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shows you how

BMW 3-Series (92-98) & Z3 (96-98) Haynes Online Manual

1 General information and precautions

General information

The ignition system is controlled by the engine management system (see [Chapter 4](#)), known as DME (Digital Motor Electronics). The DME system controls all ignition and fuel injection functions using a central ECM (Engine Control Module).

The ignition timing is based on inputs provided to the ECM by various sensors supplying information on engine load, engine speed, coolant temperature sensor and intake air temperature (see [Chapter 4](#)).

Some engines are fitted with knock sensors to detect “knocking” (also known as “pinking” or pre-ignition). The knock sensors are sensitive to vibration and detect the knocking which occurs when a cylinder starts to pre-ignite. The knock sensor provides a signal to the ECM which in turn retards the ignition advance setting until the knocking ceases.

On all models, a distributorless ignition system is used, with a separate ignition coil for each cylinder. No distributor is used, and the coils provide the high voltage signal direct to each spark plug.

The ECM uses the inputs from the various sensors to calculate the required ignition advance and the coil charging time.

Precautions

Refer to the precautions given in [Chapter 5A](#).

Testing of ignition system components should be entrusted to a BMW dealer or other qualified repair shop. Improvised testing techniques are time-consuming and run the risk of damaging the engine management ECM.