starter Motor was developed to provide a smoother engagement. As the name suggests, this type of unit moves the drive pinion into engagement with the ring gear before the power is applied to rotate the engine. This type of Starter is characterised by a solenoid, which is “piggy-backed” on to the main body

Like the Inertia starter, the pre-engaged unit has a direct drive ratio, ie one turn of the starter gives one turn of the drive pinion.

In order to reduce the size and weight of pre-engaged units, development of gear reduction Starter Motors was the next step, these units use permanent field magnets, and have gears to reduce the speed at which the Starter turns the engine. These gear reduction Starter Motors are more powerful than a conventional pre-engaged unit. These units do not have a direct drive ratio, due to the gearing, they do however have much more engine turning torque. The motor main shaft is separated from the pinion by a small gear reduction unit built into the starter body. This reduction enables the motor to rotate much faster than the pinion, and hence requires less power per turn of the motor to produce the necessary engine cranking power

BASIC CHARGING SYSTEM CHECKS (THAT EVEN YOU CAN DO!)

When customers complain that the Alternator they have just fitted is not charging, there are some basic checks that will help you eliminate possible causes other than the alternator. For this you will need some jump leads and a basic voltmeter.

- Connect the voltmeter across the battery, with the vehicle running, the voltmeter should read between 13.5V and 14.5V if the alternator is charging.
 - If the voltage is below this, then there is no charge going in to the battery.
 - The battery warning light on the dash needs to be checked by putting the vehicle on ignition, the battery light should come on, and go out when the vehicle is started.
 - The Earth needs to be checked to the alternator, by connecting the black jump lead to the negative battery terminal, and the other end to the body of the alternator, if the charge rate changes across the battery on the voltmeter then the earth needs renewing.
 - The main feed is checked in a similar way, by connecting the red jump lead to the positive terminal on the battery and the other end to the main feed at the back of the alternator, again if the charge rate changes, then the main feed needs renewing.
 - Finally check for fan belt dust on the front of the alternator, not all belts will squeal when slipping
- If in doubt about a suspect alternator – call our technical help line for advice**

RING OR FAX TECHNICAL FOR FURTHER HELP
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